

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 57-11908
Exam Date: 06/28/2019

1. Current Owner:
JEAN MCGHEE
PO BOX 253
GRAND VIEW ID 83624
2. Accompanied by:
Phone No: Harold Simper
Address: 24128 20 Mile Rd Grand View, ID 83624
Relationship to permit Holder: Representative, neighbor, friend

3. **SOURCE:**
SHOOFLY CREEK
- Tributary**
SNAKE RIVER

Method of Determination: GIS/Department records

B. OVERLAP REVIEW

1. Other water rights with the same place of use: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
57-7059	Ground Water	Municipal	GIS
57-11780 (Permit)	Ground Water	Municipal	GIS

Comments:

Municipal water right 57-7059 and municipal water permit 57-11780 overlap the POU. Right 57-7059 is owned by the city of Grand View and is authorized to divert .5 cfs. Permit 57-11780 was filed in 2009 to supplement municipal right 57-7059 in order to increase the amount pumped from the wells, with an additional diversion of 1.00 cfs. Both the municipal right and permit share the same POU and POD's with one another. Proof of beneficial use for the permit was submitted May 7, 2015. The municipal right and permit convey some water to the home at the POU for right 57-11908. However, no water is used outside of the home for irrigation from the overlapping municipal water permit or right.

2. Other water rights with the same point-of-diversion: YES Overlap

Water Right No.	Source	Purpose of Use	Basis
57-7198	Shoofly Creek	Irrigation	Dept. records

Comments:

Based on Department records, the POD overlaps with irrigation water right 57-7198. The rights are additive so combined limits are not necessary to address the overlap with right 57-7198 at the weir. Water right 57-7198 is authorized to divert .14 cfs and 31.5 acre-feet for irrigation. The weir structure at the POD has multiple channels to allow diversion for various other water rights.

C. DIVERSION AND DELIVERY SYSTEM

1. **LOCATION OF POINT(S) OF DIVERSION:**
SHOOFLY CREEK SW¼ NE¼, Sec. 35, Twp 05S, Rge 03E, B.M. OWYHEE County

Method of Determination:

PLACE OF USE: IRRIGATION

Twp	Rng	Sec	NE				NW				SW				SE				Totals
			NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	NE	NW	SW	SE	
05S	03E	22													3.0				3.0

Total Acres: 3.0

Method of Determination: GIS/Department records

3.

Delivery System Diagram Attached (required). Indicate all major components and distances between components.

 x 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

 x 1:24,000 or greater. N/A Aerial Photo Attached (required for irrigation of 10+ acres). x 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
	Marathon Electric	5.0	GVC184TCDR7011DSL	N/A	3" Discharge

D. FLOW MEASUREMENTS

1.

Measurement Equipment	Type	Make	Model No.	Serial No.	Size	Calib. Date
	5 gal Bucket				5 gallons	
	Sprinkler pressure gage					

2. Measurements:

Measured water discharging from garden type hoses at 3 different locations. 2 timed measurements to fill a 5 gallon bucket. (Times were so close that only 2 measurements were taken at each garden hose site). The first location was on the edge of the northern pasture with an average time of 32 seconds resulting in 9.38 gallons per minute. The second site was next to the large garden area. This site had an average time of 65.5 seconds to fill the 5 gallon bucket which converted into 4.58 gallons per minute flowing. The third site was in the garden with an average fill time of 85.5 seconds resulting in 3.51 gallons per minute. The three sites totaled 17.46 gallons per minute flowing.

There is a small area of irrigated grass/pasture on the northern end of the property. There are 16 sprinkles irrigating this area. All sprinklers have a nozzle diameter of .1250 inches. We used a hand held pressure gage on the nozzles at various locations throughout the sprinkler line. The nozzle pressure was consistently 38 psi.

Flow was measured at the weir POD. A 2 foot wide opening at the weir with a staff gage reading of .45 converts to 1.94 cfs (flowing from Shoofly Creek into the GVMC) per the University of Idaho Measurement Manual.

E. FLOW CALCULATIONS

X Additional Computation Sheets Attached

16 sprinklers in pasture area with a constant pressure of 38 psi equate to **46.0 gallons per minute (gpm)**.

Only 1 pasture area is irrigated at a time. Both are irrigated with 16 sprinklers all with 1/8" nozzles.

