



Humboldt Redwood
COMPANY, LLC

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March 12, 2009

Ms. Catherine Kuhlman
California Regional Water Quality Control Board
North Coast Region
5550 Skylane Blvd, Suite A
Santa Rosa, CA 95403

Subject: Enrollment of THP 1-05-077 HUM (Unit 4) in the Freshwater Creek WWDR, "Tier II"

Dear Ms. Kuhlman:

HRC is requesting Tier II enrollment under Watershed-Wide Waste Discharge Requirement (WWDR) Order No. R1-2006-0041 for unit 4 of THP 1-05-077 HUM. This unit is comprised of 32.0 acres of Selection (16.0 clear-cut equivalent acres). The Right-of-Way for this unit was submitted as a Tier I unit. Total acres currently enrolled or proposed for enrollment under Order No. R1-2006-0041 Tier II is shown in the Attached Pre-Harvest Planning Report provided by Forester, Mr. Wayne Rice. The Erosion Control Plan (ECP), Form 200 and an annual waste discharge enrollment fee have already been submitted for this THP.

Landslide risks associated with this plan were evaluated in compliance with the Freshwater Creek and Elk River WWDR Permit Acreage Enrollment and Compliance Monitoring Program Quality Assurance Project Plan (Version 2.0, September 1, 2006) approved by the Executive Officer of the North Coast Regional Water Quality Control Board. This approach uses commonly accepted standards for geologic practices in forest management (Sidle et al. 1985, Soeters and Van Western 1996, and Sidle and Ochiai 2006) to assess factors known to contribute to landslides, such as steepness of slope, slope convergence, hydrology, geologic features, and visibly unstable areas. Overlapping and complementary scientific techniques combining state-of-the-art digital elevation model (DEM) slope stability models, field investigation, and terrain analysis were used in this assessment.

In summary the Unit occupies moderate to gently inclined northwest facing slopes above Freshwater Creek. The unit is mapped to be underlain by multiple dormant mature earthflows. The earthflows are mapped to be occurring within mélange rocks of the central belt Franciscan Complex. Watercourses are marginally well defined. The THP unit was initially developed with respect to clearcut silviculture. New ownership and management shift to uneven aged stand characteristics has resulted in amending the silviculture to selection with a target retention of 100 ft² of basal area. The unit will be both ground based and cable logged. A new road will be constructed within the unit to accommodate the logging. The road alignment is constrained to gently inclined slopes and does not cross any watercourses. Standard HCP Riparian Management Zones (RMZ) are implemented for the Class I and Class II watercourses. The Forester has implemented an additional RMZ for Class III that prohibit the aggressive harvest of timber within or adjacent the watercourses. The gently inclined slopes, the lack of recent mass wasting activity, the implemented watercourse buffers, and the partial

harvesting of the stand within the unit results in a proposed harvest that meets the standards for Tier II enrollment.

The THP proposes an uneven-age silviculture retaining 100 sqft of basal area. Sub-merchantable trees and those with specific wildlife value characteristics (e.g., cavities, large limbs, broken tops, snags, etc.) will be retained within the harvest area to the extent feasible. Cable and ground based yarding is approved for the unit. Post-harvest no site preparation will occur.

Greater detail regarding this landslide hazard assessment is provided in the attached *THP Unit Review for Tier 2 Enrollment*. The licensed geologist involved with the Tier 2 landslide risk evaluation has concluded the proposed harvest operation, if implemented as planned and approved, will result in a negligible increase in potential for post-harvest landsliding; and thereby meets the applicable Zero Delivery of landslide related sediment performance standards of NCRWQCB Orders R1-2006-0041 and R1-2008-0071.

Please do not hesitate to contact me should you have any questions or comments regarding this application for enrollment into WWDR (Order No. R1-2006-0041).

Respectfully,

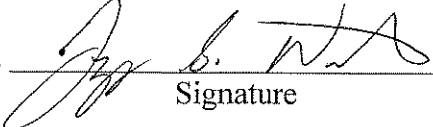


Wayne D. Rice,
RPF
Humboldt Redwood Company, LLC

Attachments:

Professional Certification of Design
THP Unit Review for Tier II enrollment
Pre-harvest Planning Report
Unit Specific ECP
Maps

Professional Certification of Design

I, , P.G. 7950, 3/12/09,
Signature license # Date



Place licensed seal here

hereby certify, in accordance with North Coast Regional Water Quality Control Board (NCRWQCB) Order Nos. R1-2006-0039 and R1-2006-0041, that the attached application and the description of THP modifications, and the materials submitted along with:

THP No. 1-05-077 HUM (Around Gills) Unit # 4

- a. are in accordance with accepted practices, and recognized professional standards;
- b. comply with the requirements of the Monitoring and Reporting Program No. R1-2006-0103, approved by the Executive Officer of the North Coast Regional Water Quality Control Board; and
- c. provided that the THP is properly implemented, operated, and maintained, are adequate for the THP to meet the applicable Zero Net Delivery performance standards of NCRWQCB Orders R1-2006-0039, R1-2006-0041, and R1-2006-0103, insofar as such performance can reasonably be predicted by accepted engineering geologic practices.

The opinions presented in the subject THP have been developed using that degree of care and skill ordinarily exercised, under similar circumstances, by reputable engineering geologists practicing in this or similar localities. No other warranty, expressed or implied, is made as to the professional advice included in this report.

THP: Around Gills THP 05-077 Unit # 4 3-10-09

Tools Used in This Assessment	Figure Number
Elevation Map with 10 ft Contours (HRC LiDAR)	1
SHALSTAB (Montgomery and Dietrich, 1994 and Palco, 2006) / Slope Class / Hillshade Maps	2
CGS Geology and Geomorphic Features (CGS, 1999)	3
Mass Wasting Potential Map (HRC, 1999)	4
Aerial Photo Map (HRC, 2007)	5
HRC Freshwater Creek WA deep-seated LS inventory (HRC, 2001)	6
Road Condition Map	7

Please see back of enrollment for references

Summary of Changes to THP Prescriptions Based on Tier II Analysis in this Unit:

Geologic Review	Forestry Silviculture/Site Prep Plan	Operational Design Plan
4-1	For reasons other than slope stability hazard, silviculture is now a selection with a target retention of 100 ft ² of basal area per acre. No site preparation will occur due to partial harvesting.	No change to approved yarding methods.

Geological Summary (information presented from existing bodies of work):

The harvest unit occupies predominantly northwest-facing, gentle to moderately inclined, concave and convex slopes underlain by mélange of the Central Belt Franciscan Complex. Figure 3 interprets the right lateral margin of a large dormant earthflow extending into the western portion of the unit. CGS (2005) also maps debris slide slopes adjacent the Class I watercourse that defines the down slope harvest boundary. The debris slide slopes roughly correlate with the Class I RMZ

Watershed Analysis mapping shows the unit to be underlain by a low to moderate hazard deep-seated landslides (Figure 6) within the lower slope elevations of the unit. New road construction is proposed across both of the landslides

Review of Figure 2 (Hillslope Shade) shows the slopes to be regionally smooth yet irregular in surface texture. This expression is typical of weathered mélange. We did not observe clear indication of the Figure 6 mapped landslides within the unit. Should they exist, the failures are considered very old, dormant mature, and not exacerbated by harvest activities.

Geology review of the THP during THP layout did not find any landslides. The THP was reviewed by various agencies during PHI and found to be compliant with the Forest Practice Rules with respect to the disclosure of all known unstable areas. The reviewing agencies were not concerned about harvesting timber atop the CGS dormant earthflow or the low and moderate hazard deep seated landslide mapped by watershed analysis within the unit.

Since there is little hazard associated with this unit, and the unit is uniformly oriented with similar geology, we treat the unit as a single polygon.

The THP was originally approved for even aged harvesting (clearcut). Slope stability conditions were evaluated with respect to that proposed silviculture. New ownership and changed management style has resulted in a silviculture change to selection retaining a minimum of 100 square of basal area per acre.

The area was clearcut and ground-lead cable logged using ‘steam donkeys’ around the turn of the twentieth century. New roads are proposed for construction to access the unit to accommodate the harvesting of the timber.

The unit has been addressed as one polygon due to the small size of the unit.

THP Unit: # 4

Polygon: 4-1

A) General Observations

The polygon primarily occupies broadly convergent slopes that are inclined between 10 and 50%. Slope inclinations exceeding 50% are infrequent and limited in acreage (Figure 2).

The polygon includes four short segments of Class III watercourses. A moderately developed Class II watercourse defines the eastern harvest boundary and a deeply entrenched Class I watercourse defines the northern, down slope, harvest unit boundary.

The Class III watercourses are poorly developed with very limited channel incision on gently inclined, broadly convergent swales.

The unit occupies approximately 1500 feet along the down slope Class I watercourse. The low gradient channel is loosely confined with several meander bends adjacent the unit. The RMZ harvest exclusion zone has been expanded and ranges from 100 to 150 feet upslope of the watercourse.

Elevated SHALSTAB (values 1 and 2) is modeled within the unit. Ten pixels of SHALSTAB value 2 are scattered throughout the unit. Three pixels correlate with a short segment of Class III watercourse in the southeastern portion of the unit. Two isolated pixels are located at mid elevations within the unit and a cluster is located in the northwestern corner of the unit (Figure 2). Three pixels of SHALSTAB value 1 are also located in the northwestern cluster of elevated SHALSTAB. Slope inclinations at this location range from 40-60% and the topography is tightly convergent. Our review of the elevated value SHALSTAB areas revealed steeply inclined swales, evenly distributed, in situ old growth stumps and abundant 2nd growth timber.

