

## Section I: General Information

Project Title Upper Ninemile Creek Mine Reclamation

### Project Sponsor Information

Sponsor Name <u>Trout Unlimited</u>	Tax Identification # <u>38-1612715</u>
County <u>Missoula</u> Website <u>www.tu.org</u>	DUNS # <u>051698132</u>
Primary Contact <u>Rob Roberts</u>	Signatory <u>Rob Roberts</u>
Title <u>Clark Fork Restoration Director</u>	Title <u>Clark Fork Restoration Director</u>
Address <u>111 N. Higgins St, Suite 500</u>	Address <u>111 N. Higgins St, Suite 500</u>
City <u>Missoula</u> State <u>Montana</u> Zip Code <u>59802</u>	City <u>Missoula</u> State <u>Montana</u> Zip Code <u>59802</u>
Phone Number <u>406-543-1192</u>	Phone Number <u>406-543-1192</u>
Fax Number <u>206-203-0751</u>	Fax Number <u>206-203-0751</u>
E-mail Address <u>rroberts@tu.org</u>	E-mail Address <u>rroberts@tu.org</u>
Signature _____	Signature _____

### Project Location

Statewide ☐ *If project is not statewide please complete the rest of this section.*

How is project related to a TMDL? Implementing a TMDL

Watershed Name or HUC # <u>Ninemile Creek</u>	TMDL Planning Area <u>Ninemile Creek</u>
Project 1 Name <u>Upper Ninemile Creek</u>	Latitude (1) <u>47.2264N</u> Longitude (1) <u>114.6620W</u>
Project 2 Name _____	Latitude (2) _____ Longitude (2) _____
Project 3 Name _____	Latitude (3) _____ Longitude (3) _____
Project 4 Name _____	Latitude (4) _____ Longitude (4) _____
Project 5 Name _____	Latitude (5) _____ Longitude (5) _____

### Nonpoint Source (NPS) Information

319 Project Category <u>Watershed Restoration</u>	Waterbody Type <u>River/Stream</u>
Functional Category <u>Sediment Control</u>	Is waterbody on the 2010 Impaired Waters List? <u>Yes</u>
1st Pollution Category <u>Resource Extraction (Placer Mining)</u>	Percent of Total (%) <u>100</u>
2nd Pollution Category _____	Percent of Total (%) _____
3rd Pollution Category _____	Percent of Total (%) _____
4th Pollution Category _____	Percent of Total (%) _____

### Project Funding

319 Funds Requested

Does the project sponsor have any open 319 contracts?

#### Matching Funds

State Match

State In-Kind Match

Local Funds

Other Match

Total Matching Funds

Other Federal Funds

Total Project Budget

Advance Requested\*  Administrative Fee

*\*Advances require additional justification and DEQ approval.*

Project Title

DEQ Contract Number

319 Award

Projected Closing Date

Project Title

DEQ Contract Number

319 Award

Projected Closing Date

### Project Description

Methods: Please describe the specific activities of this project.

Trout Unlimited will implement the completed TMDLs for Ninemile Creek by finalizing design plans for a mine reclamation and demonstration project on private land in Upper Ninemile Creek and reclaiming approximately one mile of stream channel and floodplain altered by historic mining activity. Trout Unlimited will also prioritize problem areas and work with landowners to develop water quality improvement activities on private land in the Ninemile Creek watershed.

Objectives: Please describe the specific/measurable objectives that will ensure the achievement of the project goal(s).

The objectives of the project are to reconnect Ninemile Creek to its floodplain through removal and regrading of approximately 37,000 cubic yards of dredge tailings, to establish a C3-4 channel type approximating reference conditions and to decrease sediment loading to Ninemile Creek by an estimated 316.8 tons per year. Objectives for working with private landowners include developing 5-10 water quality improvement projects in the Ninemile Creek watershed during the grant period.

Overview: Please provide a brief summary of the proposed project.

There is a long history of mining, agriculture and resource extraction in the Ninemile Creek valley and tributaries. Records indicate that a gold boom occurred on Ninemile Creek between 1874 and 1877. Placer mining, including large scale dredge mining, continued in the watershed until the 1940s and then resurfaced in the 1970s and 1980s. As a result of this activity, mainstem Ninemile Creek has been severely altered and the floodplain is dominated by large placer tailings piles and dredge ponds. Many tributaries were also significantly affected by this mining activity.

In 2004, TU, Missoula County and the US Forest Service started a long term campaign to clean up all mining related impacts in the watershed, which were believed to be the major impediments to improving water quality and native fisheries. This collaborative group has reclaimed 4 mine sites by moving 62,000 cubic yards of mine waste and reconstructing 12,000 feet of stream channel. To date, these projects have largely focused on Forest Service land. In 2012, TU and partners developed a draft Watershed Restoration Plan for Ninemile Creek (WRP) as part of the TMDL planning process to further prioritize this work and developed a comprehensive restoration workplan for 2012 to 2020. The WRP identifies placer mining on tributaries and the Upper Ninemile Creek mining area - which encompasses nearly 4 miles of stream - as a leading cause of sediment loading to the watershed, with approximately 2,850 tons per year coming from the Upper Ninemile Creek mining area.

For this grant, TU proposes to initiate a demonstration project to reclaim historic mining activity on approximately 1 mile of Upper Ninemile Creek watershed. The mine reclamation project will demonstrate to cooperating landowners, partners and funding agencies that, not only are the methods and techniques used on past tributary projects transferrable to larger projects on mainstem Ninemile Creek, but that the project team has the ability to fund and implement projects that will lead to the full support of beneficial uses on Ninemile Creek. The project is a cooperative effort between Missoula County, Trout Unlimited, the Forest Service, consulting professionals and other partners. Planning and data collection efforts have taken place over the last four years to document impacts, evaluate project alternatives and develop conceptual design plans. The project is scheduled to begin in the summer of 2014.

## Section II: Background Information

### A: Statement of Need and Intent

Historic mining activity on Sawpit Creek and mainstem Ninemile Creek has caused significant environmental damage and impacted natural resources. Nearly four miles of Ninemile Creek and the confluence areas with four major tributaries - estimated at more than 500 acres - has been dredged and placer mined, starting in the late 1930s until as recently as the early 1980s. Typical problems include piles of placer mine tailings that range from 12 to 40 feet tall, a lack of floodplain connectivity and excessive erosion. Additionally, large settling ponds dot the landscape and riparian vegetation throughout the site is insufficient to maintain adequate bank stability, provide shade, and filter out sediments and other pollutants from the stream. The valley bottom was essentially turned upside down during the mining process. Because subsurface fines and small gravels were washed away downstream as part of the processing, what remains are large piles of coarse cobble and boulders which confine the stream channel and have been slow to revegetate. This massive disturbance and loss of material has resulted in the valley bottom being lowered by as much as 10 feet, causing major headcutting up the tributaries. Furthermore, a large pulse of sediment and bedload has slowly been moving downstream, causing major channel migration and instability - threatening infrastructure and causing erosion on pasture and private land. Bank erosion surveys show that an estimated 2,850 tons per year of sediment is entering the stream due to mining impacts. Bridges, roads, power lines, and private property downstream have all been affected by the sediment pulse and resulting excessive channel migration.

Upper Ninemile Creek was historically a very important area in terms of hydrologic function and fish and wildlife habitat. The area essentially connects the forested uplands on public land to the grass-dominated lowlands on private land. Unfortunately, stream temperature monitoring shows a large spike in summer daily maximum water temperatures in the mining area. Habitat surveys also show that levels of woody debris per 100 meters is below 2 pieces in most reaches, while the number of pools is below 2 pools per 100 meters. Due to the poor habitat quality, fisheries surveys show very low densities of salmonids in the project reach. Additional support for the project is found in the Ninemile Creek Total Maximum Daily Load (TMDL) document, which puts specific emphasis on the need seek funding for and implement reclamation activities on mainstem Ninemile Creek. The Ninemile TMDL states: "Historic placer mining accounts for an estimated 18% of the total sediment load to Ninemile Creek. Approximately 3.9 miles of the stream has been heavily impacted by mining, resulting in an over widened channel characterized by unstable banks, a lack of habitat diversity, and reduced riparian vegetation." Reclamation of mining activities is also an identified priority in the Ninemile Creek Watershed Restoration Plan, which lists the Upper Ninemile Creek project as a critical activity towards meeting overall sediment load reductions. This project also helps to achieve the goals of the 2012 Montana Non-Point Source Management Plan by restoring detrimental changes to instream channels from hydrologic modification and mining activities, with a focus on local collaboration and restoration of natural river processes.

### B: Collaborative Effort

Partner	Role
Missoula County	Planning, fundraising, and landowner relationships
Lolo National Forest	Planning, fundraising, biological monitoring and technical support
Montana Fish, Wildlife and Parks	Assessment, permitting, biological monitoring and technical support
Missoula Conservation District	Assessment, permitting and landowner relationships
Private Landowners	Land management, outreach and education and project development

#### *Additional Information (Collaborative Effort)*

Trout Unlimited, the Lolo National Forest, and Missoula County began a campaign to cleanup abandoned mine sites on public and private land in the Ninemile watershed in 2004. Since that time, the project team has successfully raised and managed more than \$1 million dollars for mine reclamation and stream restoration activities in the Ninemile Creek watershed. The group has also developed partnerships with the Missoula Conservation District, Montana, Fish Wildlife and Parks, and multiple private landowners in the area. As a result, four mine sites have been reclaimed and four other projects are currently in the design or implementation phases.