5 gallon bucket at tree site by pasture needed 32 seconds average to fill 5 gallons bucket. Converts to 9.38 gpm.

5 gallon bucket at tree site by garden needed 65.5 seconds average to fill 5 gallon bucket. Converts to 4.58 gpm

5 gallon bucket in large garden area needed 85.5 seconds average to fill 5 gallon bucket. Converts to 3.51 gpm.

Conversion from time to gallons per minute: $\frac{5 \text{ gal bucket}}{\text{Average time to fill bucket}} \times \frac{60 \text{ seconds}}{1 \text{ minute}} = \text{GPM}$

9.38 gpm + 4.58 gpm + 3.51 gpm = **17.46 gpm**

46 gpm from 16 sprinklers + 17.6 gpm from various garden hoses = **63 gpm**

63 gpm / 448.83 gpm for 1 cfs = **.14 flow rate**

See attached spreadsheets.

Measured Method:

Theoretical: .14 cfs

Permit allowed: .09 cfs

I am recommending a diversion rate of .09 cfs on the license. The rate of .14 cfs calculated at the field exam is the system capacity. The measured rate of .14 cfs is .05 cfs or 22.4 gallons more than the authorized .09 diversion rate. The historic Grand View Mutual Canal Company agreement upholds a diversion agreement of 1 inch/acre (.02cfs) and an additional 1/2 inch/acre (.01cfs) for evaporation and ditch losses. The 3 acres irrigated at a rate of .02 cfs/acre combined with the additional .01 cfs/acre for losses equates to .09 cfs. (3 acres X .02cfs = .06 cfs + 3 acres X .01cfs = .03 cfs = total of .09 cfs)

F. VOLUME CALCULATIONS

1. Volume Calculations for irrigation: N/A

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

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

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

Per Idaho Administrative Code (IDAPA) 3703.02, Rule 35, Irrigation using natural stream flow diverted from a stream is exempt from the volume reporting requirement.

2. Volume Calculations for Other Uses: N/A.

G. NARRATIVE/REMARKS/COMMENTSHistory:

This permit was established to take the place of historic use authorized under right 57-7072. Water under right 57-7072 was originally diverted by Don and Vada Alley when they applied for permit under application number 55-7006 in 1969. The application was turned into permit number 57-7072. It is unclear why the application number did not carry over to the permit number. The original application number was likely not given the correct basin number when it was received by the Department. Therefore, the application number was renumbered in Basin 57 for the permit. In the end, right 57-7072 was licensed in 1974 for Don and Vada Alley. Right 57-7072 authorized the diversion of water from Shoofly Creek into the Grandview Mutual Canal (GVMC) and conveyed it to the real property at the place of use (POU). The Alley's had an agreement with GVMC Company to carry water in their canal to the POU. The right was licensed to divert .14 cfs but limited to a diversion rate of .06 cfs. The diverting works listed on the field report were a concrete diversion dam directly from

Shoofly Creek into the GVMC. A standard weir was installed as a measuring device at this point of diversion (POD) where Shoofly Creek flows into the canal. Right 57-7072 was unclaimed in the Snake River Basin Adjudication (SRBA) in 2001. The following is a brief timeline of events as to why right 57-7072 was not claimed in the SRBA. Buster and Jean McGhee bought the property at the POU in 1989. When the property was sold, the change in ownership of right 57-7072 did not occur and it remained under the name of Don and Vada Alley. Notices from the Department or the SRBA were subsequently sent to the Alley's not the McGhee's. Additionally, the McGhee's do not recall receiving any notices from IDWR or the SRBA relating to right 57-7072.

The real property at the POU continued to be irrigated by water diverted from the GVMC and the McGhee's believed they were using irrigation shares from canal. This water diverted did not originate from shares of the canal water but rather from Shoofly Creek with a carriage agreement between the Alley's and the GVMC Company pertinent to right 57-7072. This agreement between GVMC Company and the Alley's was established in 1970.

In 2013, the canal company informed the McGhee's that water would no longer be conveyed in the canal under right 57-7072 and diversion was no longer authorized. The McGhee's had been diverting water for nearly 25 years and without a water right, they tried to reestablish right 57-7072. However, the courts denied the request.