Mass Wasting Potential for the polygon is modeled as low with slope perpendicular strips of moderate hazard (figure 4). The moderated hazard rating appears to correlate with steeper slope inclinations; however, this is a tenuous correlation.

No unstable areas were recorded during THP layout.

Typical Riparian Management Zones for the Class II watercourses includes a 30-foot no harvest inner band and a selection buffer that extends the RMZ out to between 75 and 100 feet. The outerband may be harvested but must retain a minimum of 60% canopy closure.

The implemented THP mitigation for the Class III watercourses includes the retention of all trees growing within the active channel and all

A) General Observations

trees 8 inches and less within 15 feet of the channel. The new silviculture has bolstered Class III mitigations to include a 50' RMZ where side slopes greater than 50% exist and maintaining 75 sq. ft evenly distributed in the buffer. Where side slopes are less than 50% employ a 25' RMZ that maintains 75 sq. ft evenly distributed in the buffer and no group opening greater than ¼ acre immediately above the terminus of class III with slopes greater than 40% or immediately above a headwall swale. Additionally sub-merchantable trees and those with specific wildlife value characteristics (e.g., cavities, large limbs, broken tops, snags, etc.) will be retained within the harvest area to the extent feasible.

The THP was developed and assessed with respect to clearcut silviculture. Under new management, the silviculture for this unit has been amended to selection with a target retention of 100 square feet of basal area. This silviculture change is to convert even aged timber stands to uneven aged timber stands and is not in response to perceived slope instability. A significant segment of road is proposed for construction across moderate to gently inclined slopes.

B) Harvest Related Impacts and Hillslope Sensitivity

No evidence of instability associated with landsliding was observed during field investigation, despite a history of active management.

The lack of observed landslides within the proposed operational portions of the unit suggest that ground based activities do not exceed slope stability thresholds. The slope has experienced clearcut, burning and donkey yarding.

The locally extending and steeply inclined slope segments within the unit are likely underlain by shallow knockers (essentially large boulders).

The limited number of watercourses for the area of the harvest unit suggests that soils are moderate to well-drained. This rating reduces the potential for the development of high pore pressures usually necessary for the initiation of shallow mass wasting.

Significant earthworks (i.e. extensive cut and fill construction) would likely be necessary to reactivate or develop new mass wasting within the unit. We do not foresee the need for extensive grading within this unit (see operational design plan below).

B) Harvest Related Impacts and Hillslope Sensitivity

The extensive RMZs were designed to provide sediment filtration bands adjacent the watercourses should extensive sediment be generated from the clearcut harvesting. The current level of harvest will retain both canopy closure and slash from the harvested trees potentially increasing the effectiveness of the sediment filtration band.

C) Forestry / Silviculture Plan

The approved clearcut silviculture has been amended to selection with a target retention of 100 square feet of basal area per acre.

Site preparation has been changed to none.

D) Operational Design Plan

THP approved yarding method is cable for the lower elevations (approximately northern half of the unit) and ground based for the upper elevations.

References:

- CGS, 1999, Geologic and Geomorphic Features Related to Landsliding, Freshwater Creek, Humboldt County, California. DMG Open-File Report 99-10. Available via the web at <http://www.conservation.ca.gov/cgs/fwgp/Pages/fresh.aspx>
- Montgomery, D.R. and W.E. Dietrich, 1994. A physically based model for the topographic control on shallow landsliding. Wat. Resour. Res. 30: 1153-1171. For specific details regarding the model used in this evaluation, please see Palco, 2006. Additional information from the model authors is available at the following website: <http://socrates.berkeley.edu/~geomorph/shalstab>
- HRC, 2007, Ortho-photo rectified aerial photographs flown by 3Di West, Eugene Oregon,
- HRC, 2008. Freshwater Creek and Elk River WDR Permit Acreage Enrollment and Compliant Monitoring Program, NCRWQCB R1-2006—0039 and R1-2006-0041, Quality Assurance Project Plan, Version 3.0. Policy document submitted to NCRWQCB dated June 7, 2006.
- HRC, 2001, Freshwater Creek Watershed Analysis, prepared for Pacific Lumber Company (PALCO) dated January 2001, and acquired by Humboldt Redwood Company, LLC in 2008.
- HRC, 2002, (Policy Acquired from The Pacific Lumber Company (PALCO)) Prescriptions Based on Watershed Analysis for Freshwater Creek, California, August 15, 2002.
- HRC, 1999, The Pacific Lumber Company's Habitat Conservation Plan, Vol. 2 Part D, Landscape Assessment of Geomorphic Sensitivity, Public Review Draft.

Brief descriptions of the models used in this evaluation:

SHALSTAB was first described in Dietrich and Montgomery (1994). SHALSTAB is a simple, physically-based model based on the Mohr-Coulomb failure law that can be used to map shallow landslide potential. The model calculates the potential for failure using gridded digital elevation data. The simplicity of the model lies in the formulation of slope stability parameters that allow the model to be run parameter-free using default values suggested by the authors or determined by local measurement. Because the model uses no field measurements of critical characteristics that determine slope stability, the evaluation of potential instability is only an approximation. In applying SHALSTAB for Tier 2 enrollment, HRC has run the model on a 10-m spatial grid using LiDAR elevation data and applied the parameters as suggested by the model authors. HRC's application of the method and parameters is described in HRC (2008).

Mass Wasting Potential (MWP) modeling is a cursory regional assessment that numerically values soil, slope inclination, geology type, and geomorphology with respect to past mass wasting (HRC, 1999). The sums of the values specific to an area are measured against a set ranking system that extends from very low to extreme. The model's intent is to highlight areas of high potential for instability at the planning level. The model's use at the site specific level is limited in that pedogenic soil types are used, not textures, the geologic formations utilized provide one value for all of the incorporated facies, and the model is heavily biased if past mass wasting has occurred or has been mapped as occurring in the area.

Table 1. Proposed 2009 Harvest in Freshwater Creek. Revised 3/13/09

THP Name	THP Number	Unit Number	Silviculture				CC Equivalent	Hazard	
			CC	ROW	CT	SEL		Low	High*
Little 34	08-048	1				22.4	11.2	22.4	0.0
Little 34	08-048	2				25.4	12.7	25.4	0.0
Little 34	08-048	3				30.3	15.2	27.4	10.8
McCready Ridge	07-132	1	0	0	0	15.6	7.8	15.6	0.0
McCready Ridge	07-132	2	0	0	0	15	7.5	13.1	7.3
Around gills	05-077	4		3.1		32	19.1	34.9	0.8
Mid Incline	05-123	1		0.4		24.7	12.8	3.3	83.7
Mid Incline	05-123	2				31.5	15.8	31.5	0.0
Mid Incline	05-123	3				28.3	14.2	23.4	18.8
Fresh 1	04-242	2				36.1	18.1	34.3	6.9
Fresh 1	04-242	3				27.4	13.7	27.1	1.2
Little Fresh	05-176	1				36.3	18.2	30.1	23.8
Little Fresh	05-176	2				20	10.0	12.4	29.2
Little Fresh	05-176	3				5.7	2.9	5.7	0
Little Fresh	05-176	5				39.6	19.8	39.6	0.0
Little Main	05-085	2				29.7	14.9	14.3	59.1
Little Main	05-085	3				25.3	12.7	16	35.7
Little Main	05-085	7				33.3	16.7	19.5	53.0
Whiskey	08-041	1				20.9	10.5	20.6	1.2
Whiskey	08-041	2				23.5	11.8	23.2	1.2
Whiskey	08-041	3				35.4	17.7	29.6	22.4
Whiskey	08-041	4				32	16.0	32	0.0
Whiskey	08-041	5				11.3	5.7	9.5	6.9
Total							304.4		

*The acres represented here have been converted to High Hazard Acres by multiplying by 3.8404.

Highlight indicates a THP and Specific Unit to be enrolled prior to establishing an enforceable Zero Discharge Monitoring Plan (Tier I). Weighted Acreage Totals are listed below to demonstrate compliance with the Staff Landslide Model limit of 144 Harvest Acres in Freshwater Creek. Other THP Units will be enrolled after approval of the aforementioned Monitoring Plan

No Highlight Indicates a THP and Specific Unit to be enrolled after establishment of an enforceable Zero Discharge Monitoring Plan (Tier II).

Indicates tier 1 for ROW and tier 2 for remainder of the unit

Total Clear Cut Equivalent Acres enrolled or submitted for enrollment	289.1
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Table 2. Summary of THPs to enrolled prior to establishment of Zero Discharge Monitoring Plan for Freshwater Creek

THP Number	Unit Number	Harvest Acres	Hazard	
			Low	High*
08-048	1	22.4	22.4	0.0
05-077	4	3.1	3.1	0.0
05-176	5	39.6	39.6	0.0
08-041	1	20.9	20.6	1.2
08-041	2	23.5	23.2	1.2
08-041	4	32.0	32	0.0
Totals		141.5	143.3	

Table 3. Summary of THPs by Yarding System and Site Preparation for Freshwater Creek

THP Name	THP Number	Unit Number	Yarding System			Site Preparation	
			Ground Based	Yarder	Helicopter	Mechanical	Broadcast
Little 34	08-048	1	3.9	18.5			
Little 34	08-048	2	8.2	17.2			
Little 34	08-048	3	6.9	23.4			
McCready Ridge	07-132	1	0	15.6			
McCready Ridge	07-132	2	10.1	4.9			
Around gills	05-077	4	19.7	15.4			
Mid Incline	05-123	1	0.4	24.7			
Mid Incline	05-123	2	11.5	23			
Mid Incline	05-123	3	14.1	14.2			
Fresh 1	04-242	2	10.9	25.2			
Fresh 1	04-242	3	0	27.4			
Little Fresh	05-176	1	0	36.3			
Little Fresh	05-176	2	7.3	12.7			
Little Fresh	05-176	3	0	5.7			
Little Fresh	05-176	5	0	39.6			
Little Main	05-085	2	0	29.7			
Little Main	05-085	3	0	25.3			
Little Main	05-085	7	0	33.3			
Whiskey	08-041	1	20.9	0			
Whiskey	08-041	2	11.7	11.8			
Whiskey	08-041	3	9.3	26.1			
Whiskey	08-041	4	19	13			
Whiskey	08-041	5	0	11.3			

Humboldt Redwood Company LLC

Erosion Control Plan (ECP) for the “Around Gills” THP 1-05-077HUM

Updated ECP – for purpose of identifying **Tier 2** erosion control sites specific to unit 4 (2009 enrollment requests); Unit 4 has no erosion control sites located on the spur road system leading specifically to This units.