Funding Organization	Award Amount	Project Description	Project Status	Contact Information
Montana DNRC	\$200,800	Placer mine reclamation on Mattie V Creek and assesement activities on Ninemile Creek	Completed	Alicia Stickney 406-444-0547
	\$300,000	Hardrock mine reclamation on St Louis Creek	Completed	
	\$228,000	Placer mine reclamation on Twin Creek and survey and design activities on Ninemile Creek	Partially Completed	
Montana Fish, Wildlife and Parks	\$15,000	Placer mine reclamation on Eustache Creek	Completed	Mark Lere 406-444-2432
	\$17,633	Placer mine reclamation on Little McCormick Creek	Completed	
	\$65,450	Hardrock mine reclamation on St Louis creek	Completed	
	\$11,000	Fish screen installation on Sixmile Creek	Completed	
Montana DEQ	\$25,000	Placer mine reclamation on Little McCormick Creek	Completed	Robert Ray, Patrick Lizon
	\$35,000	Hardrock mine reclamation on St Louis Creek	Completed	
	\$38,400	Placer mine reclamation on Josephine Creek and developement of Ninemile Creek WRP	Partially Completed	
Lolo National Forest	\$112,000	Hardrock mine reclamation on St Louis Creek	Completed	Aubree Benson 329-3950
National Fish and Wildlife Foundation	\$60,438	- Fish habitat improvement and watershed planning in Middle Clark Fork River	Completed	Kenita Calhoun
	\$175,000	- Native fish restoration, irrigation inventory and mine reclamation in Clark Fork River watershed	Completed	

*Additional Information (Planning and Management)*

Trout Unlimited, the Lolo National Forest, and Missoula County began a campaign to cleanup abandoned mine sites on public and private land in the Ninemile watershed in 2004. Since that time, the project team has successfully raised and managed more than \$1 million dollars for mine reclamation and stream restoration activities in the Ninemile Creek watershed. This activity has necessitated multiple cooperative agreements and other complex arrangements for ensuring that project tasks are completed and contractors and consultants are paid or reimbursed. The group has also developed partnerships with the Missoula Conservation District, Montana, Fish Wildlife and Parks, and multiple private landowners in the area. As a result, four mine sites have been reclaimed and four other projects are currently in the design or implementation phases.

### Section III: Project Components

#### **A: Education and Outreach: Please briefly describe the education and outreach component of this proposal and the target audience.**

The WRP for Ninemile Creek identifies landowner outreach and project development on private land as an important activity. While TU and partners have successfully worked with private landowners on mine reclamation projects in the upper watershed on private inholdings, there is a recognized need for increased collaboration with private landowners in the lower valley. Under this grant, TU will begin contacting landowners to develop demonstration projects that focus on establishing riparian buffers and other water quality improvement projects on agricultural and residential properties. TU will work with local partners to identify priority problem areas, target landowners who have developed past working relationships and develop other networking opportunities in the area. The goal is to initiate a series of demonstration projects that will generate enthusiasm and support for increased activity and project development on private land. The target audience is residents in the Ninemile Creek watershed.

#### **C: Operation and Maintenance**

The Upper Ninemile Creek mine reclamation project is part of a long term campaign to clean up tributaries in the Ninemile Creek watershed impacted by past mining activity. As such, the project team has experience with multi-year projects completed on both public and private land and the associated operation and maintenance issues. Trout Unlimited has included post project maintenance in all project reclamation plans. For example, on the Mattie V Creek project, TU and the Lolo NF set up water sprinklers on the project site, fenced the project to protect against wildlife browsing and dedicated manpower to post project weed treatment and soil amendment as required by periodic monitoring and field inspection. Furthermore, the project team has also been monitoring revegetation success and geomorphic change on the Eustache Creek project for the past six years. TU has full time staff dedicated to project planning and these maintenance activities, including seasonal field technicians.

For the Upper Ninemile Creek project, restoration activities will take place on private land, as well as portions of land managed by the Lolo National Forest. The Lolo National Forest recently completed a comprehensive Environmental Assessment for the project, which outlines the agencies adaptive management goals and strategy over a ten year timeframe. Therefore, the Lolo NF will be heavily involved in operation and maintenance activities over the course of the projects lifetime. For portions of the project occurring on private land, landowners will be required to engage in property management plans over an approximately 20 year timeframe that protect the resources affected by the restoration activities. No equipment will be purchased as part of this grant that requires long term maintenance.

#### **D: Monitoring: Please briefly describe the monitoring component of this proposal.**

Project planning and assessment has been based on sediment load calculations, habitat surveys, fisheries surveys and stream temperature monitoring, including bank erosion surveys for nearly 4 miles of the Upper Ninemile Creek mining area. Furthermore, the project team has collected pre project data on channel planform geometry, substrate particle size, existing vegetation and other parameters which was compiled into a vegetation and geomorphic data summary report. To gather baseline data on specific pollutants targeted by the Ninemile Creek TMDL, bank erosion rates were calculated at seven locations throughout the one mile project reach, with a pre project sediment load estimate of 316.8 tons per year. Post project monitoring will be compared to pre project data to estimate sediment load reductions.

Fisheries surveys have been conducted in conjunction with Montana Fish, Wildlife and Parks and the Lolo National Forest at three locations in Upper Ninemile Creek for the last three years to develop pre project population estimates. Stream temperature has monitored at four location in Ninemile Creek for the last five years. Trout Unlimited is currently working with the University of Montana to develop a comprehensive monitoring plan for aquatic macroinvertebrates in the Upper Ninemile Creek project area.

While the preliminary monitoring plan includes post project monitoring at the same locations every other year for a minimum of five years after project completion, the project team is in the process of fully developing and finalizing effectiveness monitoring metrics based on project goals and objectives. TU and partners will engage staff from Montana DEQ and other agency professionals in the development of these monitoring plans. TU also expects to produce an approved Sampling and Analysis Plan and Quality Assurance Project Plan as a result of planning efforts.

## Section IV: Scope of Work

Task 1 Title Complete final design for Upper Ninemile Creek mine reclamation and demonstration project

### Description

The project team has completed a conceptual design plan for a reclamation and demonstration project, proposed for an approximately one mile reach of mainstem Ninemile Creek, including the confluence with Sawpit Creek. The conceptual design is based upon in depth field data collection by consulting professionals, hydraulic/hydrologic analyses and a reference reach identified on mainstem Ninemile Creek upstream of the project area. The next steps for the project include activities to support the final design and implementation of the project. To support the final engineering design plan, project team members will refine project hydrology and flood frequency analyses, model channel and floodplain hydraulics and refine channel and floodplain design dimensions. To support the revegetation design plan, project team members will delineate existing wetlands, identify seed, cutting and sod salvage areas and identify borrow sources for growth medium. To support planning and eventual project implementation, project team members will prepare permit applications, develop land management plans and landowner agreements, complete project layout and work on specifications and cost estimates for competitive bidding and contracting.

### Deliverables

Deliverables for Task 1 include construction and design plans for channel and floodplain grading, revegetation, wetland improvement, and typical treatment drawings. The project team will work with staff from MTDEQ on design review. Cost estimates and bid documents will also be produced. Project team members will also apply for relevant permits from the Army Corps of Engineers, Montana DEQ, the Missoula Conservation District, Montana Fish, Wildlife and Parks, and other entities as required.

### Task 1 Funding

319 Funds	\$50,000.00
Non-Federal Match	\$25,000.00
Other Federal Funds	\$5,000.00
Total Cost	\$80,000.00
Is Match Secured?	

Timeline September 2013 - June 2014

Match Source Montana DNRC/Missoula County, Montana FWP

Task 2 Title Implement on-the-ground activities at Upper Ninemile Creek mine reclamation and demonstration project

### Description

The project will include removal of approximately 37,000 cubic yards of dredge tailings, based upon the conceptual design. Approximately 4,000 feet of streamchannel will be improved and/or reconstructed with an average slope of 1% on Ninemile Creek. The channel will be a C3-4 stream type with a sinuosity of 1.4 to 1.5. The preferred area for the demonstration project is the reach closest to Sawpit Creek, including the lower 1,000 feet of Sawpit Creek. Preliminary drawings have been included with this document. Dredge tailings will be short hauled or moved with bulldozers to fill areas. Since the dredge tailings are mostly comprised of cobble and gravel - there are no heavy metals present - the material will be used to fill in historic dredge areas on site and create a floodplain that will accomodate reference conditions for Ninemile Creek. The meander wave length averages 125 feet, and the meander belt width ranges between 84 and 120 feet. Portions of the stream channel will be reconstructed using large woody debris jams and graded riffles to maintain vertical stream stability, while initial bank stability will be achieved through by wrapping topsoil and coir logs in erosion fabric and using brush and log matrices. The banks will be layered with willow cuttings, backfilled with screened soil, and finished with sod transplants from the salvage effort. Extensive revegetation activities will occur throughout the project, including the use of borrow soil for growth medium, wood slash for shade and microsites, vegetation clump transplants, and container planting at project completion.