Right 57-11908 was established for the same use and has the same legal description for the POU and POD as right 57-7072. Furthermore, the GVMC Company honored the original agreement from 1970 allowing Ms. McGhee to convey water from Shoofly Creek through the canal to the POU. The Canal Co. recommended diversion through their canal of one inch per acre for irrigation and an additional half inch per acre for evaporation and ditch losses. Mr. Simper, who accompanied us on the field exam explained that GVMC Company charges the McGee's for 3 shares for the conveyance of Shoofly Creek water to the POU.

Water from this permit is diverted from Shoofly Creek by a concrete weir. The weir structure has 3 outlets. The first outlet, on the leftmost side, diverts water over a 2 foot wide opening into a small ditch. This ditch connects to the GVMC and transports Shoofly Creek water to the POU. At the time of the field exam, the corresponding staff gage at this outlet read .45. Referencing the University of Idaho Measurement Manual, it was determined that flow over this part of the weir was 1.94 cfs. The middle diversion channel of the weir structure allows water to flow as a continuation of Shoofly Creek. The last and rightmost diversion channel in the weir feeds water to a small area where a pump is located. The pump supplies water to various other rights. After the pump, the water flows out the last channel and reconnects with the middle channel (Shoofly Creek).

Shoofly Creek water flows approximately 2.5 miles in the GVMC before it reaches the POU. A headgate and concrete structure allow water to flow from the GVMC approximately 20 feet to a 5 Hp pump. A 3" line runs from the pump a short distance to a flow meter/regulator. With the pump on, we tracked the flow on the meter by timing the gallons per minute flowing through the line. The flow in gallons per minute indicated on the meter was somewhat slow for the 5 Hp pump. Mr. Simper indicated that the impeller blades in the pump have been trimmed to allow small debris and moss to flow through the pump to avoid burning it out. Mr. Simper occasionally must clean out the line of moss and debris. Continuing past the meter, the 3" line goes underground and runs up the property where it converges to a 2" near the grassy area behind the home. Water for the remainder of the POU is supplied by buried 2" mainlines with valves to garden hoses. There are various areas watered under this permit including a grassy area behind the home, 2 pasture areas with sprinklers and multiple garden/vegetation areas from garden hoses using gravity to move the water.

An above ground valve is located where the 3" line converges to the 2" line. A garden hose runs from this valve to the grassy area behind the home. The hose connects to a small circular impact sprinkler. The first pasture area on the north end of the property is watered with 22 sprinklers, all with 1/8" nozzles. Mr. Simper indicated that only 16 sprinklers typically irrigate this pasture. Likewise, at the time of the field exam, only 16 were in use. An underground 2" line "T"s off the mainline supplying water to the sprinklers. With a hand held pressure gage, we measured various sprinklers in the pasture, all at 38 psi. The Department sprinkler calculation sheet determined that the sprinklers had a flow rate of 46 gallons per minute (gpm).

Continuing underground past the sprinkler "T", the 2" line supplies water at 2 garden hoses above ground with valves. These hoses irrigate vegetation along the northern edge of the driveway and along the Northern pasture. We used a 5 gallon bucket and stopwatch to determine the flow rates of all garden hoses supplying water to the vegetation. It took an average of 32 seconds to fill the bucket with these 2 garden hoses. Flow was calculated at 9.38 gpm for this location. From there, the 2" line proceeds under the driveway and resurfaces in the large triangular shaped garden area. There are 3 valves total in the large garden area, each connecting to a separate garden hose. Two of the valves are located together. One of these hoses can be moved to supply water to both the northwestern portion of the garden as well as recently planted trees along the driveway. After an average of 65.5 seconds, the 5 gallon bucket was full and the flow was calculated at 4.58 gpm for that hose. The other garden hose took an average of 85.5 seconds to fill the bucket. This hoses supplies the remainder of the garden with water at a rate of 3.51 gpm.

The last valve above ground in the large garden area is connected to a long extended garden hose. The extension hose connects back to a 2" line on the southeastern edge of the large garden area and is buried under the driveway again. It resurfaces on the other side of the driveway with 2 valves. One valve supplies water to a 2" underground line connecting to another set of 16 1/8" nozzle sprinklers. These sprinklers irrigate the second pasture area. The other valve at this location connects to a garden hose and gravity feeds water to a few rows of vegetables.