This plan is being included in the THP to partially meet the requirements of the North Coast Regional Water Quality Control Board Watershed-wide Discharge Requirements. (**WWDRs**)

All operational portions of this ECP that are to be enforced through the Forest Practice Rules have been included in Section II of the THP.

Version **20080819**

Humboldt Redwood Company LLC Erosion Control Plan (ECP)

This document addresses the requirements of the California Regional Water Quality Control Board, North Coast Region Order No. R1-2006-0041 (Freshwater Creek) for an Erosion Control Plan (ECP) related to timber harvest activities on Non-Federal lands in the North Coast Region (Sec. III D2 and D3). The responsible party for this ECP is Humboldt Redwood Company LLC, P.O. Box 712 Scotia, CA 95565 (707) 764-2330.

This ECP is submitted for: THP Name: Around Gills 1-05-077HUM

Contact Person: Jon Woessner Phone: (707) 764-4376

The landowner is committed to a wide variety of measures to prevent and minimize the discharge or threatened discharge of sediment from controllable sediment discharge sources as part of this project into the waters of the state in violation of applicable water quality requirements. Prevention and Minimization of Controllable Sediment Discharge Sources associated with this project are identified in the *Controllable Sediment Sources* table. The specific conditions of sediment discharge sources and a summary of prevention and minimization measures (Section I) are identified in the table. General prevention and minimization measures for the project (Section II) are incorporated in the ECP by reference.

The RPF and/or the RPF Designee have conducted an inventory of potential "controllable sediment discharge sources" within the project area. As defined in California Regional Water Quality Control Board Order No. R1-2006-0041 (Freshwater Creek).

"Controllable sediment discharge source" means sites or locations, both existing and those created by proposed timber harvest activities, within the Project area that meet all the following conditions:

1. is discharging or has the potential to discharge sediment to waters of the state in violation of applicable water quality requirements or other provisions of these WWDRs,
2. was caused or affected by human activity, and
3. may feasibly and reasonably respond to prevention."

Upon guidance of the North Coast Regional Water Quality Control Board (NCRWQCB) staff, discharge from the source must be likely to occur during the life of the Timber Harvesting Plan (THP) and WWDR. (Holly Lundborg, personal communication)

The inventory method consisted of an appurtenant road survey, aerial photos and ground assessments of the harvest units, and a complete ground assessment of all watercourses and associated stream protection zones.

The schedule for implementing the prevention and minimization management measures for the controllable sediment sources will be consistent with the duration of the THP. These measures will be implemented in accordance with the priority level assigned to each site. High priority sites will be addressed first with low priority sites to follow. Work at all sites will be accomplished prior to THP expiration. The general prevention and minimization measures will be implemented concurrent with operations.

I. Inventory and Treatment of Controllable Sediment Sources

All controllable sediment sources are listed in the attached "Erosion Control Plan" table. These sources have been assigned a treatment priority of low, medium or high based on: 1) potential for significant sediment delivery to a Class I, II or III channel; 2) treatment immediacy (a subjective combination of event probability and sediment delivery); and 3) treatment cost-effectiveness.







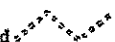




The Prioritization for implementing prevention and minimization measures for road-related and non road-related controllable sediment sources is based upon guidance provided in Order No. R1-2006-0041 (Freshwater Creek) Highest priority is assigned to the largest sediment discharge sources that discharge to waters that support domestic water supplies or fish. The landowner's prioritization method considers this guidance, and combines it with consideration for accessibility and level of imminent risk of significant sediment discharge. Sources that receive a high priority rating will be treated by a date certain as noted in the Controllable Sediment Sources table. Sources that receive a low or medium rating are determined to have a low to moderate risk of imminent discharge and will be treated prior to completion of the THP, or as otherwise indicated.

Non-road related controllable sediment sources can include skid road crossings, yarding furrow, skid road in watercourse, perched skid road fill, skid road rutting, landslide, layouts, railroad grade, incline, etc.

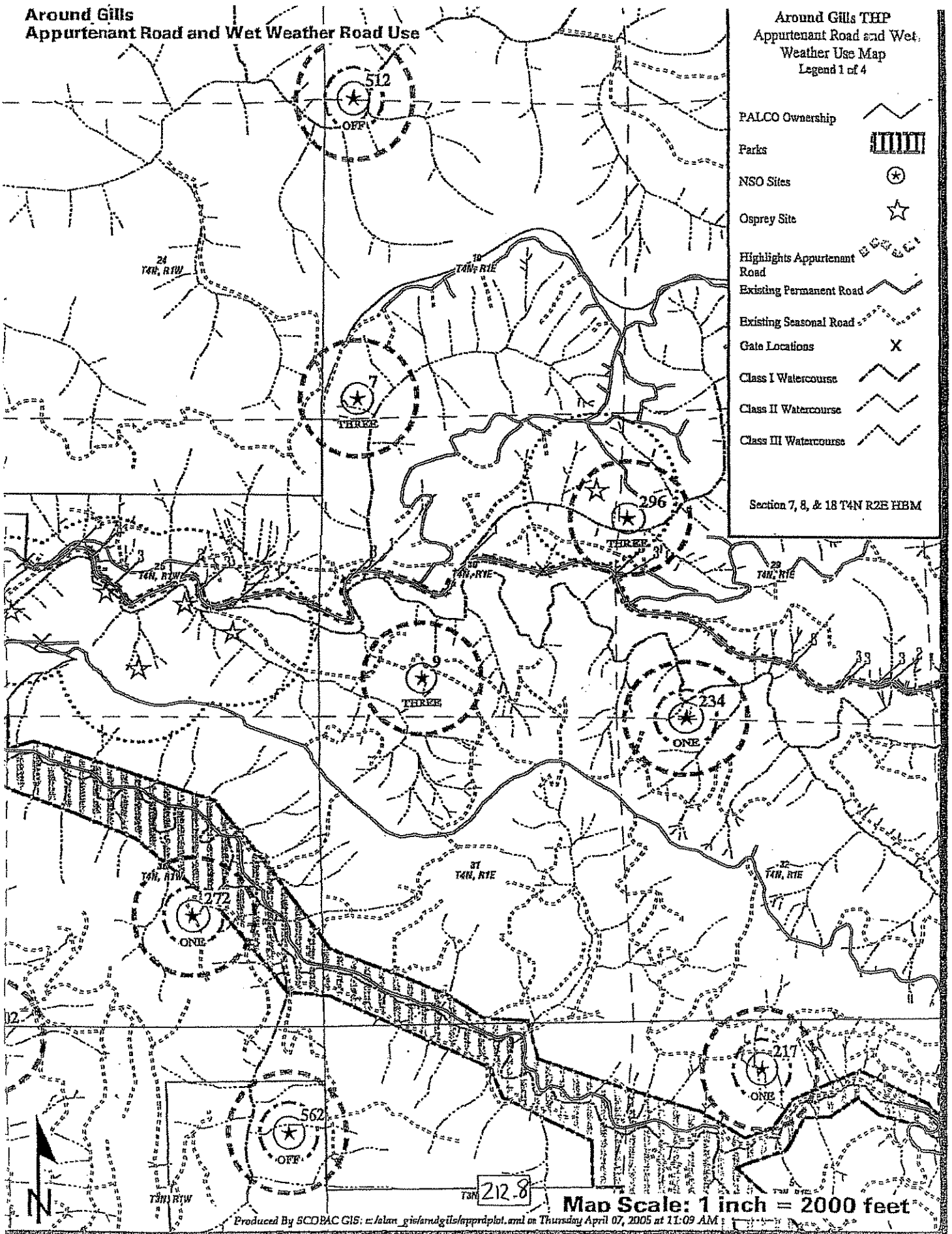
Information specific to Controllable Sediment Discharge Sources is listed in the Controllable Sediment Sources Table, below. An explanation of information provided in that table is provided below.