### Deliverables

Deliverables for Task 2 include the reclamation of approximately 1 mile of Ninemile Creek and Sawpit Creek. The project will lead to an estimated sediment reduction to Ninemile Creek of 316.8 tons per year and move Ninemile Creek towards full support of beneficial uses.

### Task 2 Funding

319 Funds	\$200,000.00
Non-Federal Match	\$225,000.00
Other Federal Funds	\$45,000.00
Total Cost	\$470,000.00
Is Match Secured?	

Timeline July 2014 - October 2015

Match Source Montana DNRC/Missoula County, Montana FWP, Lolo NF

## Description

The project team is in the process of fully developing and finalizing effectiveness monitoring metrics based on project goals and objectives. Pre project data collection has included fisheries population surveys, stream temperatures, sediment loading, channel planform geometry, substrate particle size, existing vegetation, and other metrics. TU and partners will engage staff from Montana DEQ and other agency professionals in the development of a monitoring plan that outlines geographic locations, monitoring parameters and timeframes. The project team also expects to produce an approved Sampling and Analysis Plan and Quality Assurance Project Plan for submittal to MTDEQ. The project team will complete post project sediment load calculations and compare data with pre project sediment load data collected in 2011 to document the progress towards implementing the completed TMDLs for Ninemile Creek.

## Deliverables

Finalized monitoring plan including geographic locations, monitoring parameters and timeframes. An MTDEQ-approved Sampling and Analysis Plan and Quality Assurance Project Plan. Sediment load reduction estimates to document the progress towards implementing the completed TMDLs for Ninemile Creek.

## Task 3 Funding

319 Funds	<input type="text" value="\$15,000.00"/>
Non-Federal Match	<input type="text" value="\$5,000.00"/>
Other Federal Funds	<input type="text"/>
Total Cost	<input type="text" value="\$20,000.00"/>
Is Match Secured?	<input type="text"/>

Timeline September 2013 - October 2015Match Source Trout UnlimitedTask 4 Title Education and Outreach

## Description

Both the Ninemile Creek TMDL and Ninemile Creek Watershed Restoration Plan identify land clearing, historical agriculture and grazing and streambank modification as significant contributors to sediment loading in Ninemile Creek. Furthermore, elevated water temperatures in the mid to lower reaches of Ninemile Creek have been identified as a concern by many partnering organizations, although a formal impairment has not declared because of insufficient data. To address these issues, Trout Unlimited proposes to begin a coordinated effort to work with private landowners in the Ninemile Creek watershed. Under this grant, Trout Unlimited plans to begin making landowner contacts in the valley and will develop demonstration projects that focus on establishing riparian buffers and other water quality improvement projects on agricultural and residential properties. Objectives for working with private landowners include identifying priority areas for riparian planting, streamside management and improving stream temperature and developing 5-10 water quality improvement projects in the Ninemile Creek watershed during the grant period.

## Deliverables

Development of 5-10 water quality improvement demonstration projects in the Ninemile Creek watershed on private lands and documentation of efforts to solicit landowner involvement.

## Task 4 Funding

319 Funds	<input type="text" value="\$20,000.00"/>
Non-Federal Match	<input type="text"/>
Other Federal Funds	<input type="text"/>
Total Cost	<input type="text" value="\$20,000.00"/>
Is Match Secured?	<input type="text"/>

Timeline January 2014 - October 2015

Match Source \_\_\_\_\_



Description

Trout Unlimited will serve as the primary contract administrator and liaison with MTDEQ. Contract administration includes the development of contracts and timely submittal of status reports, annual reports, requests for reimbursement, match statements and a final report.

Deliverables

Status reports, annual reports, requests for reimbursement, match statements and a final report.

Task 5 Funding

319 Funds	<input type="text" value="\$15,000.00"/>
Non-Federal Match	<input type="text"/>
Other Federal Funds	<input type="text"/>
Total Cost	<input type="text" value="\$15,000.00"/>
Is Match Secured?	<input type="text"/>

Timeline    July 2013 - December 2015

Match Source

Task 6 Title

Description

Deliverables

Task 6 Funding

319 Funds	<input type="text"/>
Non-Federal Match	<input type="text"/>
Other Federal Funds	<input type="text"/>
Total Cost	<input type="text"/>
Is Match Secured?	<input type="text"/>

Timeline

Match Source



## Section V: Supporting Documents

### A: Detailed Project Budget

	Cash Match			In-Kind Match				
Task Number and Specific Action	Private	State	Federal	Private	State	Federal	319 Funds	Total Costs
Task 1 - Planning and permitting		\$5,000				\$5,000	\$20,000	\$30,000
Task 1 - Revegetation Plan		\$10,000					\$10,000	\$20,000
Task 1 - Final Design		\$10,000					\$20,000	\$30,000
Task 2 - Dredge tailings movement		\$50,000	\$20,000				\$100,000	\$170,000
Task 2 - Stream reconstruction		\$150,000	\$20,000				\$50,000	\$220,000
Task 2 - Revegetation		\$25,000	\$5,000				\$50,000	\$80,000
Task 3 - Monitoring Plan				\$5,000			\$5,000	\$10,000
Task 3 - SAP and QAPP							\$10,000	\$10,000
Task 4 - Priority identification							\$5,000	\$5,000
Task 4 - Project development							\$15,000	\$15,000
Task 5 - Office space							\$5,000	\$5,000
Task 5 - Salary and benefits							\$10,000	\$10,000
TOTAL		\$250,000	\$45,000	\$5,000		\$5,000	\$300,000	\$605,000

**B: Project Milestone Table:** Please complete the following Project Milestone Table by entering task numbers and titles in the left hand column, then check the box(es) for the appropriate quarter(s) and year(s) in which the task will take place.

Milestone	2QT 2013	3QT 2013	4QT 2013	1QT 2014	2QT 2014	3QT 2014	4QT 2014	1QT 2015	2QT 2015	3QT 2015	4QT 2015	1QT 2016
Task 1 - Complete final design for Upper Ninemile Creek mine reclamation and demonstration project	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 2 - Implement on-the-ground activities at Upper Ninemile Creek mine reclamation project	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 3 - Monitoring	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 4 - Outreach and education	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Task 5 - Administration	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
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	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Please ensure that you submit a project map(s) and letters of support along with this Final Application form. If design drawings are available please provide those as well. For on-the-ground work please include copies of the applicable permits.

☒ **C: Project Map**

☒ **D: Letters of Support**

☒ **E: Design Drawings**

☐ **F: Applicable Permits**

**G: Comments:** Please use the space provided for any additional information that may not have been captured by this application form.

This reclamation project is based upon the findings of the Ninemile Creek Geomorphic Data Summary Report, Vegetation Data Summary Report and Conceptual Design Plan. Ninemile Creek was broken down into seven distinct reaches based upon LiDAR survey results and field data was collected on channel cross sections, longitudinal profiles, planform geometry, substrate characterization, riffle stability, bank erosion, and aquatic habitat. Furthermore, the project team completed a vegetation field assessment by analyzing species presence, soil characteristics, hydrologic indicators, and observations of abiotic/biotic factors influencing plant communities at 18 sampling points. Project team members included representatives of Trout Unlimited, the Lolo National Forest, River Design Group and Geum Consulting. The planning, field data collection, analysis and reporting has taken approximately 4 years to complete.

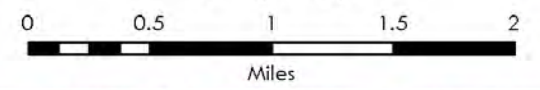
Conceptual design drawings for the first phase of reclamation activity resulting from this process have been included. Permit applications will be submitted in 2014.