Overlap:

Municipal water right 57-7059 and municipal water permit 57-11780 overlap the POU. Right 57-7059 is owned by the city of Grand View and is authorized to divert .5 cfs. Permit 57-11780 was filed in 2009 to supplement municipal right 57-7059 to increase the amount pumped from the wells, with an additional diversion of 1.00 cfs. Both the municipal right and permit share the same POU and POD's with one another. Proof of beneficial use for the permit was submitted May 7, 2015. The municipal right and permit convey some water to the home at the POU for right 57-11908. However, no water is used outside of the home for irrigation from the overlapping municipal water permit or right. Therefore it will not influence the overlapping diversion rate and volume calculations.

The POD overlaps with irrigation water right 57-7198. Right 57-7072 and this permit are additive so combined limits are not necessary to address the overlap with right 57-7198 at the weir. Water right 57-7198 is authorized to divert .14 cfs and 31.5 acre-feet for irrigation. The weir structure at the POD has multiple channels to allow diversion for various other water rights.

I am recommending the permit diversion rate of .09 cfs for right 57-11908. The right will be limited to .09 cfs per the maximum rate per acre allowed. .09 cfs is calculated by the standard .02 cfs/acre added with .5 cfs/acre for conveyance losses. For 3 acres, the standard rate would be .06, with the addition of .03 cfs to make up for losses in the canal, the total is .09 cfs.

Conditions:

At the time of licensing, conditions 1 and 2 were removed, as is standard. We kept conditions 3 (R69), 4 (933), 5 (934) and 6 (004) Condition 7 (121) was changed to condition 103 per standards.

Have conditions of permit approval been met? X Yes No

H. RECOMMENDATIONS

1. Recommended Amounts

<u>Beneficial Use</u>	<u>Period of Use</u>	<u>Rate of Diversion</u>	<u>Annual Volume</u>
IRRIGATION	03/01 to 11/15	0.09 CFS	N/A

Totals: 0.09 CFS

2. Recommended Amendments

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

 Change P.U. as reflected above Add P.U. as reflected above X None

I. AUTHENTICATION Alex Dalglish - Water Resource Agent

Field Examiner's Name Alex Dalglish Date 9/3/19

Reviewer Dan A. Aitch Date 9-3-19

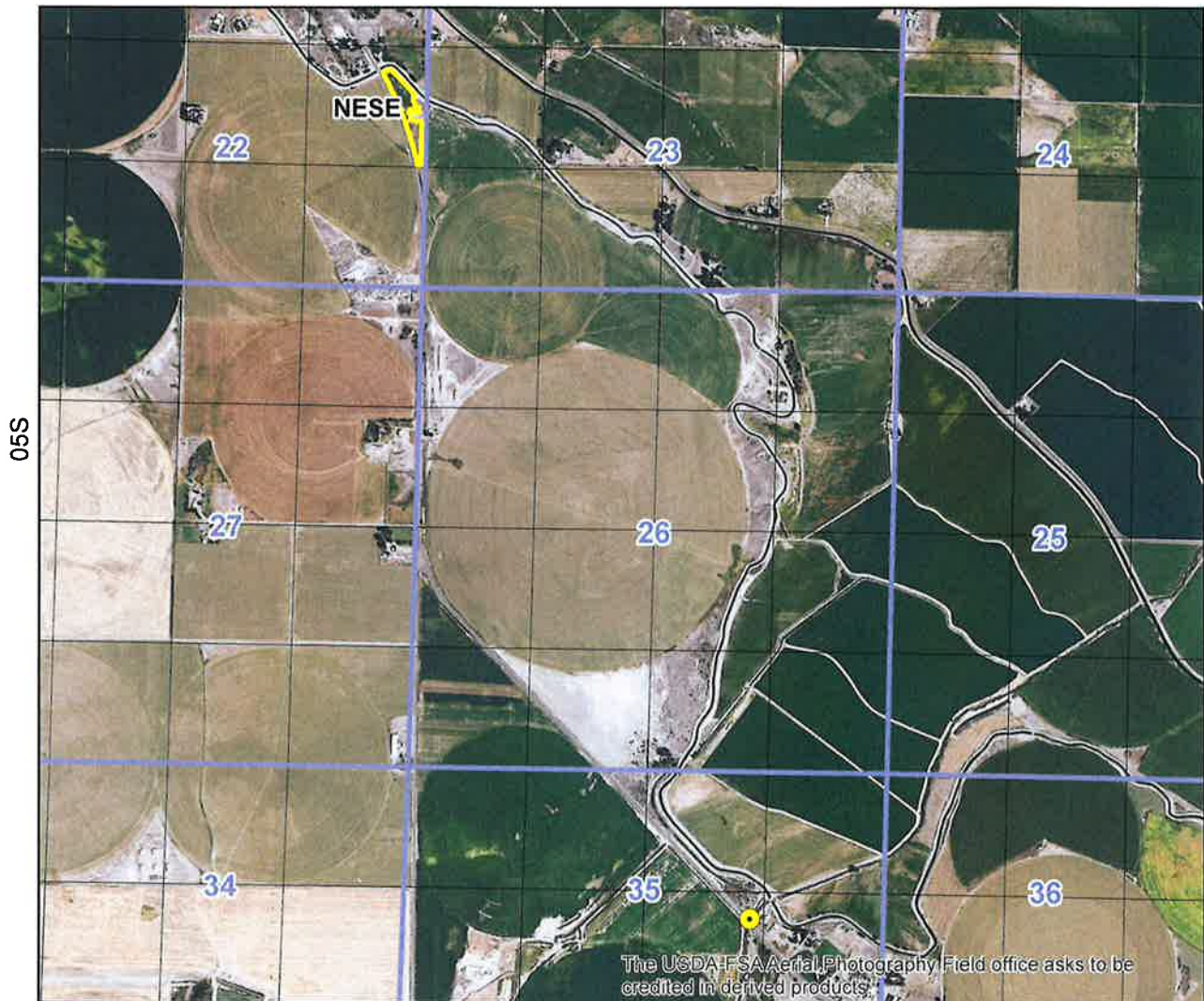
State of Idaho
Department of Water Resources