**Around Gills
Appurtenant Road and Wet Weather Road Use**

**Around Gills THP
Appurtenant Road and Wet
Weather Use Map
Legend 1 of 4**

- PALCO Ownership 
- Parks 
- NSO Sites 
- Osprey Site 
- Highlights Appurtenant Road 
- Existing Permanent Road 
- Existing Seasonal Road 
- Gate Locations 
- Class I Watercourse 
- Class II Watercourse 
- Class III Watercourse 

Section 7, 8, & 18 T4N R2E HBM



Map Scale: 1 inch = 2000 feet

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AROUND GILLS
Appurtenant Road and Wet Weather Road Use

Around Gills THP
 Appurtenant Road and Wet
 Weather Use Map
 Legend 2 of 4

PALCO Ownership

NSO Sites

Osprey Site

Highlights Appurtenant
 Road

Existing Permanent Road

Existing Seasonal Road

Power Line

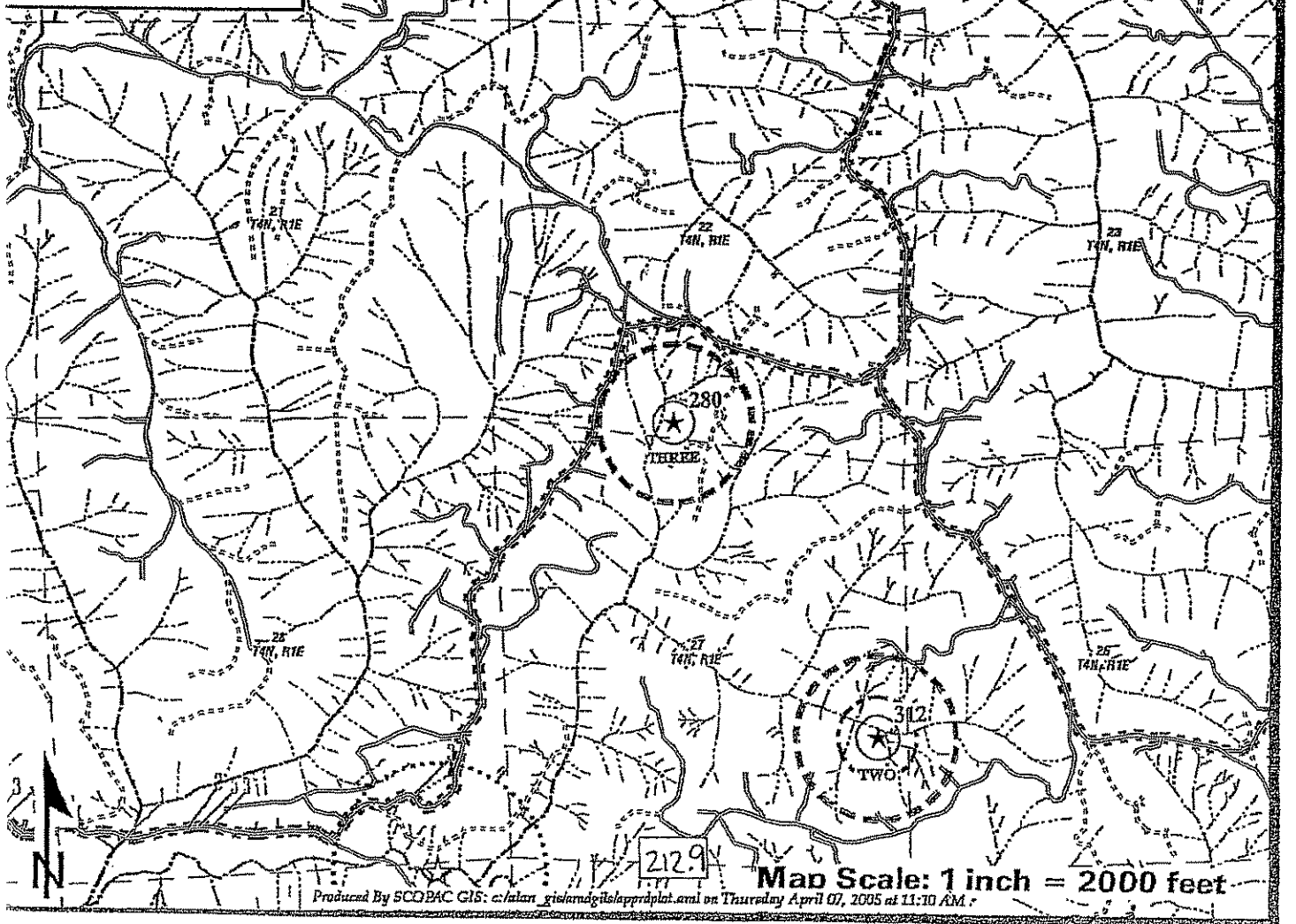
Gate Locations

Class I Watercourse

Class II Watercourse

Class III Watercourse

Section 7, 8, & 18 T4N R2E HBM



ONE

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74N, 92E

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THREE

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74N. 82

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COAST AREA OFFICE
RESOURCE MANAGEMENT

PART OF PLAN

THP Boundary

PALCO Ownership

NSO Sites

Highlights Appurtenant Road

Existing Permanent Road

Existing Seasonal Road -

Proposed Seasonal Road

Gate Locations

Class I Watercourse

Class II Watercourse

Class III Watercourse

Section 7, 8, & 18 T4N R2E HBM

Revised
6-20-05













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Map Scale: 1 inch = 2000 feet

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Around Gills THP Appurtenant Road and Wet Weather Road Use

Around Gills THP Appurtenant Road and Wet Weather Use Map Legend 4 of 4

- THP Boundary 
- PALCO Ownership 
- NSO Sites 
- Highlights Appurtenant Road 
- Existing Permanent Road 
- Existing Seasonal Road 
- Proposed Seasonal Road 
- Power Line 
- Gate Locations 
- Class I Watercourse 
- Class II Watercourse 
- Class III Watercourse 

Section 7, 8, & 18 T4N R2E HBM

PART OF PLAN

RECEIVED

JUN 22 2005

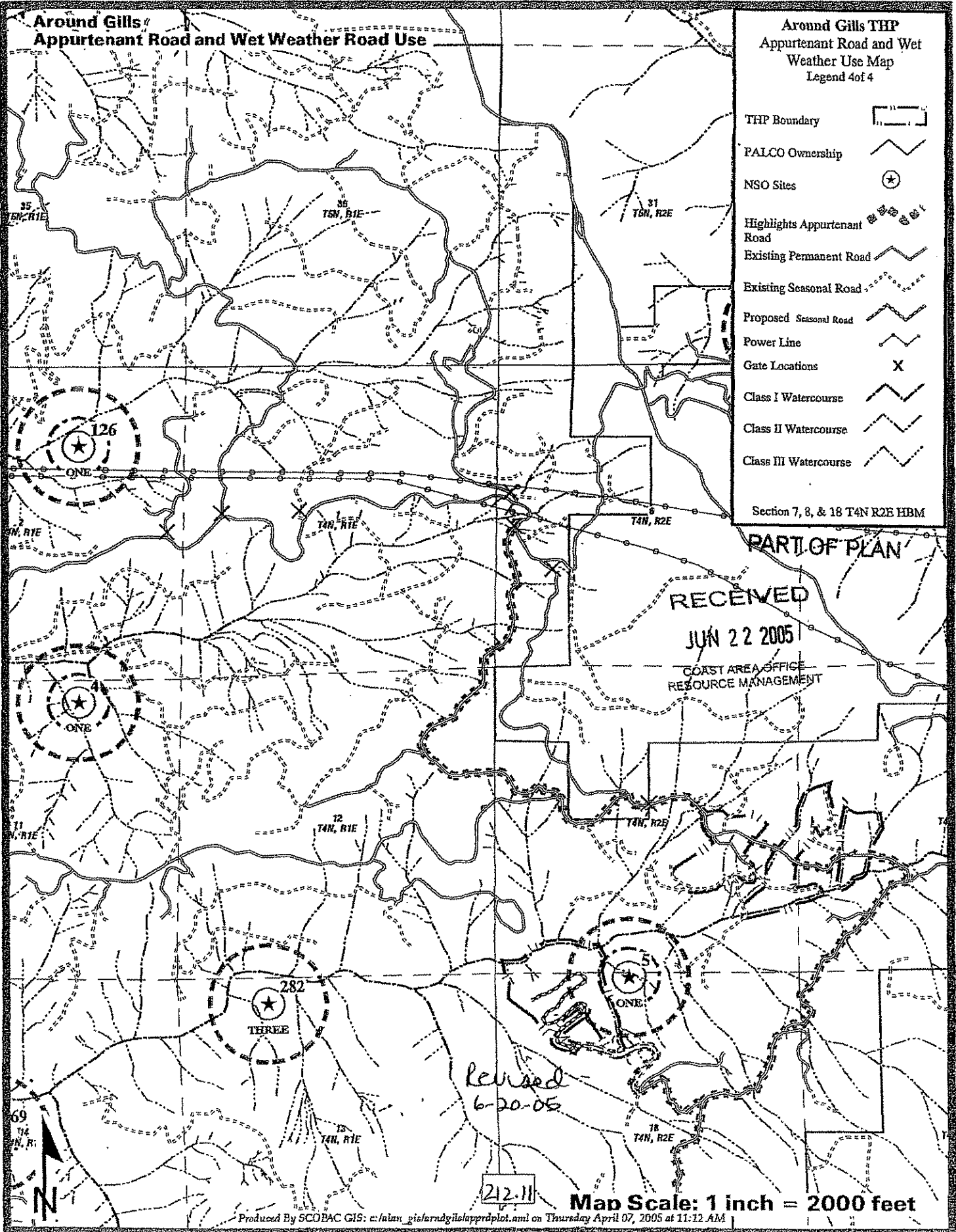
COAST AREA OFFICE
RESOURCE MANAGEMENT

Revised
6-20-05

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Map Scale: 1 inch = 2000 feet

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Around Gills

COAST AREA OFFICE
RESOURCE MANAGEMENT

JUN 22 2005

RECEIVED

PART OF PLAN

Unit 4

Unit 3

Unit 2

Unit 1

59

Revised

6-20-05

Produced By SCS/BAC GIS: c:\data\gill\aroundgills\photo.mxd on Thursday, April 07, 2005 at 11:34 AM