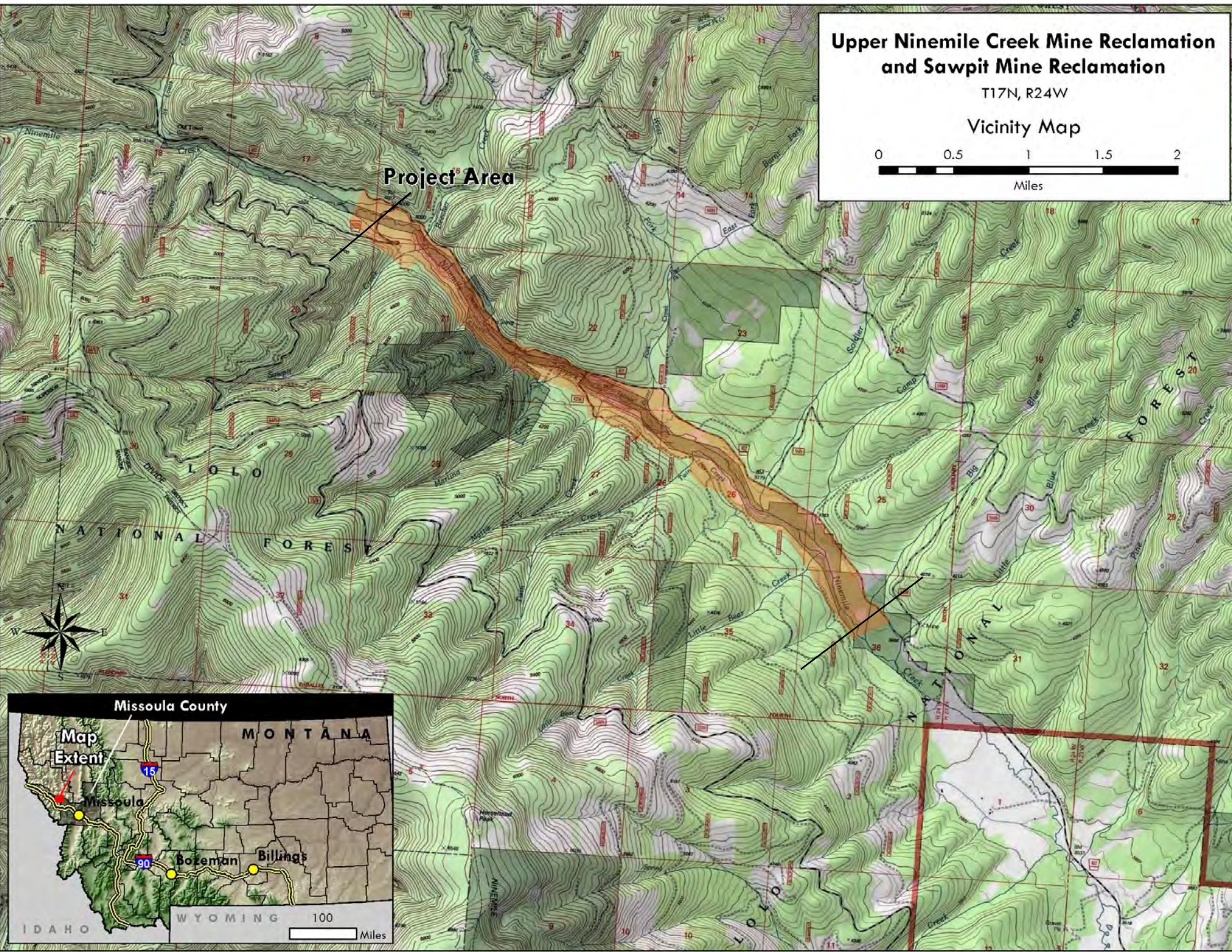
# Upper Ninemile Creek Mine Reclamation and Sawpit Mine Reclamation

T17N, R24W

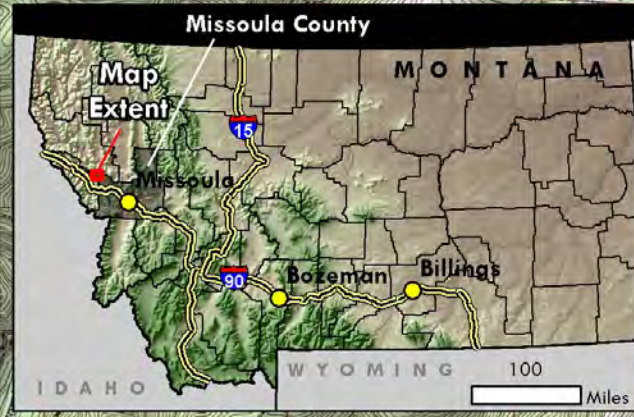
Vicinity Map



Project Area



Missoula County





# Upper Ninemile Creek Mine Reclamation and Sawpit Mine Reclamation

Plan View Index



0 250 500 750 1,000  
Feet

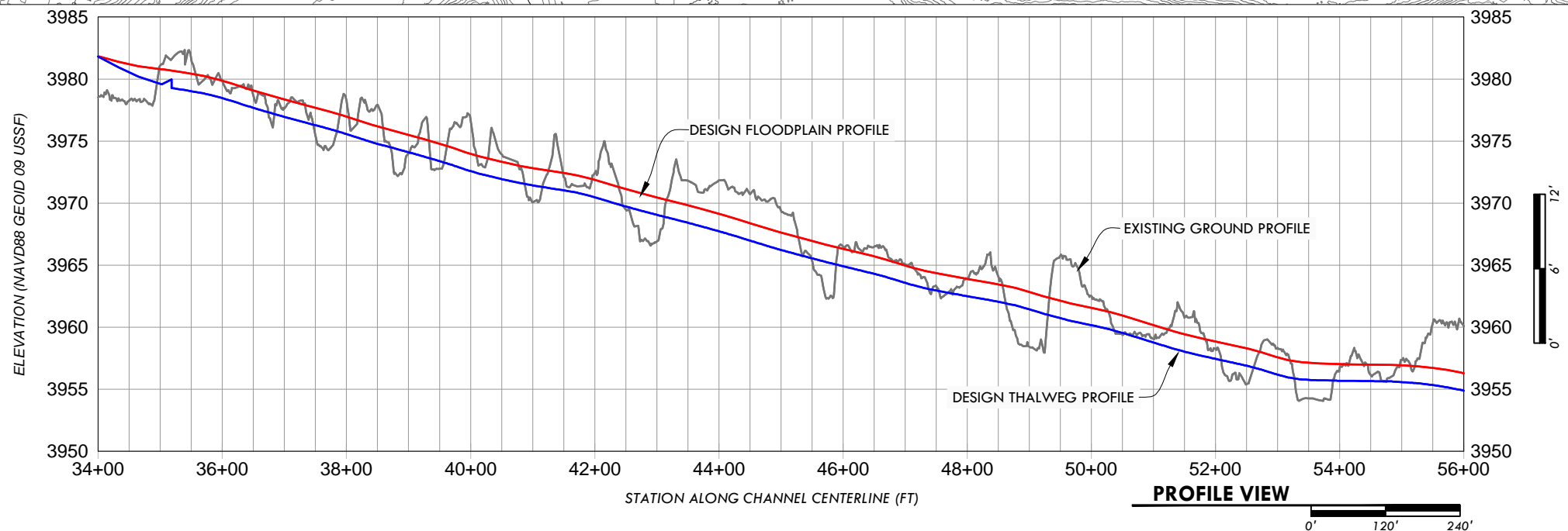
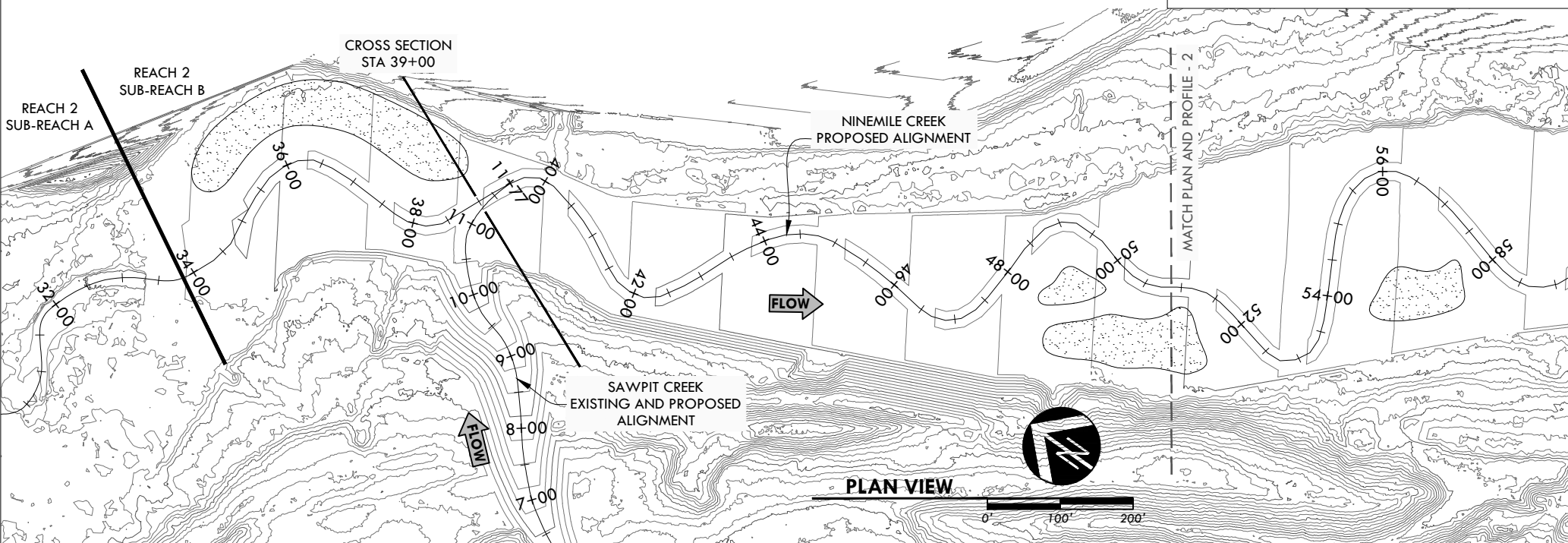