Field Exam

57-11908

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.

03E

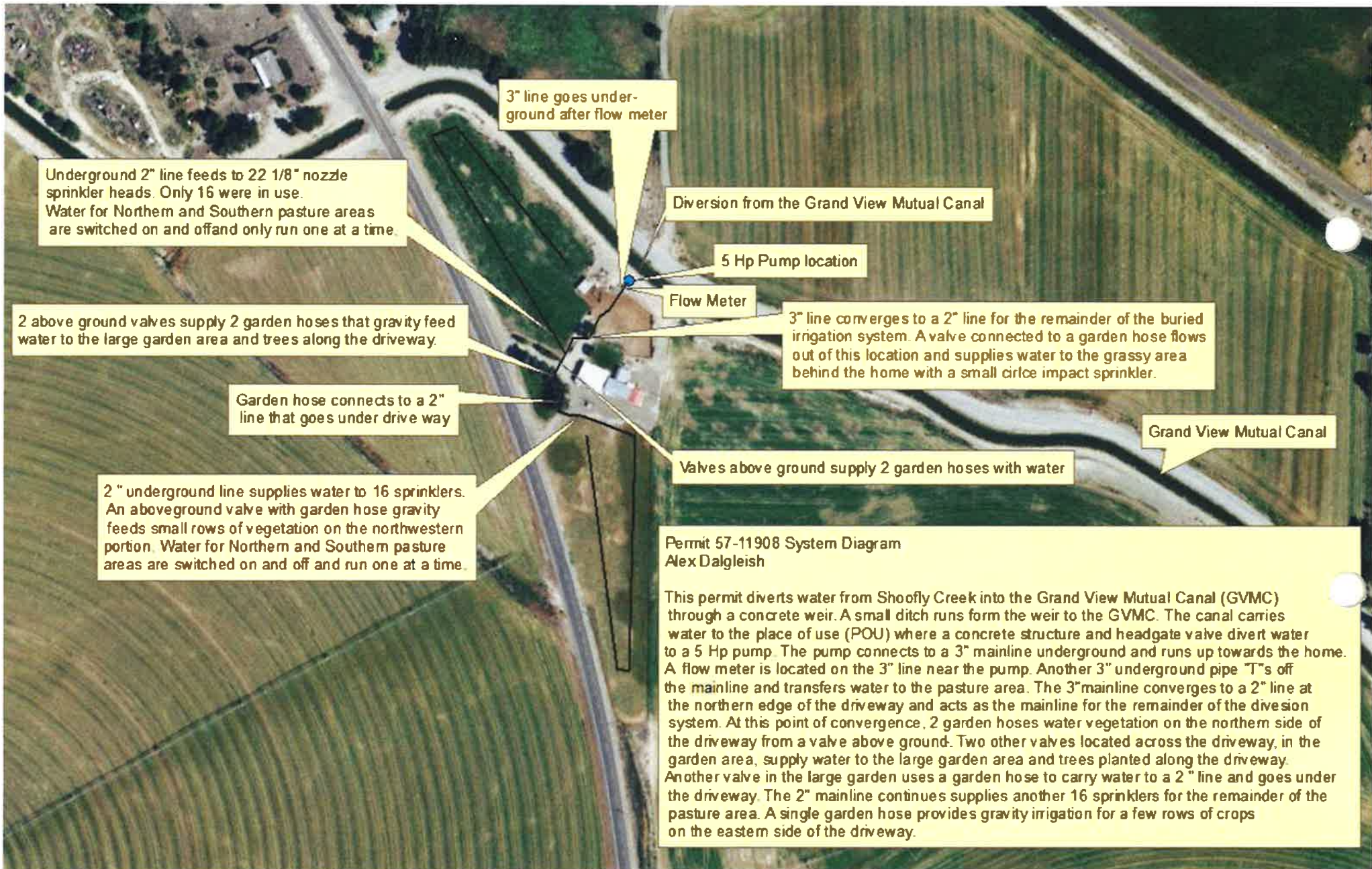


-  Point of Diversion
-  Place Of Use Boundary
-  Townships
-  PLS Sections
-  Quarter Quarters