Map Scale: 1 inch = 660 feet

Around Gills THP
THP Unit Map

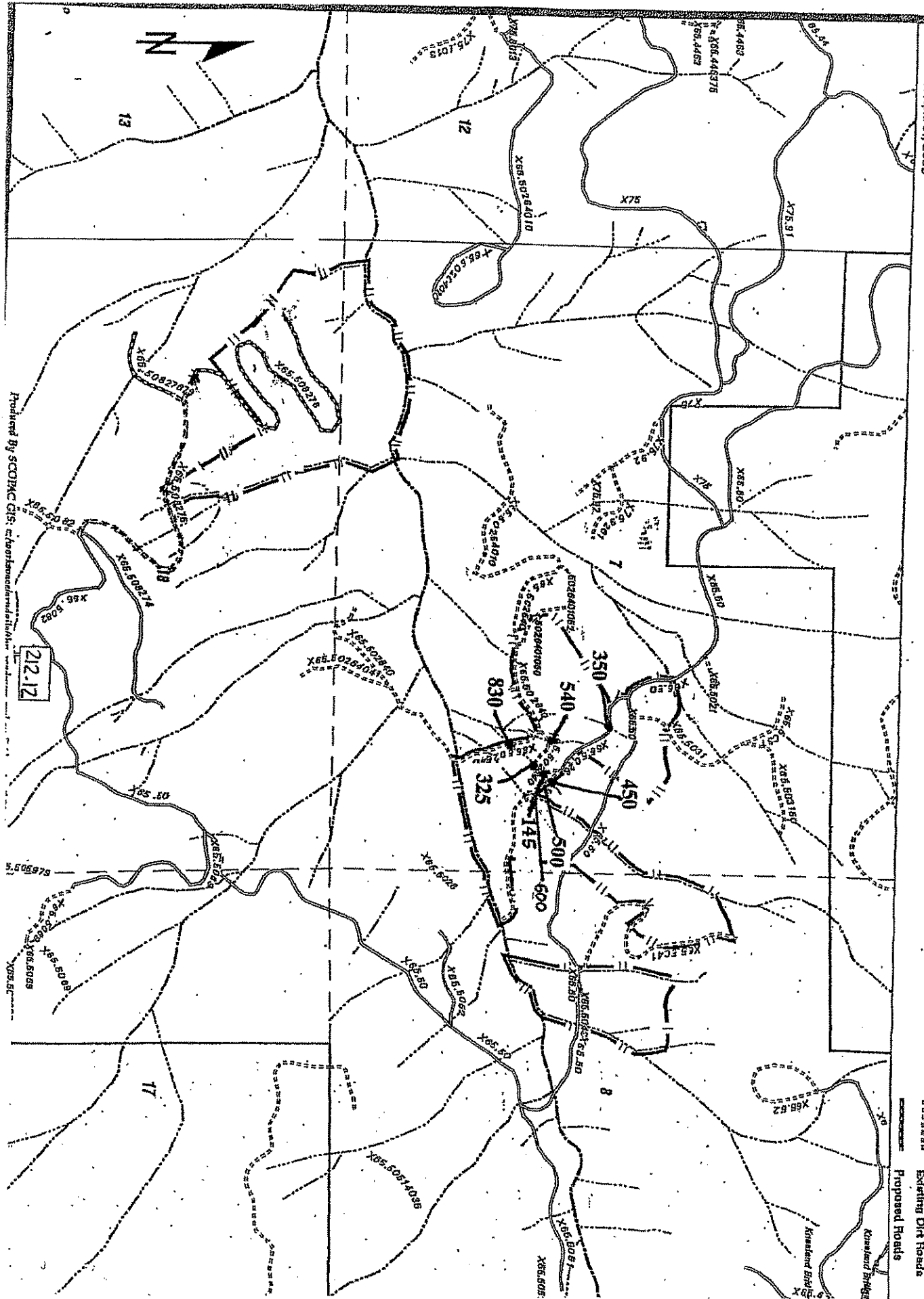
Legend

<p>THP Boundary</p> <p>PALCO Ownership</p> <p>Existing Permanent Road</p> <p>Existing Seasonal Road</p> <p>Proposed Seasonal Road</p> <p>Class I Watercourse</p> <p>Class II Watercourse</p> <p>Class III Watercourse</p> <p>Wet Area</p> <p>Section 7, 8, & 18 T4N R2E HBM</p>	<p> THP Boundary</p> <p> PALCO Ownership</p> <p> Existing Permanent Road</p> <p> Existing Seasonal Road</p> <p> Proposed Seasonal Road</p> <p> Class I Watercourse</p> <p> Class II Watercourse</p> <p> Class III Watercourse</p> <p> Wet Area</p>
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Around Gills

ECP Locations

Date as of April 01, 2005



II. General Prevention and Minimization Measures for Controllable Sediment Discharge

In addition to the site specific measures detailed above, the general measures proposed in this project, either as required by another State or Federal regulating agency, or as a matter of Humboldt Redwood Company policy, will prevent or minimize future sediment delivery. These measures include, but are not limited to measures incorporated in the THP Section Items as follows:

THP Section II:

- Item 14 – Describes silvicultural prescriptions
 - (i) Site Preparation – Disclosure of selected site preparation treatments and mitigation measures
- Item 16 – Harvesting Practices – Describes yarding systems, equipment utilized, equipment limitations, and drainage facility installation timing
 - Inclusive through (m) – equipment use limitations and mitigation
- Item 18 – Soil Stabilization – waterbreak requirements, mitigation to minimize soil disturbance and sediment transport
- Item 20 – Ground Based Equipment Use Location
- Item 21 – Ground Based Equipment Use in Sensitive Areas – locations, descriptions of operations, limitations and mitigation measures
- Item 22 – Alternative Practices to Harvesting and Erosion Control
- Item 23 – Winter Operations – Provides descriptions of limitations and mitigation measures required during winter period operations and Winter Operating Plan
- Item 24 – Roads and Landings – Describes road and landing construction and re-construction operations, limitations, drainage relief structure installation, mitigation measures, road maintenance, inspections and wet weather road use restrictions
- Item 25 – Site Specific Measures to Reduce Adverse Impacts and Special Instructions to the LTO
- Item 26 – Watercourse and Lake Protection (WLPZ)
- Item 27 – "In Lieu" WLPZ Practice(s)
- Item 28 – Downstream Water Users Notification and Domestic Water Supply Protection Description of protection measures
- Item 29 – Sensitive Watershed – Identifies whether the plan is located in a designated sensitive watershed and mitigation measures
- Item 29 – 1 Hillslope Management (HCP 6.3.3.7) – Describes HCP hillslope management measures required as per watershed analysis

THP Section V:

- Sediment Reduction from Roads and THP Sediment Production--Including Table 1 – "Sediment Delivery for Units and Roads for this THP," references, letter regarding Road related sediment assessment for this THP with the calculations of deliverable net cubic yards of sediment, calculations and PWA information related to the THP project area when available

Maps attached:

- Appurtenant Road and Wet Weather Road Use map
- Road Construction Locations/ECP Site Locator Map

III Inspection Plan and Reporting Requirements

A. Inspection Plan

The Inspection Plan is designed to ensure that all required management measures are installed and functioning prior to rainfall events; that the management measures are effective in controlling sediment discharge sources throughout the winter period; and that no new controllable sediment discharge sources developed.

B. Qualified and trained professionals will conduct all specified inspections of the project site to identify areas causing or contributing to a violation of the applicable water quality requirements or other provisions of these WWDRs. The responsible party for inspection and reporting is **Jon Woessner (707) 764-4376**.

C. No inspections are required in Project Areas where Timber Harvest Activities have not yet commenced.

D. Project Areas where Timber Harvest Activities have commenced and no winter period Timber Harvest Activities have occurred inspections will be conducted each year and throughout the duration of the Project while Timber Harvest Activities occur.

a. The Project is covered under WWDRs and the following inspection requirements will begin at the startup of timber harvest activities within the Project area:

- i. By November 15 to assure Project Areas are secure for the winter period;
- ii. Once following ten (10) inches of cumulative rainfall commencing on November 15 and prior to March 1, as worker safety and access allows; and
- iii. After April 1 and before June 15 to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment discharges sources have developed.

b. Project Areas with Winter Period Timber Harvest Activities will conduct inspections of such Project Areas while Timber Harvesting Activities occur and the Project is covered under the WWDRs as follows:

- i. Immediately following cessation of winter period Timber Harvest Activities to assure areas with winter Timber Harvest Activities are secure for the winter;
- ii. Once following ten (10) inches of cumulative rainfall commencing on November 15 and prior to March 1, as worker safety and access allows; and
- iii. After April 1 and before June 15 to assess the effectiveness of management measures designed to address controllable sediment discharges and to determine if any new controllable sediment discharges sources have developed.

c. Inspection reports will identify where management measures have been ineffective and when repairs and design changes will be implemented to correct management measure failures.

d. After completing the required inspections, and when it has been determined new controllable sediment discharges sources have developed, the ECP, implementation schedule, and inspection plan will be updated, if required, consistent with the WWDRs and submit the updated documents to the Regional Water Board to maintain coverage under the WWDRs. If the approved amendment is found to be out of compliance with the WWDRs, the Project will be amended to be consistent with the provisions of the WWDR within 30 days, or coverage under the WWDRs will be terminated. The Project will then be required to seek Project coverage under an individual WDR.

e. Equipment, materials, and workers will be available for rapid response to failures and emergencies, implement, as feasible, emergency management measures depending upon field conditions and worker safety for access.

