

**FUTURE FISHERIES IMPROVEMENT PROGRAM
GRANT APPLICATION**

(please fill in the highlighted areas)

I. APPLICANT INFORMATIONA. Applicant Name: Big Blackfoot Chapter of Trout UnlimitedB. Mailing Address: PO Box 1C. City: Ovando State: MT Zip: 59854Telephone: 406-240-4824 E-mail: ryen@montanatu.orgD. Contact Person: Ryen NeudeckerAddress if different from Applicant: City: State: Zip: Telephone: E-mail: E. Landowner and/or Lessee Name (if other than Applicant): Steve & Sue GraveleyMailing Address: PO Box 68City: Helmville State: MT Zip: 59843Telephone: 406.793.0006 E-mail: **II. PROJECT INFORMATION***A. Project Name: Devil's Dip Spring Creek Restoration ProjectRiver, stream, or lake: Devil's Dip Spring CreekLocation: Township: 13N Range: 11W Section: 11Latitude: 46.89943 Longitude: 112.95439 *within project (decimal degrees)*County: Powell

B. Purpose of Project:

The overall goal of the Devil's Dip Spring Creek Restoration project is to restore an impacted spring creek, reconnect with Nevada Spring Creek and provide uninhibited fish passage through the restored reach.

C. Brief Project Description:

Devil's Dip Spring Creek is a small, first-order tributary Nevada Spring Creek which is a tributary to Nevada Creek near Helmville, MT. The entire length of Nevada Spring Creek has been restored and the system has responded with improved spawning and rearing habitat and decreased water temperatures. Native westslope cutthroat trout now occupy the system and populations are increasing every year. Westslope cutthroat trout are now also being recruited into Nevada Creek and for the first time in decades, this reach of Nevada Creek is supporting native trout. Appendix A includes a general vicinity map and project area map.

Currently, Devil's Dip Spring Creek is in a degraded condition and is impacted by an existing road prism, instream pond, isolation from Nevada Spring Creek, fish passage restrictions and channel manipulations. The overall goal of the Devil's Dip Spring Creek project is to restore a stable stream system and to keep both the restored spring creek and adjacent wetlands isolated from each other. Both systems will benefit as the wetlands will remain warm and spring creek temperatures cool. This will benefit westslope cutthroat trout populations within Devil's Dip Spring Creek and Nevada Spring Creek as well as many wetland obligate species as the wetlands will no longer be impacted by an unnatural source of cool water. Both systems will be allowed to naturally function and as they did historically.

Through the restoration of Devil's Dip Spring Creek, we are seeking to restore the stream channel system to a more natural dimension, pattern and profile with the habitat diversity necessary to support a self-sustaining high quality trout fishery. The elimination of impacts to Devil's Dip Spring Creek will reduce water temperatures which will then transfer that cold, clean water to Nevada Spring Creek. The project would restore the stream channel utilizing natural channel design bank and in-stream techniques and treatments. The restored channel system would be self-maintaining in terms of maintaining channel integrity, and sediment transport. Native riparian vegetation including sedges, shrubs and trees would be established along constructed stream banks.

D. Length of stream or size of lake that will be treated: By restoring the entire length of Devil's Dip Spring Creek (1,500 ft) we expect to benefit over four miles of Nevada Spring Creek.

E. Project Budget:

Grant Request (Dollars): \$ 8,500

Contribution by Applicant (Dollars): \$ 3,235 In-kind \$ 3,150
 (salaries of government employees are not considered as matching contributions)

Contribution from other Sources (Dollars): \$ 10,000 In-kind \$ 5,425
 (attach verification - See page 2 budget template)

Total Project Cost: \$ 30,310.00

F. Attach itemized (line item) budget – see template

- G. Attach specific project plans, detailed sketches, plan views, photographs, maps, evidence of landowner consent, evidence of public support, and/or other information necessary to evaluate the merits of the project. If project involves water leasing or water salvage complete supplemental questionnaire (fwp.mt.gov/habitat/futurefisheries/supplement2.doc).
- H. Attach land management and maintenance plans that will ensure protection of the reclaimed area.

III. PROJECT BENEFITS*

A. What species of fish will benefit from this project?:

Westslope cutthroat trout are what we anticipate to use the restored spring creek.

B. How will the project protect or enhance wild fish habitat?:

This project will restore and reconnect a spring creek channel that has been channelized and isolated from Nevada Spring Creek. Cold, clean water and proper dimensions should provide the ideal habitat conditions necessary to support native trout.

C. Will the project improve fish populations and/or fishing? To what extent?:

Yes. This project seeks to eliminate limiting factors affecting wild trout movement and recruitment.

D. Will the project increase public fishing opportunity for wild fish and, if so, how?:

Yes, by increasing wild trout recruitment and access to spawning habitat in the Nevada Spring Creek drainage.

E. If the project requires maintenance, what is your time commitment to this project?:

The landowner has agreed to sign a 20-year agreement.

F. What was the cause of habitat degradation in the area of this project and how will the project correct the cause?:

Channel impacts and isolation from the downstream tributary will be corrected by implementing this project.

G. What public benefits will be realized from this project?:

This project involves the continuation of the partnership driven Blackfoot Restoration program and will benefit a MT Species of Special Concern. In addition to improving instream habitat conditions, fish survival and migration, this project is very visible and will complement the downstream efforts leading to an increase in recruitment and water quality improvement.

H. Will the project interfere with water or property rights of adjacent landowners? (explain):

No.

I. Will the project result in the development of commercial recreational use on the site?: (explain):

No

J. Is this project associated with the reclamation of past mining activity?:

No

Each approved project sponsor must enter into a written agreement with the Department specifying terms and duration of the project.

IV. AUTHORIZING STATEMENT

I (we) hereby declare that the information and all statements to this application are true, complete, and accurate to the best of my (our) knowledge and that the project or activity complies with rules of the Future Fisheries Improvement Program.