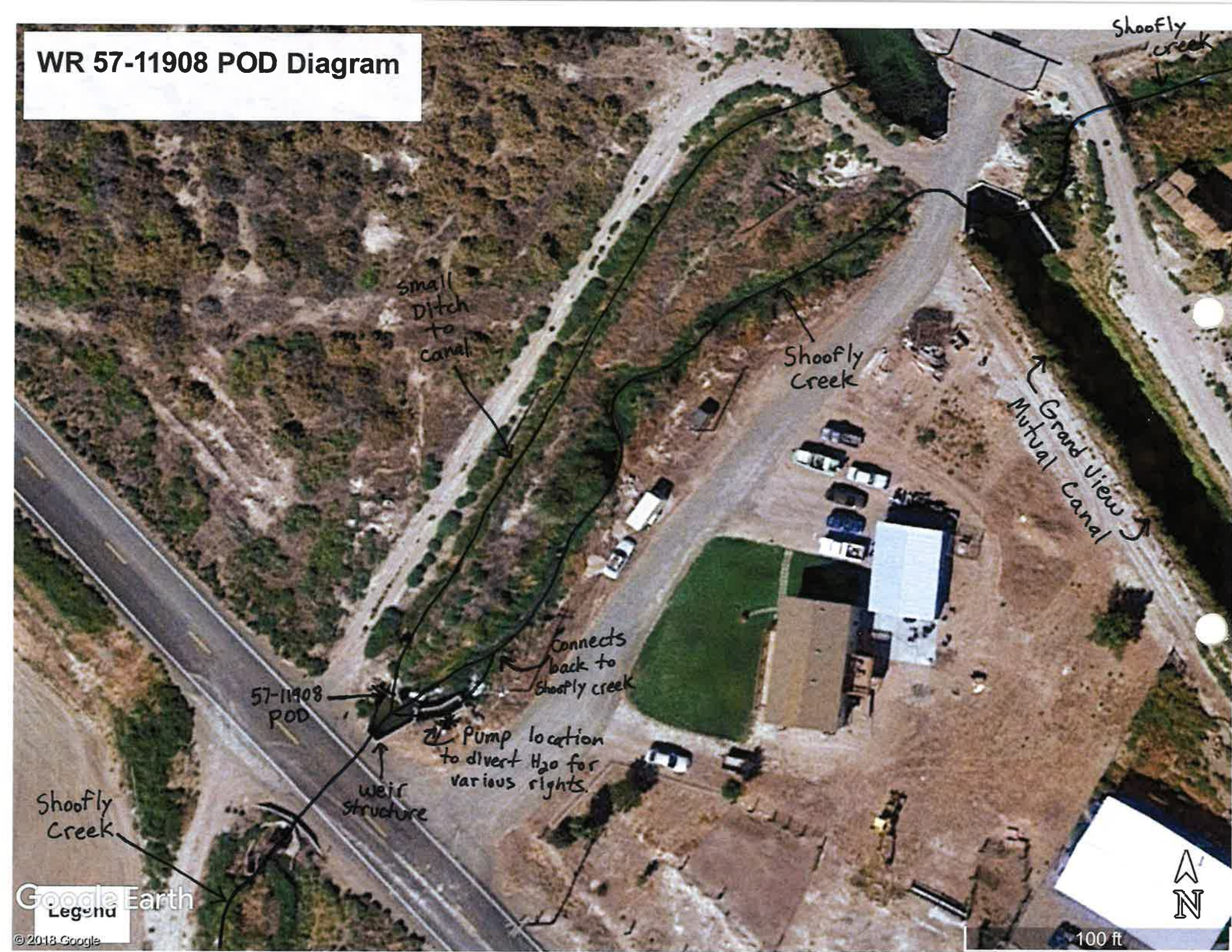
0 0.25 0.5 1 Miles



System Diagram for Permit 57-11908 A. Dalglish



WR 57-11908 POD Diagram



Sprinkler Nozzle Flow Rate Calculator

[READ ME](#)

Step 1 - Specify 1st Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

38

psi

Input Nozzle Diameter:

0.1250

in

Input Number of Type 1 Sprinkler Nozzles:

16

Step 2 - Specify 2nd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

psi

Input Nozzle Diameter:

in

Input Number of Type 2 Sprinkler Nozzles:

Step 3 - Specify 3rd Nozzle Type Configuration

Select Sprinkler Coefficient, C

☐ User Defined ☒ Theoretical Maximum

Input Nozzle Pressure:

psi

Input Nozzle Diameter:

in

Input Number of Type 3 Sprinkler Nozzles:

Flow Rate Summary

Type 1 Nozzle(s): 46.002

Type 2 Nozzle(s): 0.000

Type 3 Nozzle(s): 0.000

Combined: 46.002

gpm

Permit # 57-11908

By Alex Dalglish on 6/28/2019

Site	Time 1	Time 2	Average Time	Volume	Gallons Per Minute
Tree Site by Pasture	32	32	32	5	9.38
Tree Site by Garden	66	65	65.5	5	4.58
Garden Site	86	85	85.5	5	3.51

Total Time Fill = 17.46

Total From Sprinklers (See Attached Spreadsheet= 46 gpm

Total System Capacity = 63 gpm

Total System Capacity = 0.14 cfs

Total Acres	Rate per Acre	Total Allowable CFS
3	0.03	0.09

Limit Permit to 0.09 cfs per maximum rate per acre.

PHOTOGRAPHER AND DATE OF PHOTOS: ALEX DALGLEISH 6/28/19

FILE NUMBER: 57-11908



The above photos show the weir structure diverting water from Shoofly Creek. Note the small culvert on the left leading to the ditch. This is the POD for right 57-11908 as well as right 57-7198. The opening in the middle of the weir allows Shoofly Creek water to pass through. The right channel allows water to supply a pump for various rights with POD's from Shoofly Creek.