# PLAN AND PROFILE - 1

## Upper Ninemile Creek Mine Reclamation

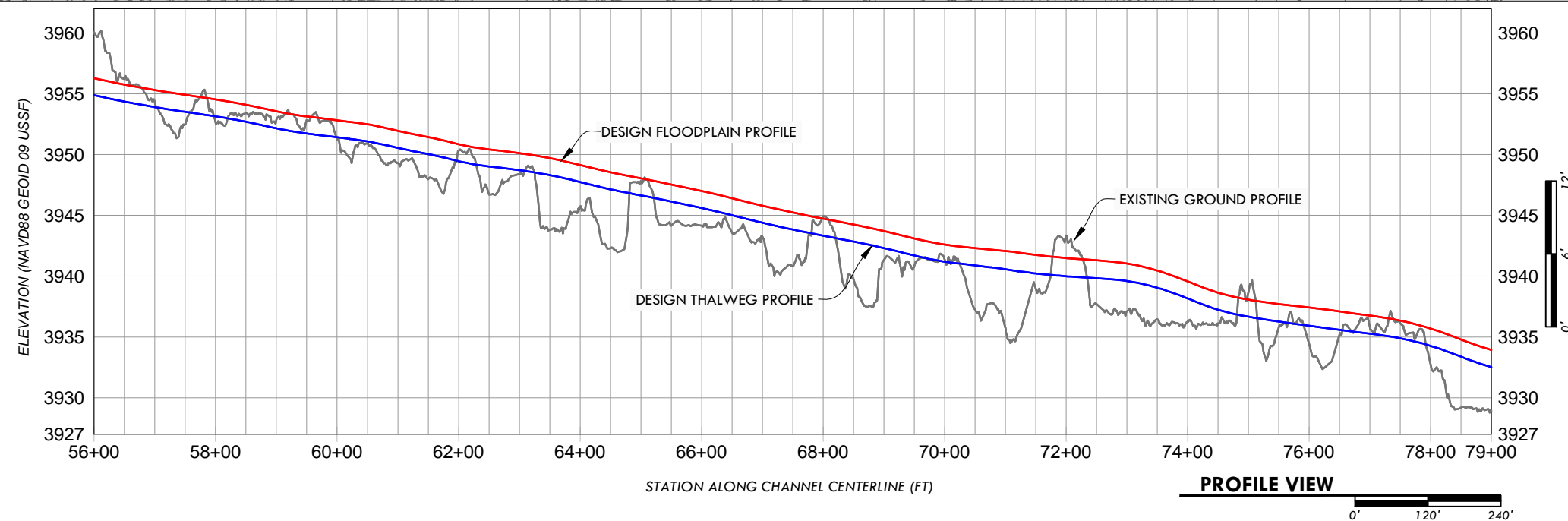
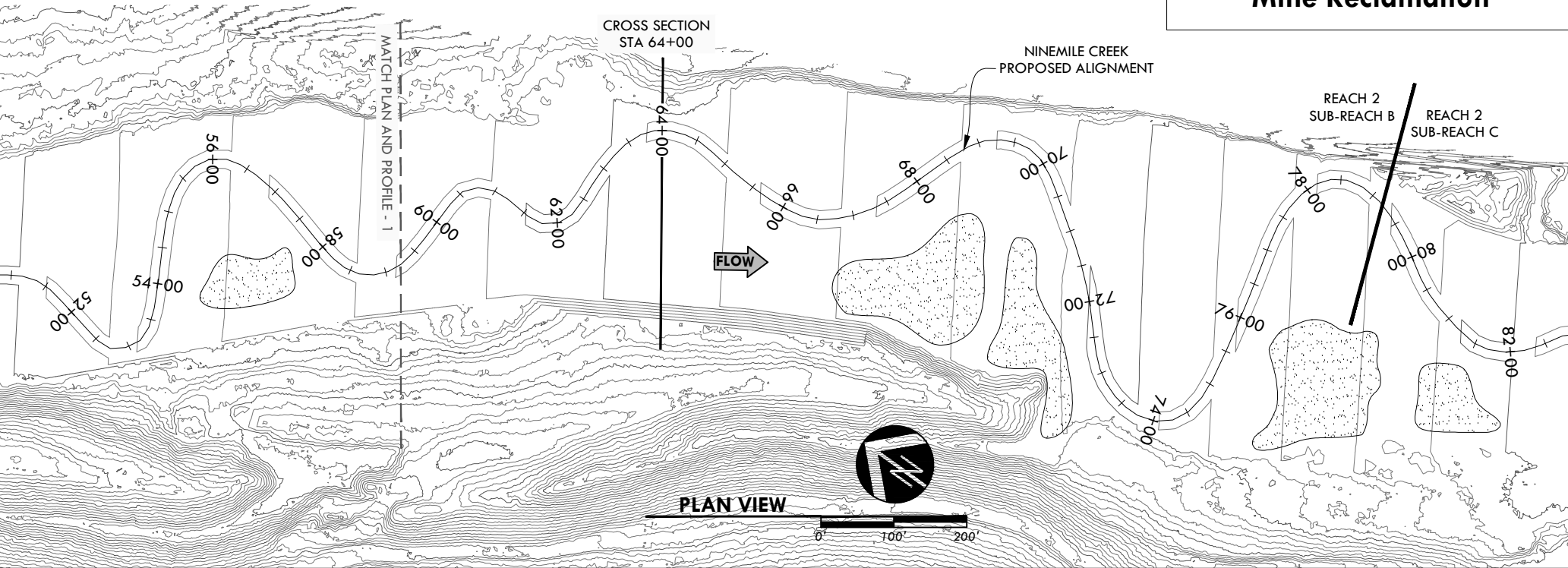


PROPOSED OFF-CHANNEL WETLANDS



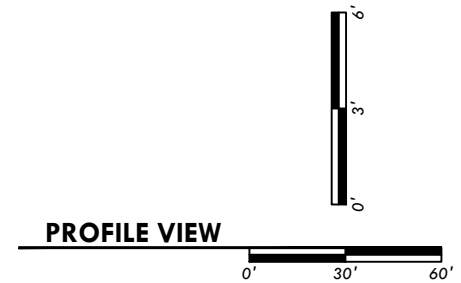
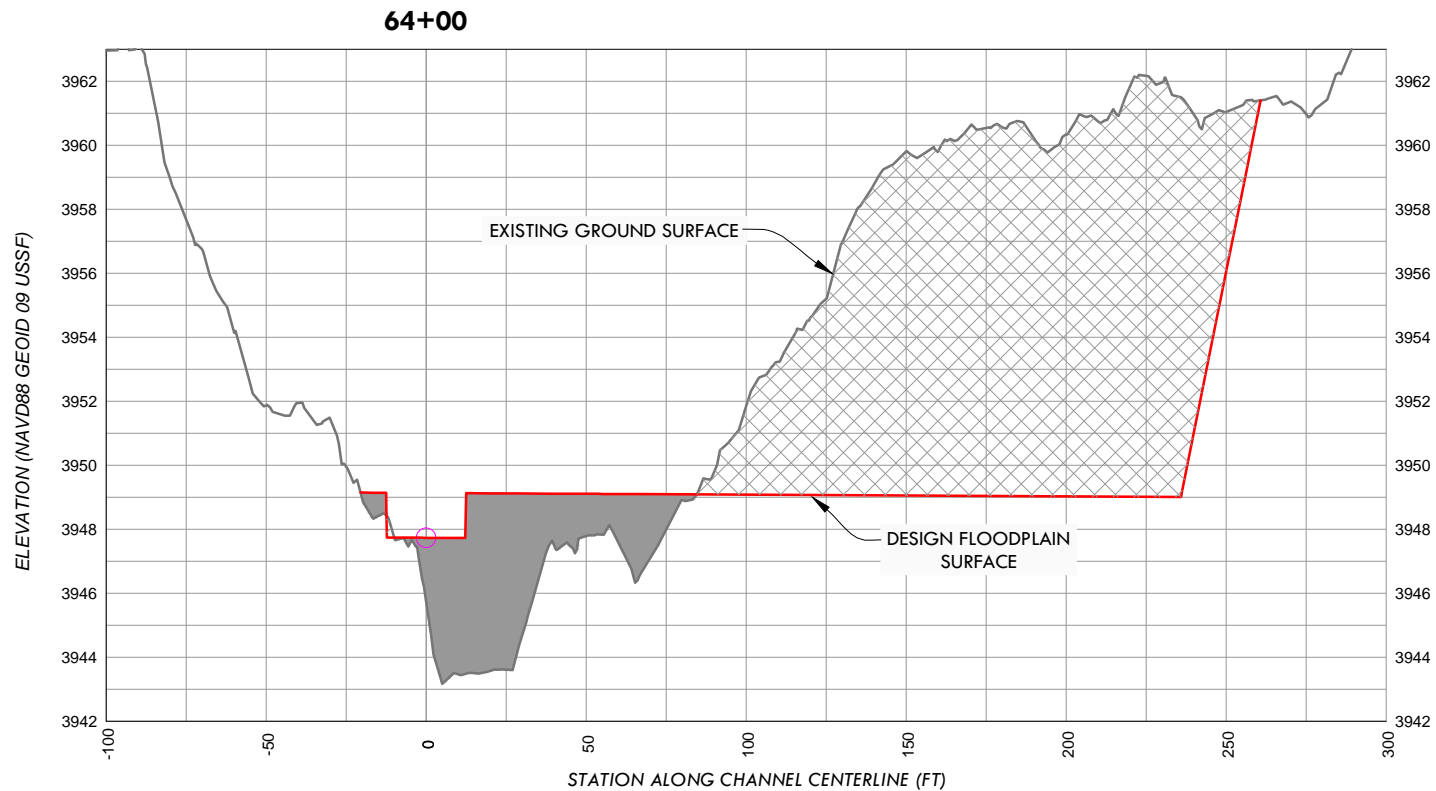
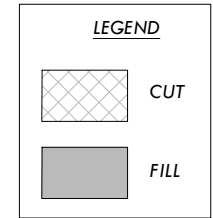
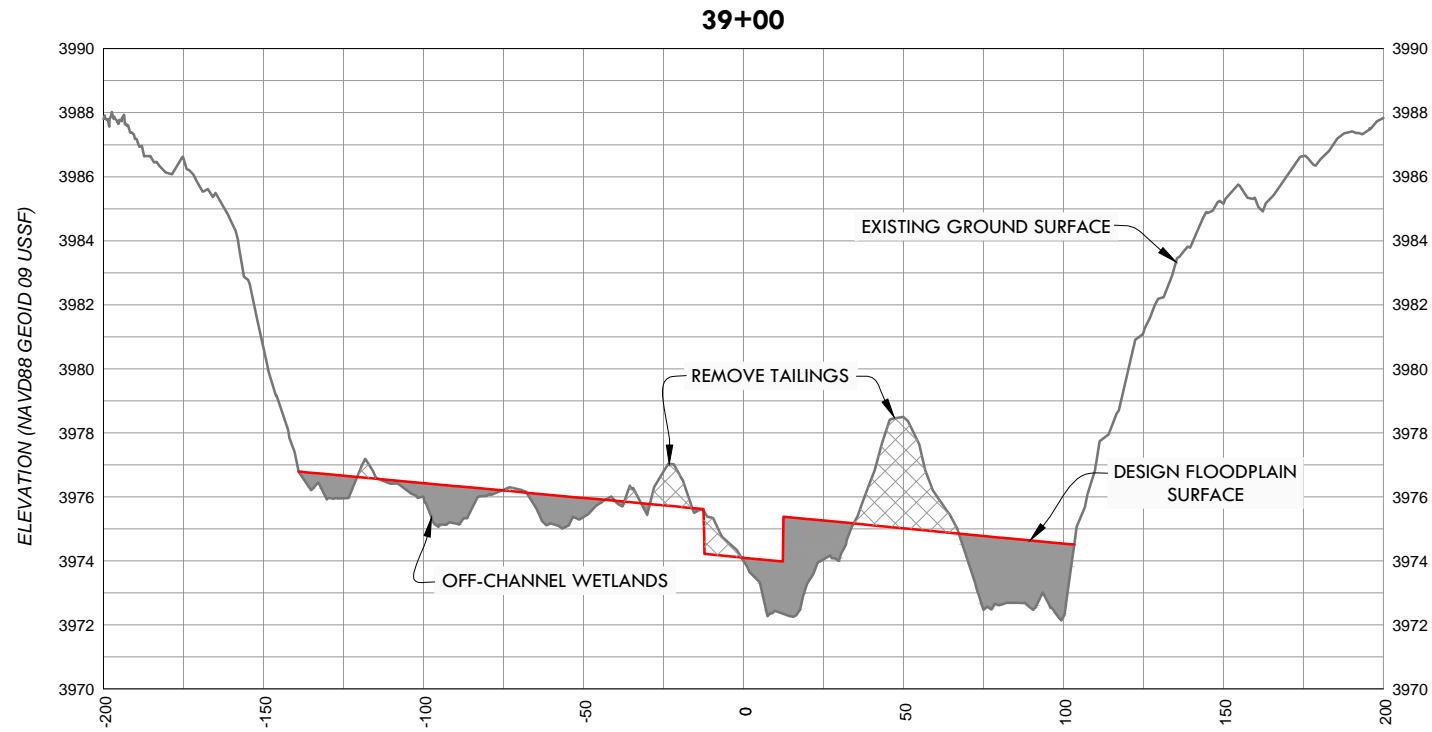
# PLAN AND PROFILE - 2