Applicant Signature:  Date: 5-26-15

Sponsor (if applicable):

*Highlighted boxes will automatically expand.

**Mail To: Montana Fish, Wildlife & Parks
Habitat Protection Bureau
PO Box 200701
Helena, MT 59620-0701**

**E-mail To: Michelle McGree
mmcgree@mt.gov**

**Incomplete or late applications will be returned to applicant.
Applications may be rejected if this form is modified.**

*****Applications may be submitted at anytime, but must be received by the Future Fisheries Program office in Helena before December 1 and June 1 of each year to be considered for the subsequent funding period.*****

BUDGET TEMPLATE SHEET FOR FUTURE FISHERIES PROGRAM APPLICATIONS

| WORK ITEMS (ITEMIZE BY CATEGORY) | NUMBER OF UNITS | UNIT DESCRIPTION* | COST/UNIT | TOTAL COST | CONTRIBUTIONS | | | |
|--|--------------------|----------------------|------------|--------------|-----------------------------|------------------|--------------|--------------|
| | | | | | FUTURE FISHERIES REQUEST | IN-KIND SERVICES | IN-KIND CASH | TOTAL |
| Personnel | | | | | | | | |
| Survey | 12 | hrs | \$80.00 | \$ 960.00 | | | \$ 960.00 | \$ 960.00 |
| Design | 30 | hrs | \$80.00 | \$ 2,400.00 | | | \$ 2,400.00 | \$ 2,400.00 |
| Permitting | 15 | hrs | \$40.00 | \$ 600.00 | | 600.00 | | \$ 600.00 |
| Oversight | 30 | hrs | \$85.00 | \$ 2,550.00 | 500.00 | 550.00 | \$ 1,500.00 | \$ 2,550.00 |
| Labor | 15 | hrs | \$45.00 | \$ 675.00 | 250.00 | | \$ 425.00 | \$ 675.00 |
| | | | Sub-Total | \$ 7,185.00 | \$ 750.00 | \$ 1,150.00 | \$ 5,285.00 | \$ 7,185.00 |
| Travel | | | | | | | | |
| Mileage | | | | \$ - | | | | \$ - |
| Per diem | | | | \$ - | | | | \$ - |
| | | | Sub-Total | \$ - | \$ - | \$ - | \$ - | \$ - |
| Construction Materials | | | | | | | | |
| Sod mats | 1000 | LF | \$2.00 | \$ 2,000.00 | | 2,000.00 | | \$ 2,000.00 |
| Squash Pipe | 1 | each | \$2,000.00 | \$ 3,000.00 | 1,500.00 | | 1,500.00 | \$ 3,000.00 |
| Gravel | 20 | CY | \$40.00 | \$ 800.00 | | 800.00 | | \$ 800.00 |
| Willow cuttings | 3000 | each | \$1.00 | \$ 3,000.00 | 1,000.00 | 2,000.00 | | \$ 3,000.00 |
| Fence | 3500 | LF | \$0.75 | \$ 2,625.00 | | 2,625.00 | | \$ 2,625.00 |
| Agri-Drain | 1 | each | \$500.00 | \$500 | | | 500.00 | \$ 500.00 |
| | | | Sub-Total | \$ 11,925.00 | \$ 2,500.00 | \$ 7,425.00 | \$ 2,000.00 | \$ 11,925.00 |
| Equipment | | | | | | | | |
| Hydraulic Excavator | 55 | hours | \$120.00 | \$ 6,600.00 | 3,000.00 | | 3,600.00 | \$ 6,600.00 |
| Track Truck | 20 | hours | \$120.00 | \$ 2,400.00 | 1,000.00 | | 1,400.00 | \$ 2,400.00 |
| Skid Steer | 20 | hours | \$85.00 | \$ 1,700.00 | 1,000.00 | | 700.00 | \$ 1,700.00 |
| | | | Sub-Total | \$ 10,700.00 | \$ 5,000.00 | \$ - | \$ 5,700.00 | \$ 10,700.00 |
| Mobilization | | | | | | | | |
| Equipment | 1 | lump sum | \$500.00 | \$ 500.00 | 250.00 | | 250.00 | \$ 500.00 |
| | | | Sub-Total | \$ 500.00 | \$ 250.00 | \$ - | \$ 250.00 | \$ 500.00 |
| TOTALS | | | | \$ 30,310.00 | \$ 8,500.00 | \$ 8,575.00 | \$ 13,235.00 | \$ 30,310.00 |

*Units = feet, hours, inches, lump sum, etc.

MATCHING CONTRIBUTIONS

| CONTRIBUTOR | IN-KIND SERVICE | IN-KIND CASH | TOTAL | Verified? (Y/N) |
|--|-----------------|--------------|--------------|-----------------|
| Landowner | \$ 5,425.00 | | \$ 5,425.00 | Yes |
| USFWS | \$ - | \$ 10,000.00 | \$ 10,000.00 | Yes |
| Big Blackfoot Chapter of Trout Unlimited | \$ 3,150.00 | \$ 3,235.00 | \$ 6,385.00 | Yes |

Devil's Dip Spring Creek Restoration and Habitat Enhancement



Prepared by:



With Design Assistance from



Devil's Dip Spring Creek Restoration and Habitat Enhancement

Background & Overview

Devil's Dip Spring Creek is a small, first-order tributary to Nevada Spring Creek which is tributary to Nevada Creek near Helmville, MT. The entire length of Nevada Spring Creek has been restored and the system has responded with improved spawning and rearing habitat and decreased water temperatures. Native westslope cutthroat trout now occupy the system and populations are increasing. Westslope cutthroat trout are now also being recruited into Nevada Creek and for the first time in decades, this reach of Nevada Creek is supporting native trout. Appendix A includes a general vicinity map and project area map.