The above photos show the location where water is pumped from the Grand View Mutual Canal (GVMC) at the place of use. Left photo shows the 5 Hp pump.

PHOTOGRAPHER AND DATE OF PHOTOS: ALEX DALGLEISH 6/28/19

FILE NUMBER: 57-11908



The above photos show the pump and 3" line leading to the flow meter/regulator. The middle photo shows a close up of the meter. The left photo shows an employee using a wrist watch to track to gallons per minute flowing to the place of use.



The above photos show the 3" line from the pump converge to a 2" mainline and the sprinklers irrigating the Northern pasture area. The most left photo shows a garden hose that feeds water to a small sprinkler to irrigate the grassy area behind the home. The middle and right photos show sprinklers irrigating the pasture area on the Northern side of the property.



PHOTOGRAPHER AND DATE OF PHOTOS: ALEX DALGLEISH 6/28/19

FILE NUMBER: 57-11908

The photos above show the areas outside of the northern pasture that are watered by garden hoses. The pasture area is located to the left in the center photo.



The above photos show where the line resurfaces above ground to supply 2 garden hoses. The line goes back under the driveway. The center and right photos show the line come up in the large garden area.



The above photos show the irrigation for the southern pasture area and remaining garden/vegetation area next to the cow. Middle photo shows 2" line that goes under driveway and resurfaces with a garden hose in the most right photo. The 2" line feeds 16 sprinklers in the pasture area and the garden hose supplies for the rest of the garden.