## Upper Ninemile Creek Mine Reclamation



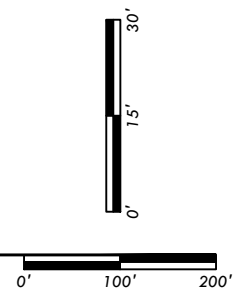
# CROSS SECTIONS

## Upper Ninemile Creek Mine Reclamation



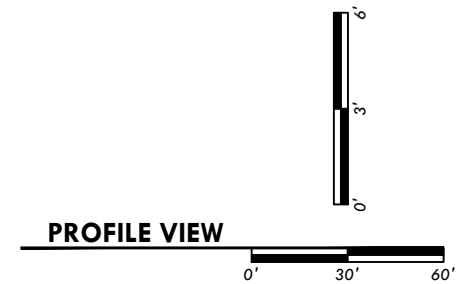
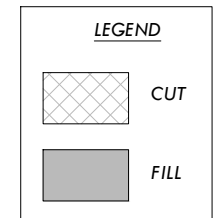
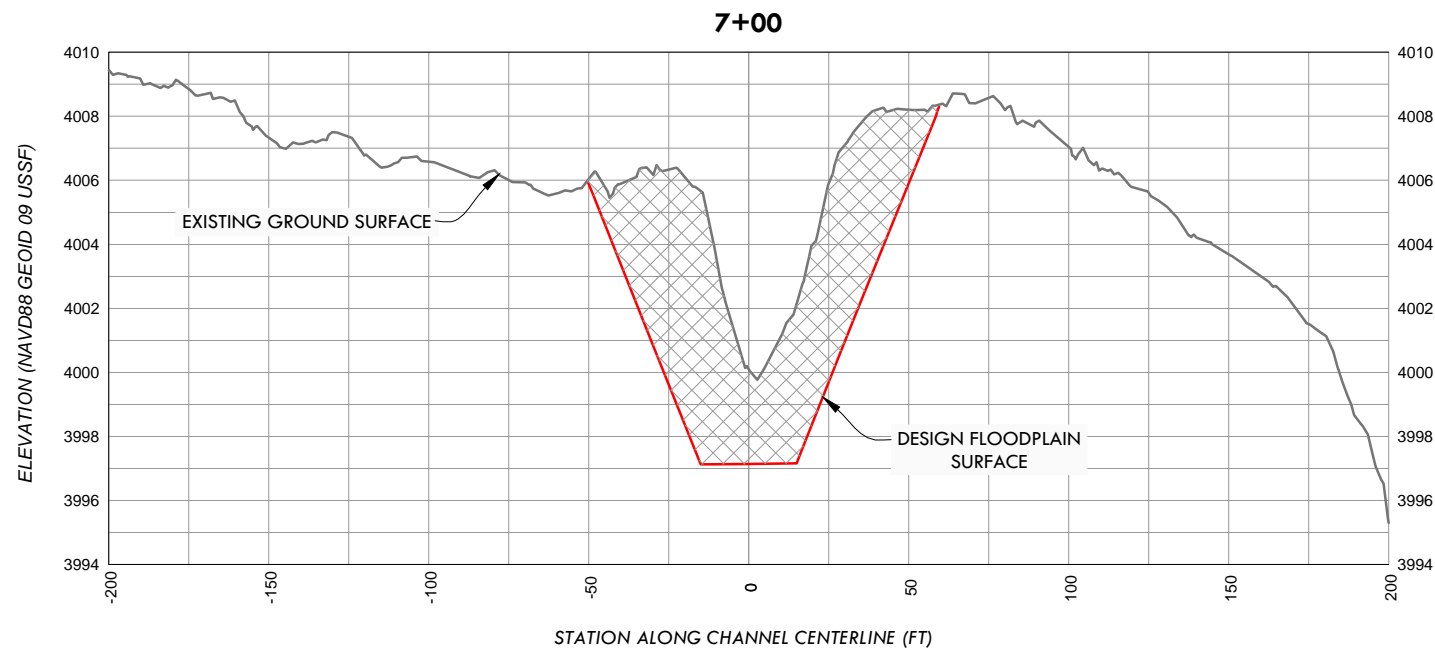
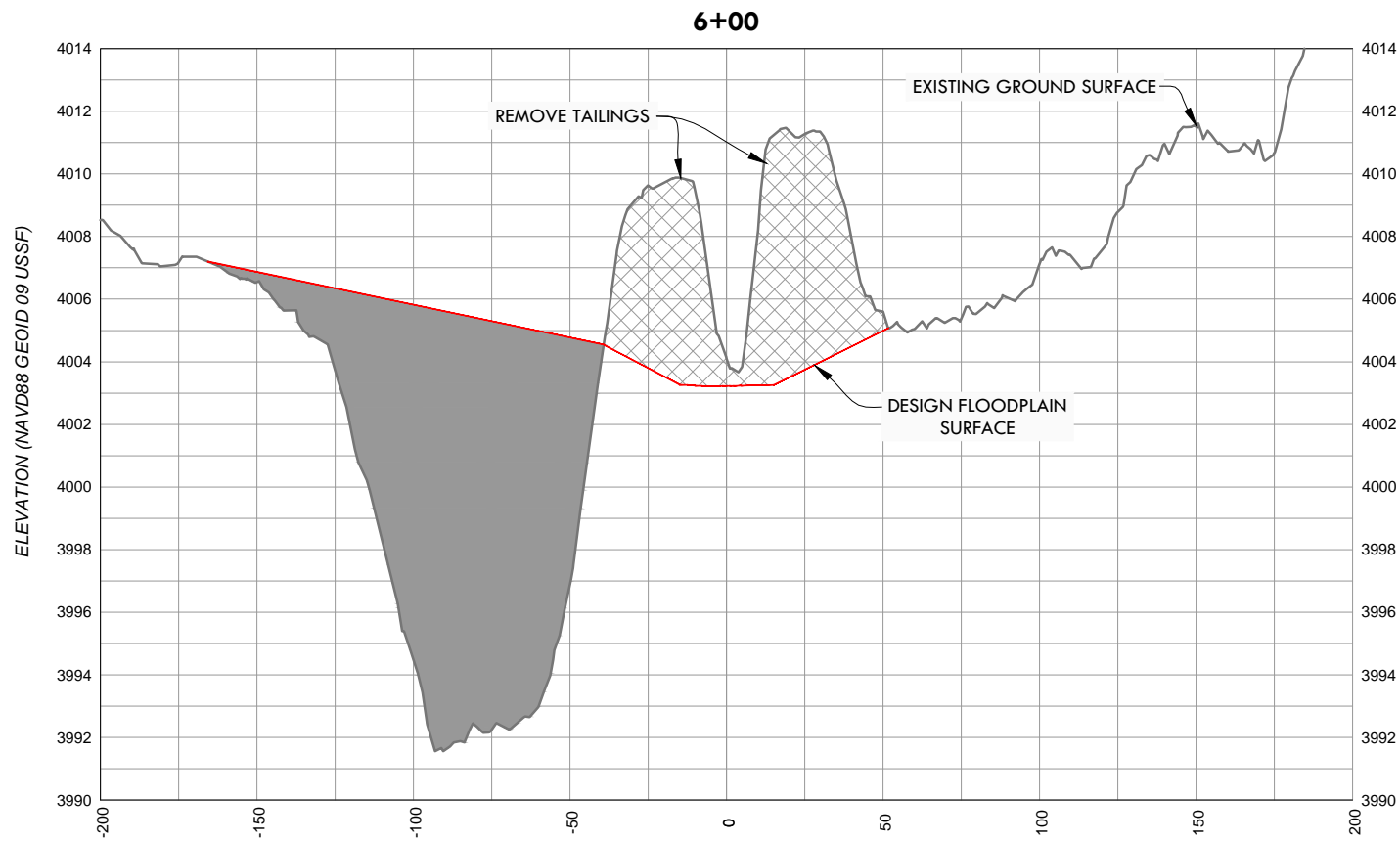