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Existing Condition

Devil's Dip Spring Creek is a spring creek that emerges west of highway 141 and historically connected with Nevada Spring Creek. Restoration of the Devil's Dip will complement a restoration effort on Nevada Spring Creek that began in 2002. Based on field survey data and observations, it is evident that Devil's Dip Spring Creek has been impacted by an existing road prism which has turned the upper reaches of the spring creek into a pond, restricted fish passage and created temperature and sediment impacts. Below the road prism, Devil's Dip Spring Creek is confined to a narrow corridor and is then routed into a wetland system which bypasses Nevada Spring Creek. Devil's Dip Spring Creek in its current condition is approximately 600 ft. in length and ranges from a simple riffle channel to backwater slough. The stream originates in

several springs upstream from the historical highway grade and is captured in a small pond formed by the historical road grade fill. The channel exits the pond through a water control structure (Agri-Drain) that is a fish barrier. In addition, the entire area is open to grazing. Downstream from the pond, the existing stream is primarily a riffle with a gradient ranging from 0.014 ft/ft to zero with bed materials ranging from silt to small cobble. Little or no shrub vegetation exists. The existing channel and pond lack habitat, depth and diversity. The pond probably also increases water temperatures.



Photograph 1 shows the source of Devil's Dip Spring and the in-stream pond. The water control structure (Agri-Drain) is shown in the foreground. The proposed stream alignment will be along the right side of the pond from this view.



Photograph 2 shows the current channel downstream from the pond. The channel has been straightened and deepened to dewater the area downstream of the pond. The stream ends in a backwater slough. The proposed stream alignment would be on the vegetated bench to the left of the existing stream.

Project Objectives

1. Restore Devil's Dip spring creek to the appropriate dimensions, pattern and profile utilizing natural channel design bank and in-stream techniques and treatments
2. Utilize existing valley gradient to recreate a C-type spawning stream with suitable substrate where appropriate
3. Isolate Devil's Dip Spring Creek from the adjacent pond creating habitat and temperature limitations
4. Allow for unlimited aquatic organism passage by replacing the road prism water control structure with an appropriately sized culvert.
5. Reconnect Devil's Dip Spring Creek with Nevada Spring Creek
6. Isolate spring creek water from wetlands and allow wetland to function as they did historically before being impacted by colder water temperatures.
7. Implement a grazing management system to protect the riparian area

Proposed Restoration Treatments

Devil's Dip Spring Creek is proposed to be restored to a C4 channel type in its upper reaches, transitioning to an E4 channel type (Rosgen, 1996). C4 channel types are typically characterized as point-bar, riffle/pool systems with broad, well-defined floodplains. E4 channel types are typically characterized as riffle-pool streams that are low gradient and highly sinuous, with low width to depth ratios and flanked by a floodplain accessible during high flows. There will be a short section of B type channel through the existing road prism in an existing steeper section. This short reach is less than 200 feet long and will feature a step pool morphology. Due to the historic road prism acting as a dam for the last 100 plus years and the confinement of Devil's Dip Spring Creek below the road, both of these stream types are currently lacking.

Based on the initial channel survey, channel and bank restoration treatments would include:

- Isolating the spring creek from the existing in-stream pond
- Reconnecting Devil's Dip to its historic floodplain
- Increasing channel sinuosity to provide additional channel habitat diversity
- Converting the stream to a more typical riffle/pool sequence
- Improving habitat diversity including spawning where gradient is appropriate and complex cover in pool habitats
- Re-establishing bank margins, constructed banks and floodplain with native riparian vegetation
- Removing the water control structure in existing road prism and upgrading with an appropriately sized culvert that will allow fish passage.
- Isolating the stream from adjacent wetlands at the downstream end of the channel by installing an Agri-Drain structure to allow up-valley wetlands water to pass under the stream and into the adjacent down-valley wetlands.

The proposed channel in the upper reaches will utilize riparian sod over gravel base to build stream banks. As we transition downstream from the new stream crossing, a small channel will be constructed following an appropriate meander pattern, sinuosity and riffle-pool sequence. Long, deep pools would be constructed along the outside bend of meanders. At the terminus of the pool the channel bed would ascend forming the pool tailout. A steeper riffle and run downstream from the tailout crest would transition into the pool at the next meander. There would be a net increase in channel length of over 800 feet with the design alignment. The proposed channel alignment, profile and proposed cross sections are illustrated in Appendix A. Small pieces of woody debris (brush and small branches) will be incorporated into banks, specifically outside bends near pools to provide diverse habitat and cover for salmonids. Banks will be finished with riparian sod mats, willow cuttings and transplants. The historic channel of Devil's Dip Spring Creek is proposed to be filled to ensure our new channel is in the low point of the valley. Restoration of the Devil's Dip Spring Creek incorporates a combination of channel modifications, engineering and bioengineering treatments. All treatments are within the natural channel design concept with the objective of restoring channel function while enhancing habitat diversity and quality.

Table 1: Summary of existing and design channel dimensions and pattern

| | Existing Channel | | | Design Channel | | |
|--------------------------|------------------|------------|-----------|-----------------|------------|-----------|
| | Width | Mean Depth | W/D Ratio | Width | Mean Depth | W/D Ratio |
| Riffle mean depth (ft) | 1.5-10' | 0.3-1.0' | 5-50 | 2'-3' | .35-.6' | 4-11 |
| Pool max depth (ft) | none | none | | 3.5-4' | 1.0-1.7' | |
| | Existing | | | Design | | |
| Bankfull Discharge (cfs) | 0.9-1.2 | | | 0.9-1.2 | | |
| Gradient (ft/ft) | 0.0001 to 0.014 | | | 0.0022 to 0.008 | | |
| Sinuosity | <1.1 | | | 1.3-1.5 | | |
| Radius curvature (ft) | n/a | | | 12-15' | | |
| Meander Length (ft) | n/a | | | 35-50' | | |

Vegetation Plan

The establishment of a native plant community is critical to the long-term stability of the channel, habitat quality and sustained fishery. The proposed treatments include the re-vegetation of disturbed areas throughout the project area. Included will be seeding with native grasses and forb species, placing sod mats and shrub transplants on constructed stream banks and incorporating willow cuttings.