D. If during the inspection or during the course of conducting timber harvest activities, a violation of an applicable water quality requirement or conditions of WWDRs is discovered, the following procedures will be followed:

a. When it has been determined that discharges are causing or contributing to a violation or an exceedence of an applicable water quality requirement or a violation of a WWDR prohibition:

- i. Corrective measures will be implemented immediately following the discovery that applicable water quality requirements were exceeded or a prohibition violated, followed by notification to the Regional Board by telephone as soon as possible but no later than 48 hours after the discharge has been discovered. The notification will be followed by a report within 14 days to the Regional Board, unless otherwise directed by the Executive Officer, that includes:

1. the date the violation was discovered;

2. the name and title of the person(s) discovering the violation;
3. a map showing the location of the violation site;
4. a description of recent weather conditions prior to discovering the violation;
5. the nature and cause of the water quality requirement violation or exceedence or WWDR prohibition violation;
6. photos of the site characterizing the violation;
7. the management measure(s) currently being implemented;
8. any maintenance or repair of management measures;
9. any additional management measures which will be implemented to prevent or reduce discharges that are causing or contributing to the violation or exceedence of applicable water quality requirements or WWDR prohibition violation; and,
10. The signature and title of the person preparing the report.
11. The report will include an implementation schedule for corrective actions and describe the actions taken to reduce the discharges causing or contributing to violation or exceedence of applicable water quality requirements or WWDR prohibition violation.

E. For other inspections conducted where violations are not discovered, a summary report will be submitted to Executive Officer by June 30th for each year of coverage under the WWDRs or upon termination of coverage. The summary report, at a minimum will include the date of inspections, the inspector's name, the location of each inspection, and the title and name of the person submitting the summary report.

If helicopter operations are proposed for this project, please find attached a Columbia Helicopters, Inc. (CHI) Fuel Spill Prevention and Cleanup Plan For Columbia Helicopters Field Operations.

Explanation of Information Included in the Controllable Sediment Sources Table	
Column Heading	Explanation
Site No.	Site identification unique to project area
Site Type	A description of the existing site. Example: Humboldt Crossing; Culvert Crossing; Unstable Fill; Unstable Cut Slope; Diversion Potential.
Estimate of Potential Erosion	A quantitative estimate of the volume, in cubic yards, of the total amount of potential erosion/displacement of soil that will occur should the site entirely fail. The landowner often uses a methodology developed by Pacific Watershed Associates to estimate erosion, which assumes 100% delivery of calculated volume—use of this method for individual sites is noted in Site Description.
Potential Sediment Delivery Percent	An estimate of the relative potential for sediment delivery expressed as a percent of the total amount of Potential Erosion that will be discharged to waters of the State should the site fail.
Sediment Prevention Volume	The volume, in cubic yards, of sediment discharge estimated to be prevented by implementation of the prescribed treatment. Volume represents the Estimate of Potential Erosion multiplied by the Potential Sediment Delivery Percent.
Priority for Treatment	Treatment priority reflects the immediacy of sediment discharge and the relative risk to the receptor, should the site fail. Low priority sites are ones that will not likely deliver significant amounts of sediment during the life of the WWDR permit, and will be treated prior to filing of THP work completion report, which does not exceed 5-years following THP approval date. Medium or high priority sites indicate potentially imminent discharge, and the timing of treatment is indicted in Implementation Schedule column.
Implementation Schedule	Indicates the timing of implementing the prevention and minimization measures listed in the Treatment column.
Site Description	Provides sufficient information that describes the existing condition of the site and factors that inform the chosen treatment methods and implementation schedule. This information will include a description of how the existing condition of the site (ie. stable or unstable) will be affected by different storm events, and whether sediment discharge is imminent. For example, an unstable site could easily discharge significant amounts of sediment in a small storm, thus the treatment priority should be higher. Conversely, a stable site that may take one or more very large storms to trigger discharge could be lower treatment priority. If PWA method is used to calculate erosion/delivery volumes, it will noted here.
Treatment	Sediment discharge prevention and minimization measures that will be implemented at the site, including treatment specifications if necessary.

Attachments:

- ECP Table

Erosion Control Plan

Site	Site Type	Est. Potential Erosion (Cu.Yards)	Est. Potential Delivery (Cu.Yards & %)	Priority for Treatment	Implementation Schedule	Site Description	Treatment
Project Around Gills							
RD: X65.5026 STATION: 350 SITE: C1 WOID: 1113318637 SEDID: 4N2E07G501 REPAIRED: YES	Crossing	42	3 7%	Low	Prior to THP Final Completion.	Critical dip.	Construct critical dip over existing culvert. Spread excavated material along roadbed.
RD: X65.5026 STATION: 450 SITE: C2 WOID: -1810617430 SEDID: 4N2E07G601 REPAIRED: YES	Temporary Crossing	23	23 100%	Low	Prior to THP Final Completion.	Rock ford and rock outfall.	Install rock ford and rock outfall channel to site 145 on the X65.502640 Road.
RD: X65.5026 STATION: 500 SITE: C3 WOID: 1061578979 SEDID: 4N2E07G604 REPAIRED: YES	Temporary Crossing	31	31 100%	Low	Prior to THP Final Completion.	Rocked ford.	Install rock ford and rock outfall channel to the X65.502640 Road.
RD: X65.502640 STATION: 145 SITE: C4 WOID: 1801216488 SEDID: 4N2E07G605 REPAIRED: YES	Gully	64	64 100%	Low	Prior to THP Final Completion.	Rocked ford and/or culvert.	Construct rock channels from site 450 and 500 on the X65.5026 Road to join watercourses at this site. Install 24" culvert or a rocked ford.
RD: X65.502640 STATION: 325 SITE: C5 WOID: -785144375 SEDID: 4N2E07G602 REPAIRED: YES	Perched Fill	33	33 100%	Low	Prior to THP Final Completion.	Culvert.	Install 24" culvert and/or rock ford. Install rock outfall. See diagram.
RD: X65.502640 STATION: 540 SITE: C6 WOID: 1917237846 SEDID: 4N2E07G606 REPAIRED: YES	Perched Fill	75	75 100%	Low	Prior to THP Final Completion.	Critical dip.	Excavate outfall fill material from channel below culvert outlet. Construct critical dip.
RD: X65.502640 STATION: 830 SITE: C7 WOID: 156763423 SEDID: 4N2E07G603 REPAIRED: YES	Temporary Crossing	39	39 100%	Low	Prior to THP Final Completion.	Rocked ford and/or culvert.	Install 24" culvert and/or rock ford.
Total Estimated Yards		307	268				

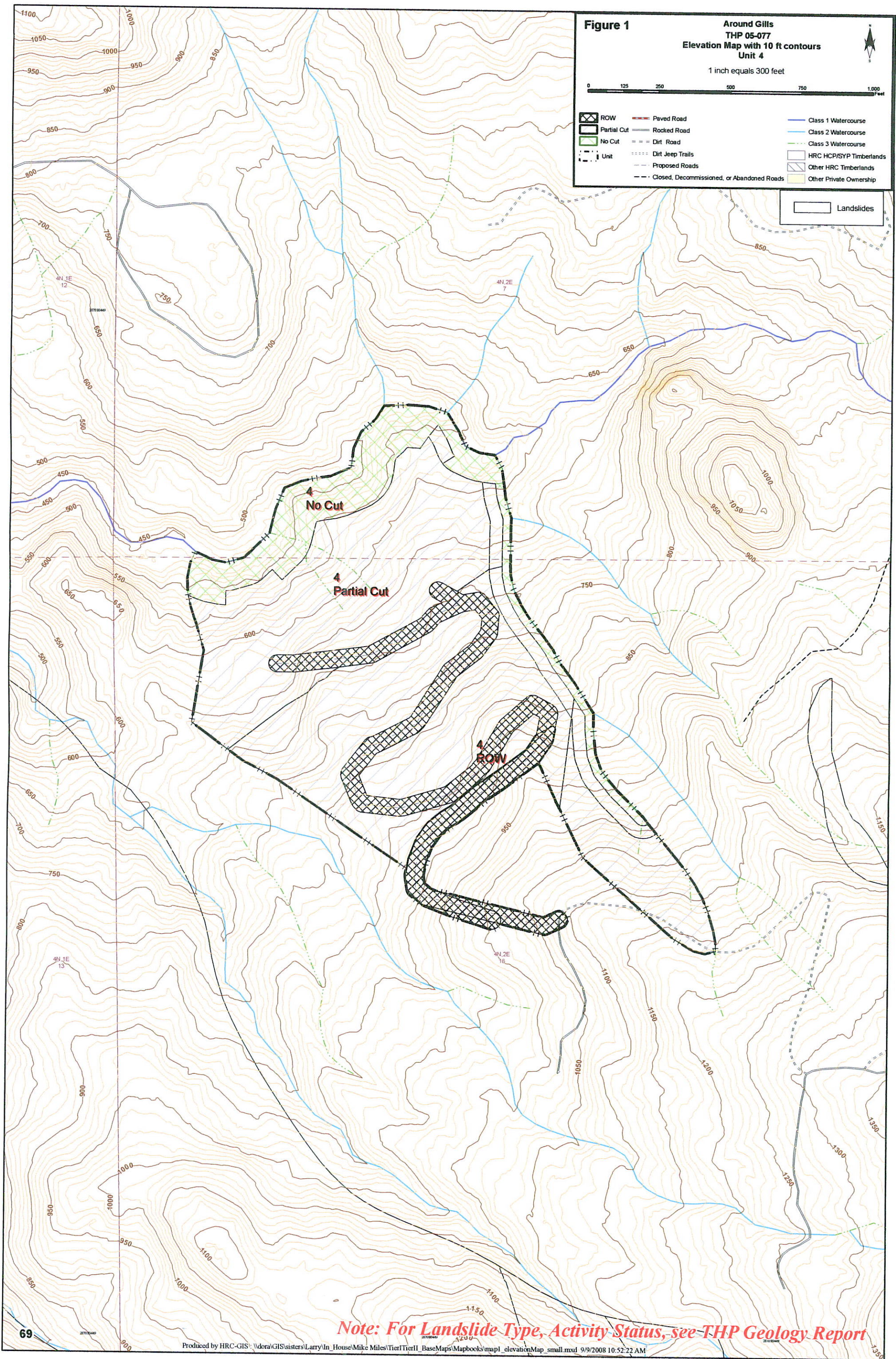


Figure 1

Around Gills
THP 05-077
Elevation Map with 10 ft contours
Unit 4

1 inch equals 300 feet

0 125 250 500 750 1,000 Feet

Legend:

- ROW
- Partial Cut
- No Cut
- Unit
- Paved Road
- Rocked Road
- Dirt Road
- Dirt Jeep Trails
- Proposed Roads
- Closed, Decommissioned, or Abandoned Roads
- Class 1 Watercourse
- Class 2 Watercourse
- Class 3 Watercourse
- HRC HCP/SYP Timberlands
- Other HRC Timberlands
- Other Private Ownership
- Landslides

Note: For Landslide Type, Activity Status, see THP Geology Report

Figure 2

Around Gills
TWP 05-077
Shalstab 10 mts grid / Slope Class Map
Unit 4

1 inch equals 500 feet



- Class 1 Watercourse
- Class 2 Watercourse
- Class 3 Watercourse
- ROW
- Partial Cut
- No Cut
- HRC HCP/STP Timberlands
- Other HRC Timberlands
- Other Private Ownership

- Paved Road
- Rocked Road
- Dirt Road
- Dirt Jeep Trails
- Proposed Roads
- Closed, Decommissioned, or Abandoned Roads
- Unit

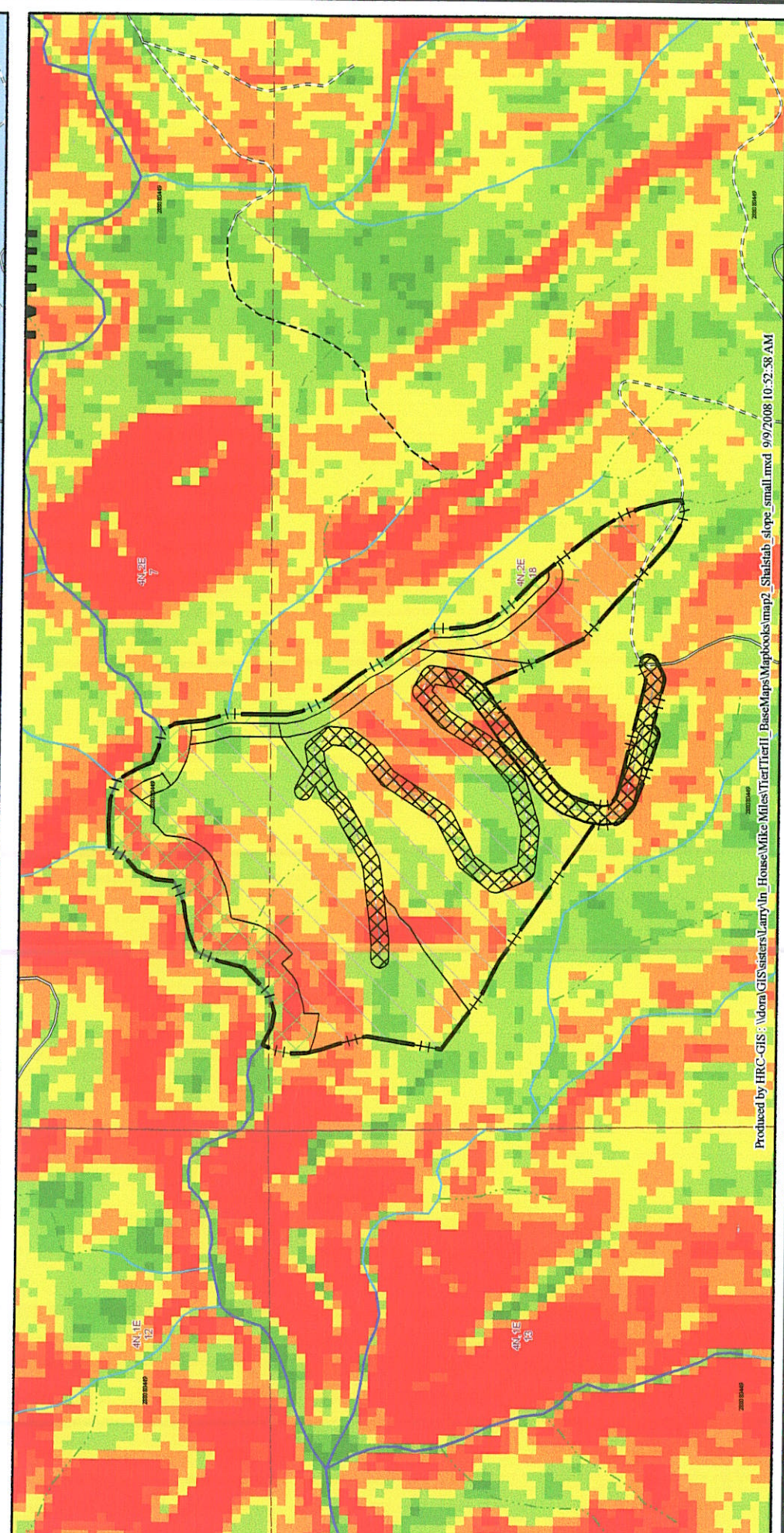
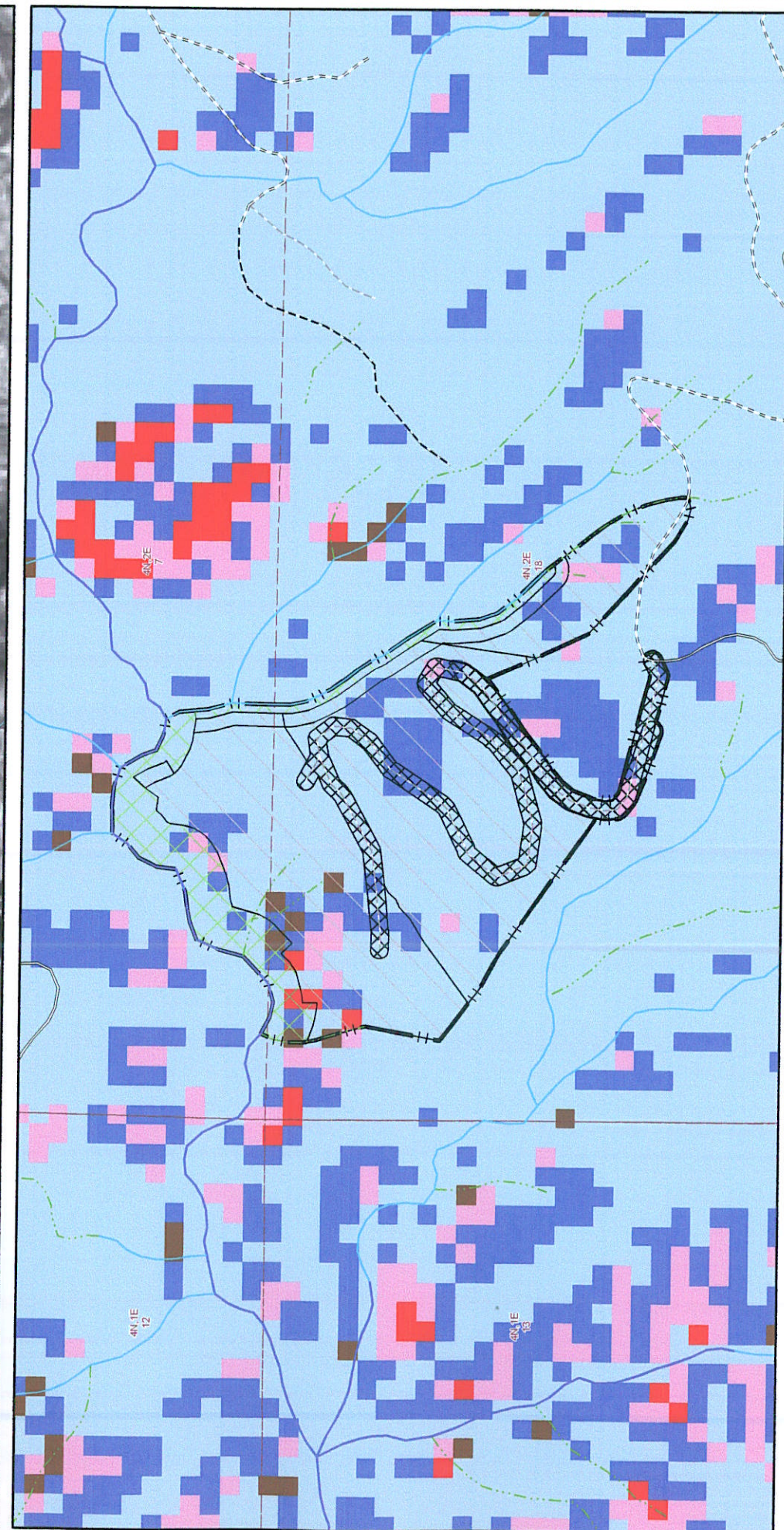
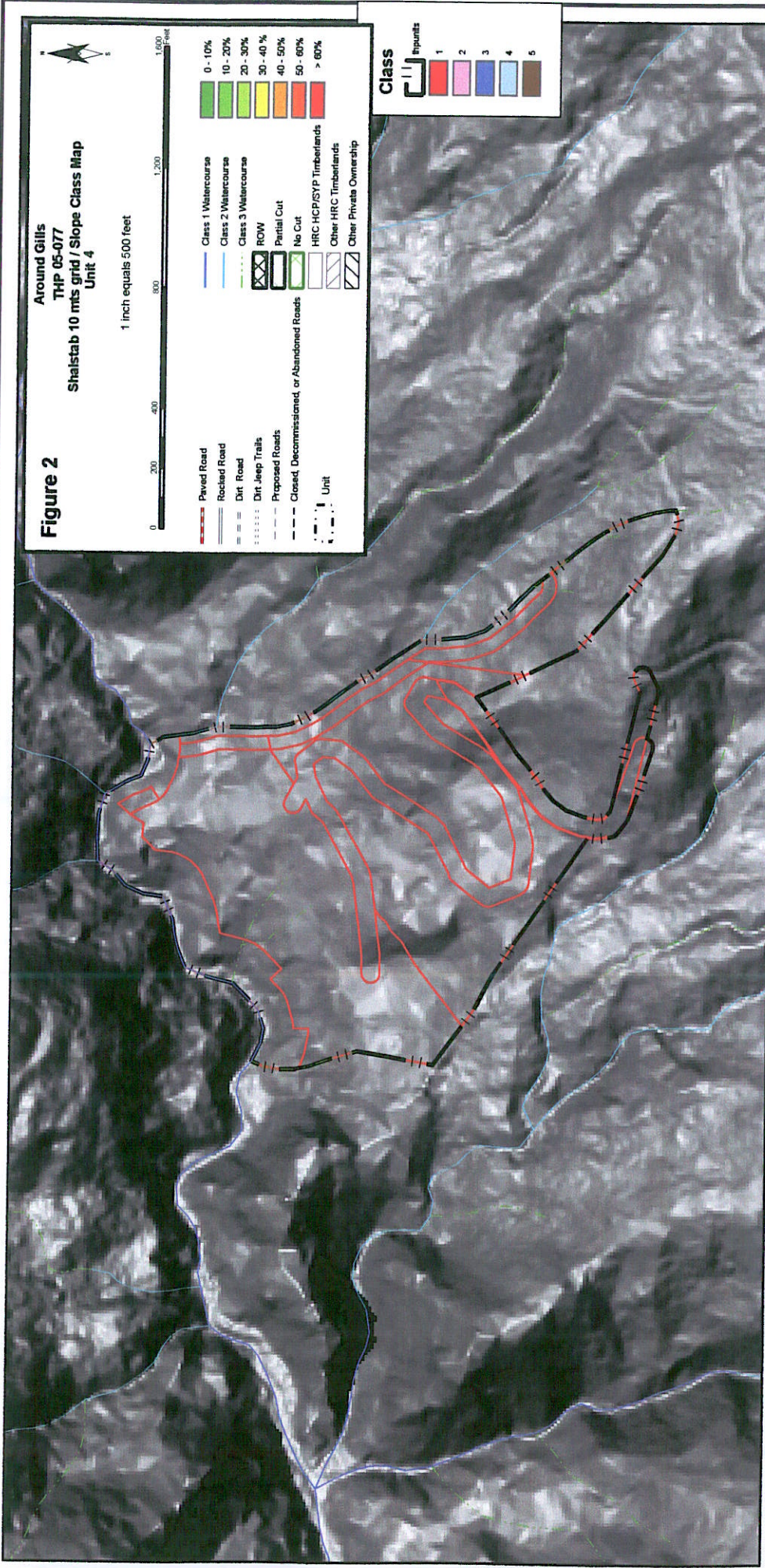
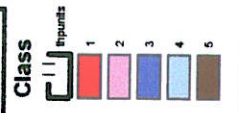
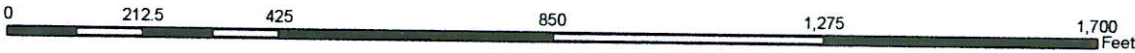