## Sawpit Creek Mine Reclamation



# CROSS SECTIONS

## Sawpit Creek Mine Reclamation





[www.co.missoula.mt.us /rural](http://www.co.missoula.mt.us/rural)

MISSOULA COUNTY RURAL INITIATIVES  
200 West Broadway Street  
Missoula, Montana 59802-4292

OFFICE LOCATION: 317 Woody Street  
PHONE: 406.258.3432  
FAX: 406.258.3920  
[ri@co.missoula.mt.us](mailto:ri@co.missoula.mt.us)

Robert Ray  
Watershed Protection Section Supervisor  
Department of Environmental Quality  
1520 E. Sixth Avenue  
P.O. Box 200901  
Helena, MT 59620

RI2012-21

September 25, 2012

Dear Robert,

Please accept this letter as Missoula County's support for Trout Unlimited's application for 319 Grant funding for mine reclamation work in the upper Ninemile Creek watershed. Trout Unlimited (TU) is applying for 319 funds to work with the US Forest Service, Missoula County, and others to reclaim this area, which has severely impaired water quality and fisheries due to past mining activities.

Missoula County has worked with TU on past cooperative projects in the Ninemile Creek drainage. TU has dedicated staff time and financial resources to these and other projects in the drainage, working in partnership with the Forest Service, Missoula County, Ninemile Watershed Group, Montana Department of Environmental Quality, Fish Wildlife and Parks, and other organizations on a long term, watershed scale plan to remediate mining impacts in the area. This collaborative effort is making a major, positive impact on aquatic resources in the watershed.

This grant request will support continued mine reclamation in the upper watershed, reclaiming portions of the mainstem of Ninemile Creek, as well as reclaiming and reconnecting its tributaries. The project will also demonstrate how previous successful reclamation efforts on tributaries can be applied to larger areas on the mainstem, as well as to private land. Funds from the 319 Grant Program will ensure that this impressive watershed scale reclamation work continues.

Thank you for considering this project for funding opportunity and your continued work for aquatic resources.

Sincerely,

A handwritten signature in black ink, appearing to read "Pat O'Herren".

Pat O'Herren  
Missoula County Rural Initiatives





# **Montana Fish, Wildlife & Parks**

3201 Spurgin Road  
Missoula, MT 59804  
Phone 406-542-5506  
E-mail [lknotek@mt.gov](mailto:lknotek@mt.gov)  
Fax 406-542-5529

September 24, 2012

Robert Ray, Watershed Protection Section Supervisor  
Water Quality Planning Bureau  
MT Department of Environmental Quality  
1520 E. Sixth Avenue  
P.O. Box 200901  
Helena, MT 59620-0901

**RE: Support for 319 Funding Request – Upper Ninemile Creek Mine Reclamation**

Dear Mr. Ray:

This letter is written in support of a collaborative project proposed by Trout Unlimited, the U.S. Forest Service, and Missoula County for mine reclamation work in Ninemile Creek west of Missoula. Specifically, funds are requested for a demonstration project involving the reclamation and restoration of a series patented mining claims on the upper main stem of Ninemile Creek. This work is a logical continuation of previous reclamation work on adjacent tributaries within the drainage on Little McCormick Creek, Mattie V Creek, Eustache Creek, etc.

Ninemile Creek is a very important tributary for the middle Clark Fork fishery and for native fish conservation. This drainage supports many populations of native westslope cutthroat trout (MT Species of Concern) and historically supported a viable bull trout population (Federally Threatened). Ninemile Creek also supports some of the largest rainbow and brown trout runs in the region, which provide recruitment to the Clark Fork fishery near Missoula (>40,000 angler-days per year in 2001-2009). Healthy tributaries are a key to the productivity and continued recovery of this system. The proposed projects are located on important stream segments near the headwaters of the watershed.

The Ninemile Creek drainage has experience extensive mining impacts over the past century. The proposed projects address priority mine reclamation sites identified in the Ninemile TMDL process and build upon recently completed and planned reclamation work in neighboring stream reaches and tributaries. In preparation for these projects that occur largely on private patented claims, we also encourage the project sponsors and funding entities to secure written assurances that guarantee reclaimed reaches will not be mined or disturbed in the future.

I strongly recommend granting funds for these projects for several reasons: 1) these sites are recognized as high priority reclamation sites, 2) the technical people involved in the work are experience and capable, and 3) project partners have demonstrated their commitment in following through with meaningful work on the ground. Please give strong consideration to these proposals and feel free to call me with questions at 542-5506.

Sincerely,

Ladd Knotek  
Fisheries Management Biologist



United States  
Department of  
Agriculture

Forest  
Service

Lolo National Forest

Building 24, Fort Missoula  
Missoula, MT 59804-7297  
406 329-3750

File Code: 1580

Date: SEP 21 2012

Robert Ray  
Watershed Protection Section Supervisor  
Water Quality Planning Bureau (111) Department of  
Environmental Quality (111)  
1520 E. Sixth Avenue  
P.O. Box 200901  
Helena, MT 59620-0901


Dear Ray,

I would like to offer the support of the Lolo National Forest for Trout Unlimited's application for a Section 319 Grant to continue restoration work in the Upper Ninemile Creek Mining District. A previously awarded grant was instrumental in planning efforts for the development of a Water Quality Restoration Plan and mine reclamation and restoration work on Ninemile Creek and its tributaries.

The 2012 grant request is for continuation of mine reclamation efforts on upper Ninemile Creek and associated tributaries. The proposed project area will eventually incorporate approximately 4 miles of the mainstem of upper Ninemile Creek, and several tributary mouths that have been impacted and disconnected from the mainstem due to historic mining (Twin, Martina, and Sawpit Creeks). This area includes many acres of private lands with substantial landscape disturbance due to extensive gold mining in the 1930s and 1940s. The mainstem lacks floodplain connectivity, as the valley bottom is dominated by large piles of mining spoils and dredge ponds, and tributaries lack functional connections to the mainstem. This area of Ninemile Creek is a crucial link for hydrologic function and aquatic organism passage, connecting upland forested public land with the grass-dominated valley on private land. We are currently working in partnership with Missoula County and Trout Unlimited to plan, raise funds for, and implement this mine reclamation work in upper Ninemile Creek.

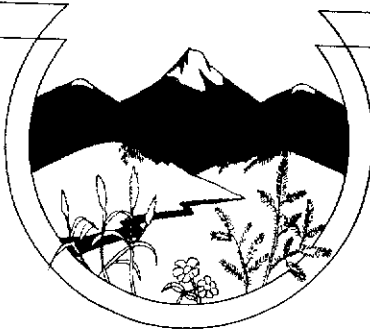
The collaborative group has previously completed several excellent restoration projects that will serve as templates for the proposed work. Projects on Eustache Creek, Little McCormick Creek, Mattie V Creek, and St. Louis Creek have resulted in mine waste removal, reconnected tributaries, increased surface water flow throughout the year, and functional streams and floodplains with native vegetation recovery. Funds from the Section 319 Grant Program are essential to completing on-the-ground reclamation projects and will help this collaborative group in completing an ambitious watershed scale plan to remediate mining impacts in the area. Therefore, the Forest Service strongly supports this grant application. Thank you for your consideration.