Grazing Management

The newly restored spring creek will be treated as an exclusion pasture, meaning that an electric fence will be installed along the channel (buffer of about 25 feet) when livestock are grazing in the area. A stock tank will be installed as shown on the map.

Best Management Practices (BMPs)

Best Management Practices or BMPs will be designed and implemented to minimize the unavoidable on-site and off-site impacts associated with ground disturbing activities. BMPs will be implemented as needed to minimize potential impacts and include localized channel diversions around construction sites, settling ponds, pumping, timing and sequencing of construction activities, etc. A large section of Devil's Dip Spring Creek will be constructed completely "in the dry."

Proposed Project Schedule

Construction is tentatively scheduled to commence in October 2015 and will require approximately two weeks to complete. The final schedule is dependent on several variables including when the necessary permits are issued, mandated construction windows, contractor availability, etc.

| The proposed schedule is as follows: Project Schedule | |
|--|-------------|
| Detailed Channel Survey | Completed |
| Analyze Data and Design | Completed |
| Permit Submittal | Spring 2015 |
| Project Layout and stakeholder review | Summer 2015 |
| Construction | Fall 2015 |

Appendix A

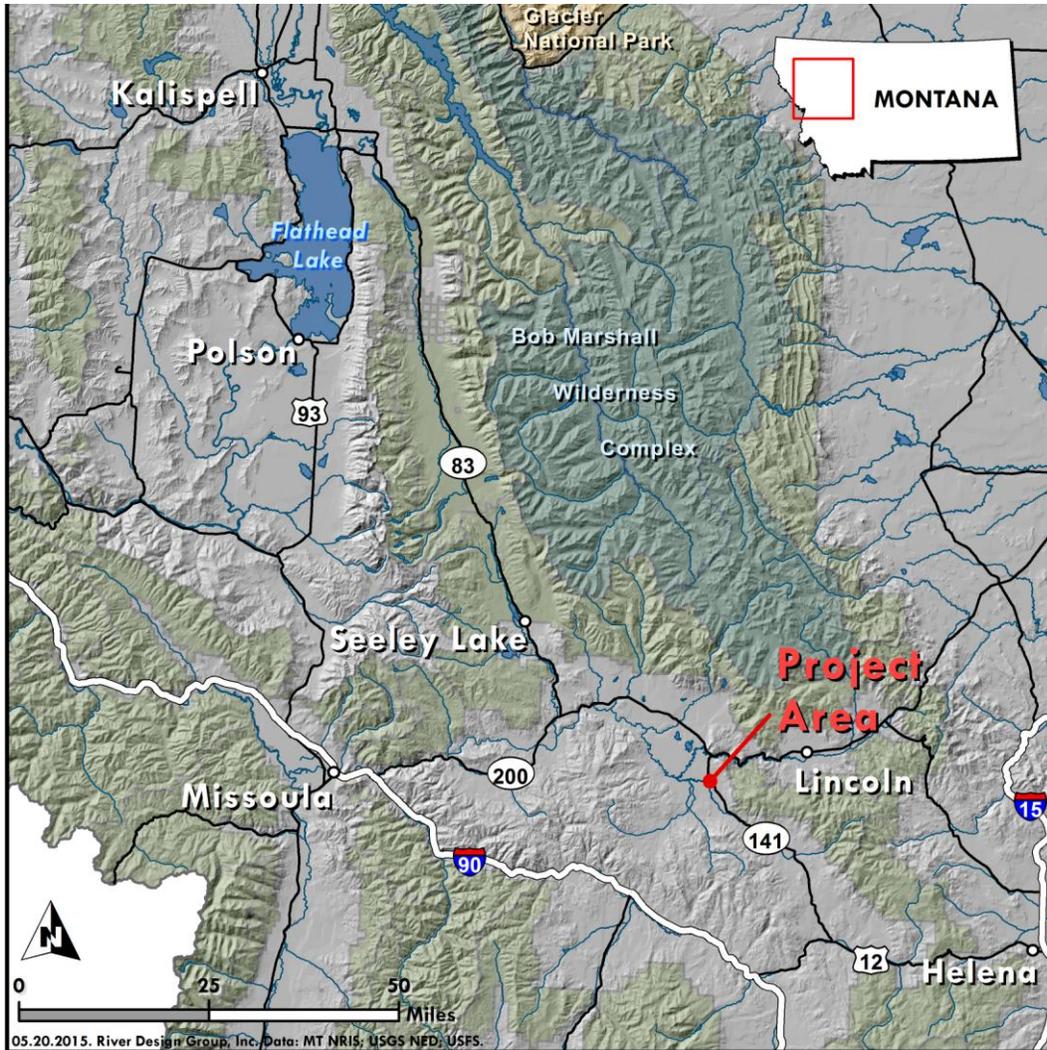
Site Map

Plan View of Project

Longitudinal Profile

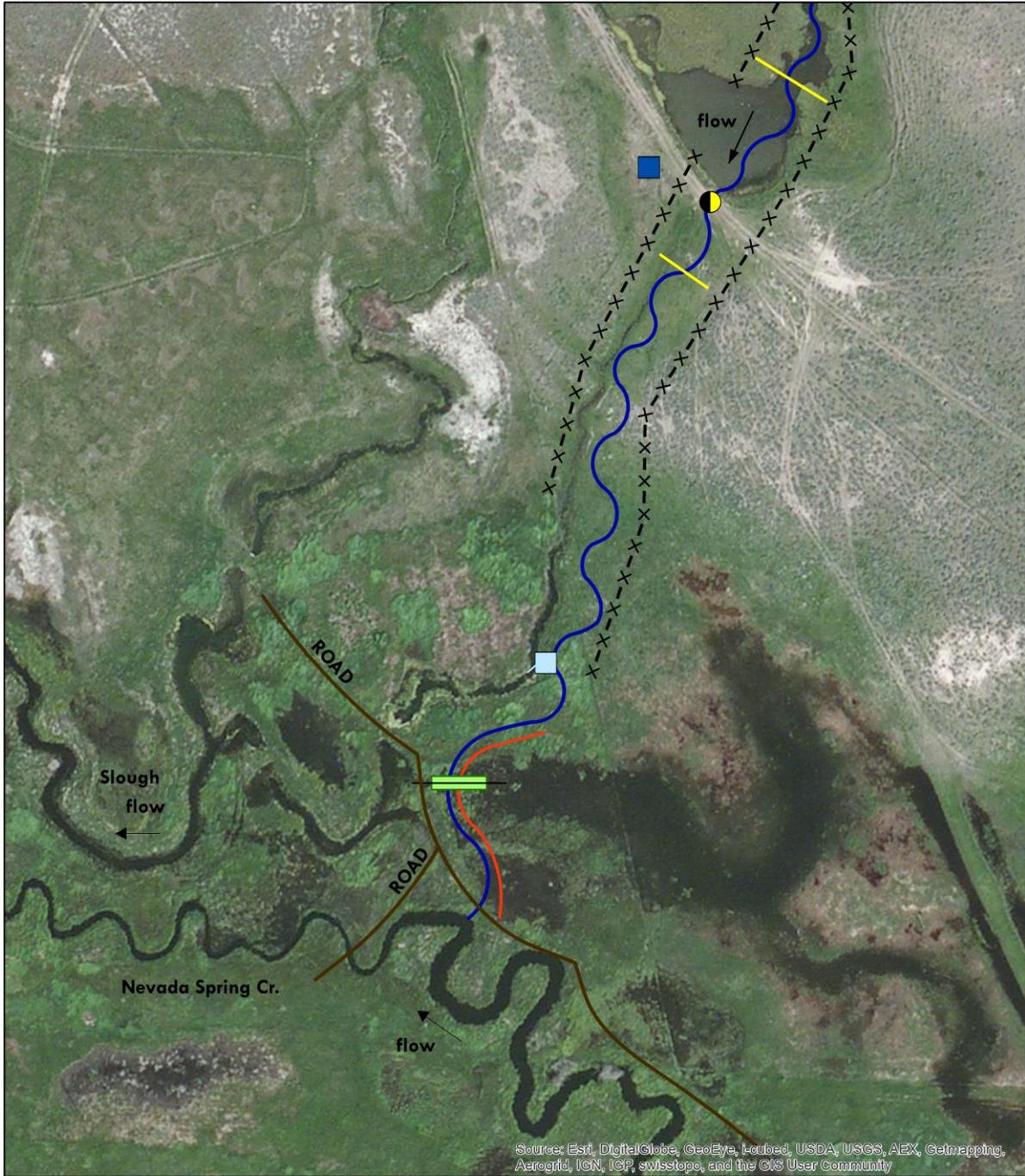
Example Cross Sections

Representative Pebble Count



Project Vicinity Map

From the intersection of MT Highway 200 and MT Hwy 141, travel south approximately 2.8 miles to a ranch road on the right (west) side of the highway. Go thru the gate, project is about 0.15 miles at the bottom of the hill.

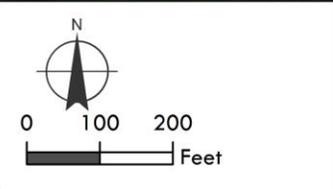


Source: Esri, DigitalGlobe, GeoEye, Earthstar, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