Sincerely,

  
DEBORAH L. R. AUSTIN  
Forest Supervisor

cc: Aubree Benson





## MISSOULA CONSERVATION DISTRICT

3550 Mullan Rd., Suite 106  
Missoula, MT 59808-5125  
(406) 829-3395  
Fax (406) 829-3455  
email: [mslacd@montana.com](mailto:mslacd@montana.com)  
[www.missoulacd.org](http://www.missoulacd.org)

May 14, 2012

Rob Roberts – Mine Restoration Coordinator  
Trout Unlimited  
111 N. Higgins, Suite 500  
Missoula, MT 59802

Re: DNRC Grant – Ninemile Drainage

Dear Grant Review Board,

At the May 14, 2012 meeting of the Missoula Conservation District, the District Board of Supervisors agreed to support Missoula County's efforts to secure funding from the DNRC for mine reclamation in the Ninemile Creek Drainage.

The historic upper Ninemile Creek mining complex includes four miles of main stem Ninemile Creek and the confluence areas with four tributaries. Mining activity has significantly altered the landscape over hundreds of acres. The issues in the Ninemile Drainage include piles of mine tailings, excessive erosion and a lack of floodplain connectivity.

This mine reclamation project is a cooperative effort between Missoula County, Trout Unlimited, and the US Forest Service. Missoula Conservation District supports this grant proposal as it fits within the District's mission and long range goals to improve & protect water quality, stream corridors, & stream and riparian habitats and to improve and to protect water availability.

If you have any questions, please do not hesitate to contact the Missoula Conservation District staff at (406) 829-3395, extension 101 for Lori Zeiser, or extension 113 for Tara Comfort, or e-mail at [mslacd@montana.com](mailto:mslacd@montana.com), or [Tara.Comfort@mt.nacdnet.net](mailto:Tara.Comfort@mt.nacdnet.net).

Sincerely,

Elizabeth Maclay  
Vice-Chair, Board of Supervisors  
Missoula Conservation District



May 7, 2012

Alicia Stickney  
Department of Natural Resources and Conservation  
Conservation and Resource Development Division, Resource  
Development Bureau  
PO Box 201601  
1625 Eleventh Avenue  
Helena, MT 59620-1601

Dear Ms. Stickney,

The Ninemile Wildlife Workgroup is a group of local citizens whose mission is to promote knowledge and stewardship of local wildlife and habitat within the communities and public lands of the Ninemile, Huson, and Alberton region.

The board of the Ninemile Wildlife Workgroup would like to support Missoula County's application for a DNRC Reclamation and Development Grant to continue restoration work in the Upper Ninemile Mining District. Through collaborative partnerships with government agencies, Trout Unlimited and private citizens, your previously awarded grants to Missoula County have been instrumental in restoring aquatic and riparian habitats to areas degraded by past mining activities. Continuing this restoration further enhances fish and wildlife populations and contributes to the quality of life enjoyed by residents and recreationists in Missoula County. The project also provides local employment for contractors and supports our local economy with the purchase of fuel, food, lodging and supplies.

Looking at the results of previous restoration projects is amazing. Some areas looked like industrial waste sites with streams that sub-surfaced below the tailings, disconnecting tributaries from Ninemile Creek. They now look more natural with surface flow restored and recovering riparian vegetation that will be suitable for fish and wildlife habitat once again.

Trout Unlimited has provided two lectures on their restoration work in the Ninemile Creek drainage during our group's lecture series. Both lectures were well attended and received by local citizens and sparked lots of interest and discussion.

The Ninemile Wildlife Workgroup Board supports this grant application as it promotes good stewardship of our valley supporting our mission, and it contributes to the local economy and our quality of life.

Thank you for your consideration.

Sincerely,

Pat Sweeney  
Ninemile Wildlife Workgroup Chairperson  
P.O. Box 435  
Huson, MT 59846  
(406) 626-1610



1380 West Ninemile Road  
Huson, MT 59846

April 30, 2012

Montana Department of Natural Resources and Conservation  
Reclamation and Development Grant Program

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This letter strongly supports Missoula County's grant proposal for DNRC funding to continue placer mine reclamation in the Ninemile Historic Mining District in the upper part of the Ninemile drainage. Trout Unlimited and the Lolo National Forest have, and will continue to play primary supporting roles in this massive restoration effort. The specific project proposed will reclaim the mine site on Sawpit Creek and a proximate portion of mainstem Ninemile Creek's four miles of severe mining disturbance. The work will take place on both private and National Forest lands--of note is the active support and cooperation of the private landowners in the affected area.

On several occasions I've spent the day volunteering on the Ninemile watershed restoration projects. The earthmoving scope of the work and, at the same time, the depth of detailed knowledge required by the professionals for planning and implementation are impressive. The results, truly awesome! It pleases me to contribute in this small way to restoring functional streams, aquatic habitat with improved fish passage, floodplains and wetlands with native riparian vegetation, and increased wildlife habitat and connectivity.

The Ninemile's exceptionally rich and diverse natural resources and great beauty are a treasure well worth protecting. Returning the headwaters of Ninemile Creek to their proper and necessary function is absolutely a "win-win" endeavor that will yield many returns on the investment of time, hard work, and hard-won funding in perpetuity—upstream, downstream, and into the Clark Fork watershed. Local residents benefit from improved stream channeling, effective floodplains and restored wetlands and riparian zones. Recreating Montanans, among them many Missoulians, will enjoy improved camping, fishing, tubing and an increased wildlife presence.

I'm not alone in appreciating the restoration work that has been accomplished to date and the funding that has been, and hopefully will continue to be made available to complete remediation of Ninemile's Historic Mining District.

Thank you for your consideration of these comments.

Sincerely,

Eleanor Danesh, MSc  
*Founder and Past Chair,*  
*Ninemile Wildlife Workgroup*

Alicia Stickney  
Montana DNRC  
Conservation and Resource Development Division  
P.O. Box 201601  
1625 Eleventh Avenue  
Helena, MT 59620-1601

April 12, 2012

Dear Ms. Stickney:

I am a private landowner with property located on Ninemile Creek. My property has been in the family since 1970 and is located downstream of the historic gold dredging reaches proposed for future restoration. Having spent vast amounts of time in the Ninemile valley, I have become acutely aware of how impaired some of these mined areas are in their current condition. One of the severe impacts afflicting Ninemile Creek include dredge tailings piles often exceeding 30 feet in height located directly in the floodplain. These piles effectively eliminate Ninemile Creek's ability to access areas of the floodplain vital in distributing high spring flows. Normally, this annual floodplain access helps to limit excessive erosion and subsequently helps maintain healthy channel stability during high water events. Due to the inability of the stream to function correctly, excessive erosion occurs on an annual basis in these areas. These erosional events detrimentally affect aquatic organisms present, as well as unnaturally resculpt stream habitat, often including adjacent riparian landscapes. Many constructed settling ponds also exist in the area. These ponds allow atypical warming of stream waters, and coupled with the abnormal resculpting of riparian areas, together may result in a massive lack in crucial vegetation and stream side cover. This inevitably results in higher stream water temperatures detrimentally affecting native fish and favoring non-native fish occupation of these areas. A complete loss of the migratory component of native fish historically utilizing these systems in the Ninemile drainage may result as some of these tributaries have not possessed an adequate connection to main stem Ninemile Creek in approximately 70 years. Therefore, the longer these problems in the Ninemile are allowed to persist, the higher the consequences for the landscape and the native fish present in these areas.

In light of the current impaired condition of these mined areas in the Ninemile valley, I am in full support of the restoration and reclamation efforts proposed by Trout Unlimited, Missoula County, the United States Forest Service, Department of Natural Resources & Conservation, and other partners to restore the Ninemile drainage and its tributaries to a connected, healthy ecosystem similar to the one present before mining occurred in the area many decades ago.

Please use this letter as indication of my full support for mine reclamation work in the Ninemile Creek watershed. Thank you very much for your time, hard work, diligence, help and cooperation.

Sincerely,

David D. Pontrelli  
28235 Ninemile Rd  
Huson, MT 59846

Alicia Stickney  
Montana DNRC  
Conservation and Resource Development Division  
P.O. Box 201601  
1625 Eleventh Avenue  
Helena, MT 59620-1601

April 12, 2012

Dear Ms. Stickney:

I am a private landowner on Upper Ninemile Creek on a patented mining claim called the Housum Placer. Due to historic dredge mining activity that occurred before I purchased the property, Ninemile Creek has been severely impacted. Environmental damages include piles of dredged material that range from 12 to 40 feet tall, settling ponds, a lack of floodplain connectivity and excessive erosion.

I am pleased to be working with Missoula County, Trout Unlimited and other partners on this excellent restoration and reclamation opportunity that compliments work by other conservation interests elsewhere in the watershed. My husband Ralph and I hope someday to see Ninemile Creek back in a pristine condition, like it was before the area was mined.

Please use this letter as indication of my support for mine reclamation work in the Ninemile Creek watershed. Thank you very much for your help and cooperation.

Sincerely,

Betty Thisted  
28850 Ninemile Rd  
Huson, MT 59846