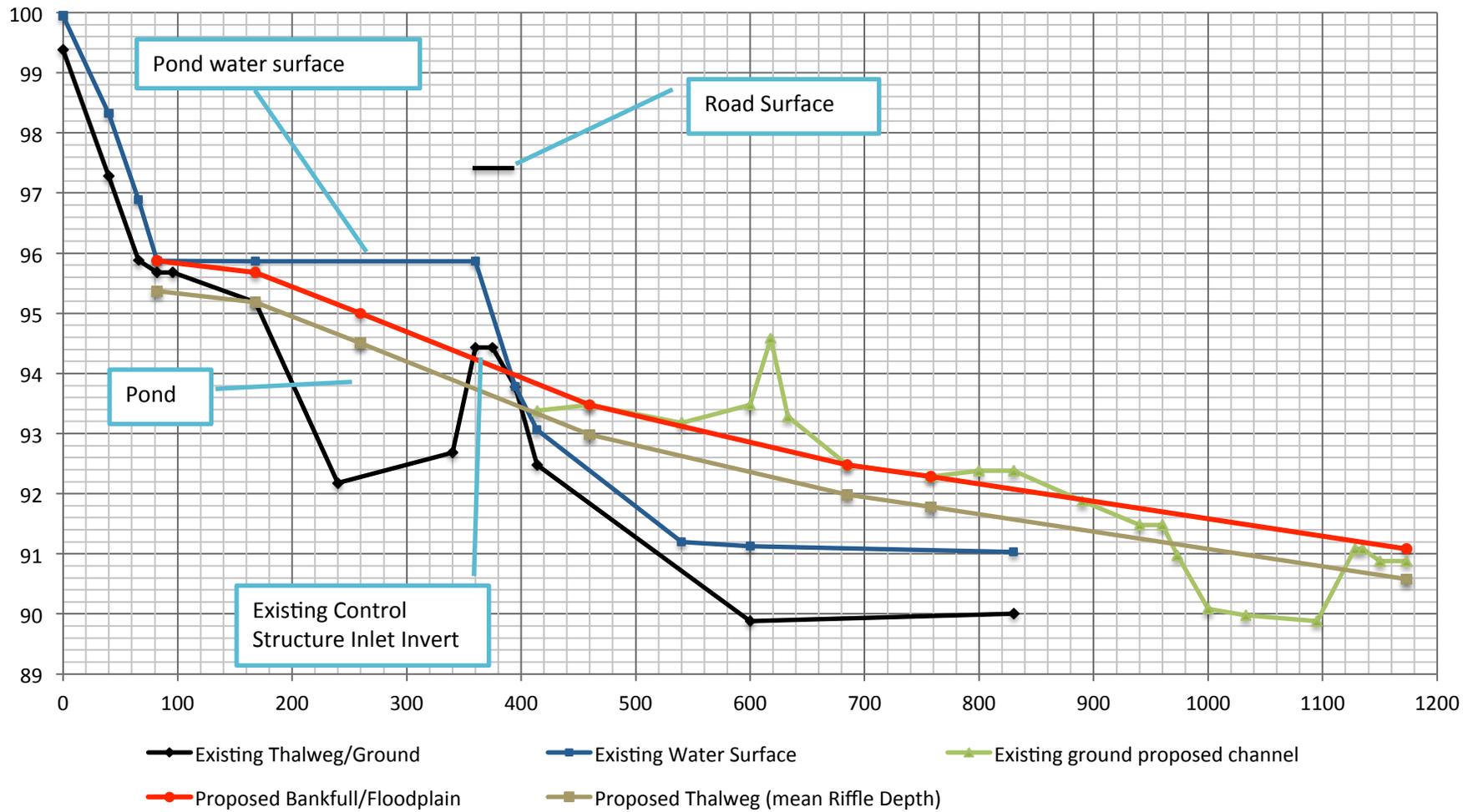
Devils Dip Springs
Conceptual Restoration Design

NOTE: Alignment is conceptual and will be field fit and verified during staking in June 2015.

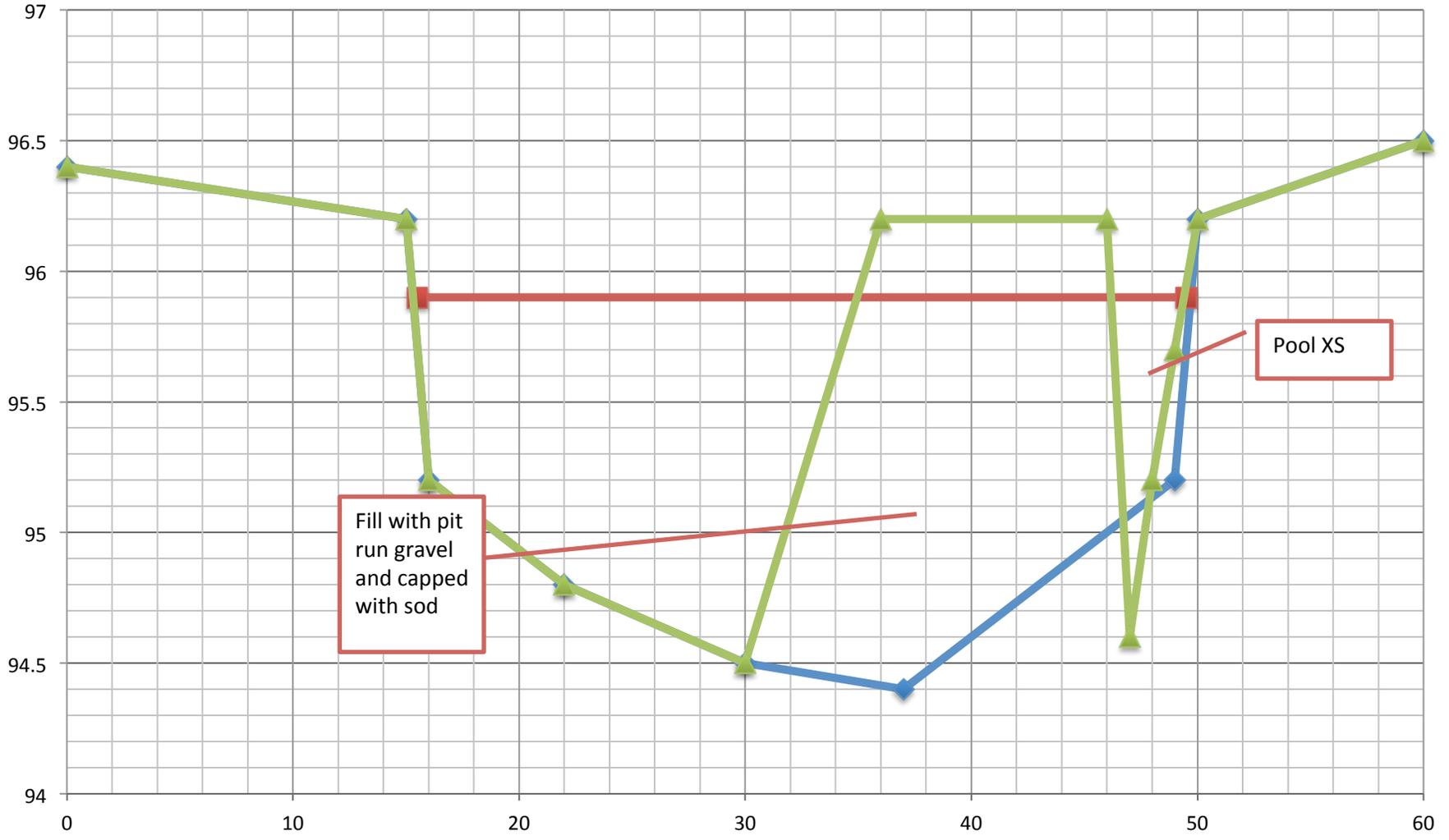
| Features | |
|----------|-----------------------|
| | New Culvert |
| | Diversion - Head Gate |
| | Water Tank |
| | Agri-Drain |
| | Fence |
| | Cross Section |
| | Stream Alignment |
| | Streambank Limits |



Devils Dip Existing and Proposed LP Straight Line Valley Alignment



XS in pond looking upstream

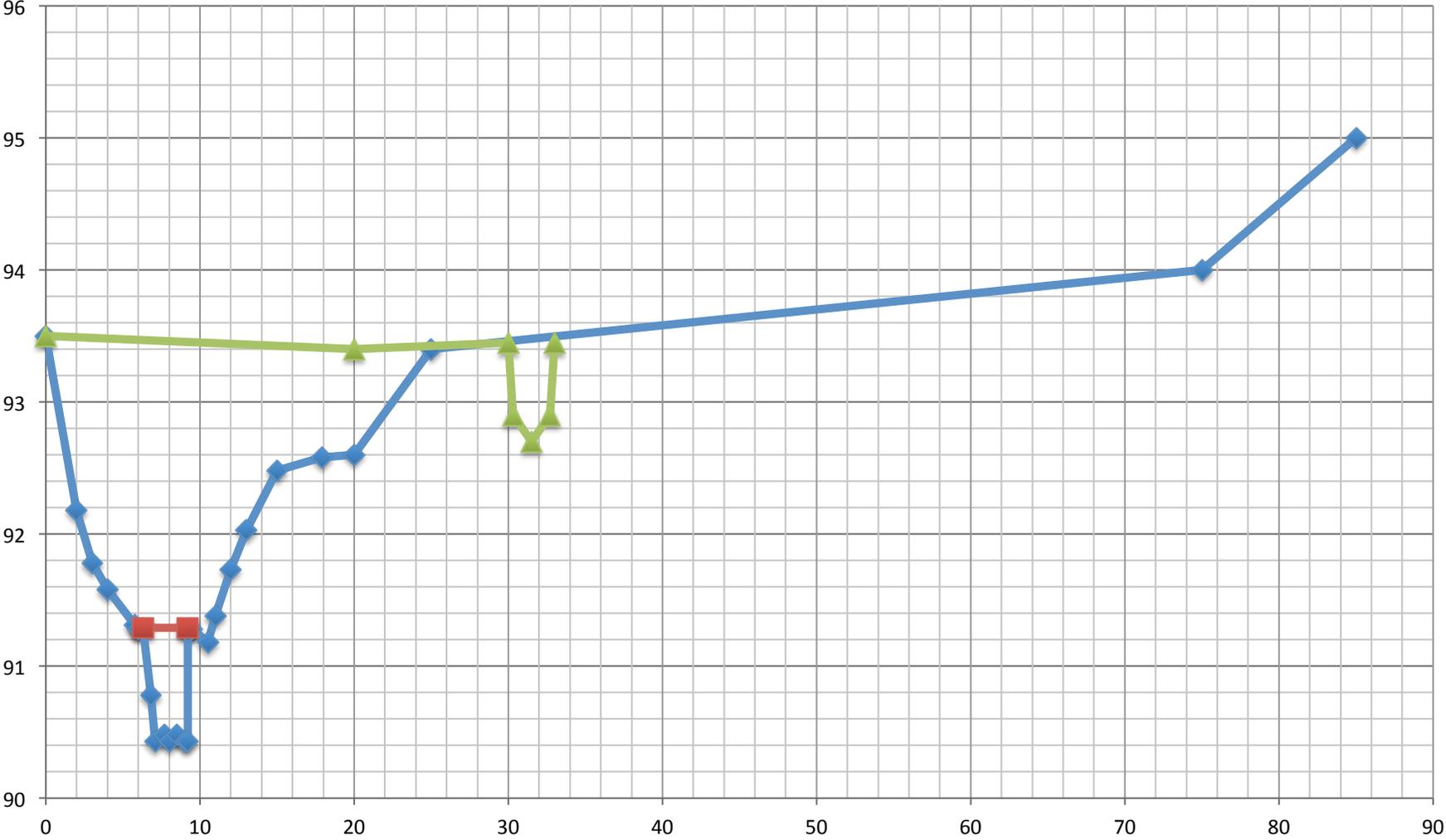


Fill with pit run gravel and capped with sod

Pool XS

Existing Ground Water Surface Proposed Channel

XS Downstream from Pond looking upstream



XS at 475 WS Proposed Channel

Pebble Count Worksheet

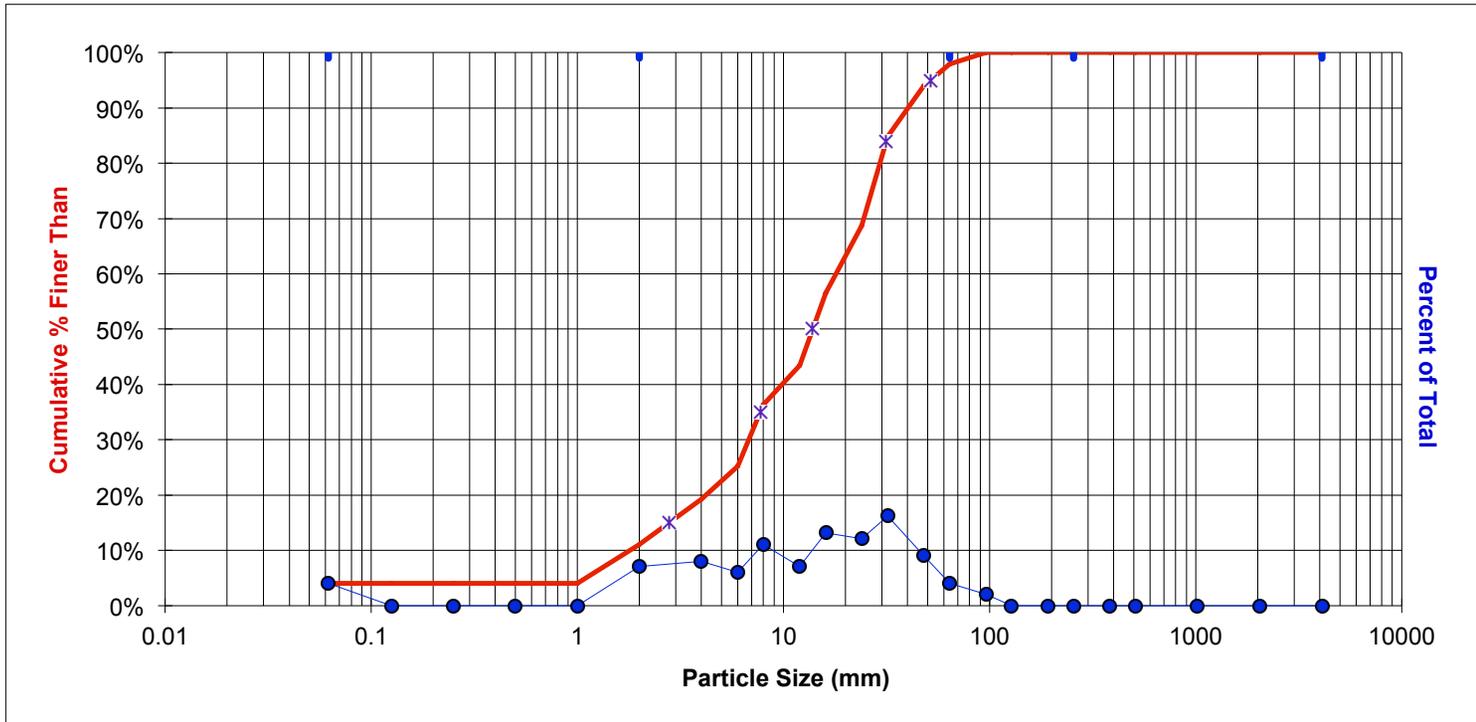
COMMENTS:

| Particle Size (mm) | % finer than | Total Count |
|--------------------|--------------|-------------|
| <0.062 | 4% | 4 |
| 0.062 - 0.125 | 4% | |
| 0.125 - 0.25 | 4% | |
| 0.25 - 0.5 | 4% | |
| 0.5 - 1.0 | 4% | |
| 1 - 2 | 11% | 7 |
| 2 - 4 | 19% | 8 |
| 4 - 6 | 25% | 6 |
| 6 - 8 | 36% | 11 |
| 8 - 12 | 43% | 7 |
| 12 - 16 | 57% | 13 |
| 16 - 24 | 69% | 12 |
| 24 - 32 | 85% | 16 |
| 32 - 48 | 94% | 9 |
| 48 - 64 | 98% | 4 |
| 64 - 96 | 100% | 2 |
| 96 - 128 | 100% | |
| 128 - 192 | 100% | |
| 192 - 256 | 100% | |
| 256 - 384 | 100% | |
| 384 - 512 | 100% | |
| 512 - 1024 | 100% | |
| 1024 - 2048 | 100% | |
| 2048 - 4096 | 100% | |

STREAM NAME: Devils Dip spring Creek
ID NUMBER:
DATE: 7/8/14
CREW:

| Particle Size Distribution (mm) | D15 | D35 | D50 | D84 | D95 |
|---------------------------------|-----|-----|------|------|------|
| | 2.8 | 7.7 | 13.9 | 31.5 | 51.8 |

95





United States Department of the Interior



FISH AND WILDLIFE SERVICE
Montana Partners for Fish & Wildlife
POB 66
Ovando, MT 59854

May 26, 2015

Montana Fish, Wildlife & Parks
Future Fisheries Habitat Improvement Panel
PO Box 200701
Helena, MT 59620-0701

RE: Stonewall Creek and Trail Creek Fish Screening Projects

Dear Future Fisheries Panel Members:

This letter is written in support of the Stonewall Creek, Trail Creek and Devil's Dip Spring Creek applications submitted by the Big Blackfoot Trout Unlimited (BBCTU). These important projects are a collaborative effort between private landowners, BBCTU, Montana Fish, Wildlife & Parks (MFWP), other local supporters and the USFWS Partners for Fish and Wildlife Program.

The proposed projects will complement numerous efforts in the Blackfoot Watershed during the past 28 years which include instream habitat restoration, fish passage projects, road decommissioning, water conservation, intensive fisheries monitoring and fish screening projects. This broad-based community based conservation and restoration effort has resulted in population increases of almost 800% for westslope cutthroat and bull trout in comparison to baseline numbers.

The Partners for Fish and Wildlife has a long history of working with the associated private landowners and other partners collaborating to restore the cold water fishery of the important tributaries feeding the Blackfoot River. The proposed projects on Stonewall Creek, Trail Creek and Devil's Dip Spring Creek are exciting in that we will be able to continue our efforts of restoring native trout within the watershed by working with committed landowners.

I encourage your strong consideration of this proposal to enhance populations of both resident and migratory westslope cutthroat trout populations on three high priority native trout tributaries in the Blackfoot River watershed. Please don't hesitate to contact me if you have questions or need additional information.

Thanks for all your efforts on behalf of native trout.

Sincerely,

Randy Gazda, Assistant State Coordinator