Figure 3

Around Gills
THP 05-077
CGS Map Unit4

1 inch equals 300 feet



- | | | | |
|-------------------------|-------------|--|---------------------|
| HRC HCP/SYP Timberlands | ROW | Paved Road | Class 1 Watercourse |
| Other HRC Timberlands | Partial Cut | Rocked Road | Class 2 Watercourse |
| Other Private Ownership | No Cut | Dirt Road | Class 3 Watercourse |
| | Unit | Dirt Jeep Trails | |
| | | Proposed Roads | |
| | | Closed, Decommissioned, or Abandoned Roads | |

- Legend**
- thpunits
- CGS Freshwater structure**
- FEATURE**
- anticline, approx. loc.
 - fault, approx. loc.
 - fault, concealed
 - thrust fault, approx. loc.
 - thrust fault, concealed
 - thrust fault, queried
 - lineament
- CGS Freshwater lines**
- TYPE**
- ig
 - it
- CGS Freshwater LS**
- INIT_TYPE, ACTIVITY**
- df, h
 - ds, d
 - ds, h
 - ef, d
 - ef, h
 - rs, d
 - rs, h
 - dss,
- CGS Freshwater symbols**
- <all other values>
- ACTIVITY**
- ah
 - d
- CGS Freshwater geology**
- UNIT**
- KJfm
 - KJfs
 - Q
 - Qfa?
 - Qrt
 - Twl
 - Twl?
 - Twu
 - Ty
 - Ty?
 - u
- CGS Freshwater contacts**
- CONTACT**
- approximately located
 - certain location
 - queried location

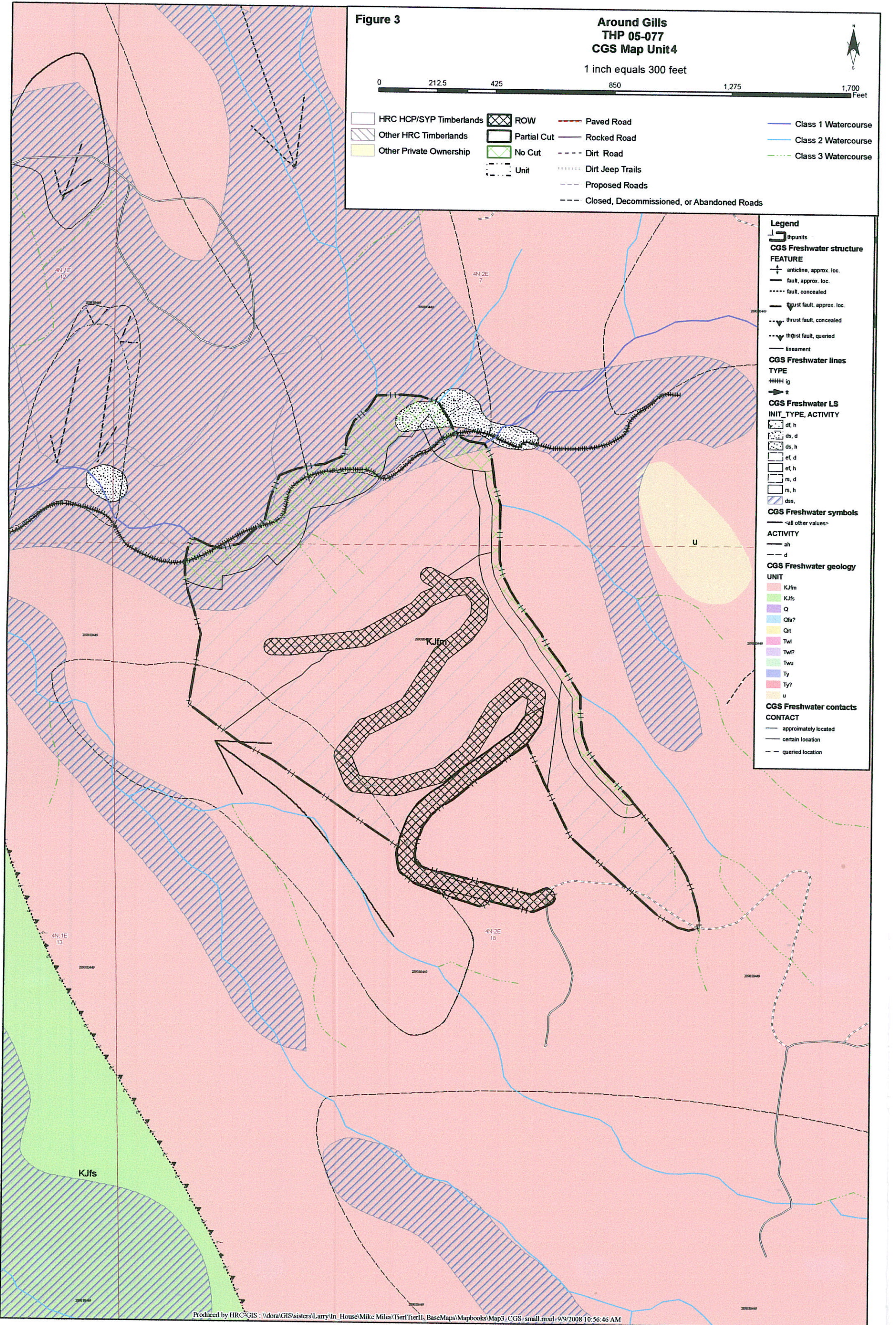


Figure 4

Around Gills
THP 05-077
Mass Wasting Potential
Unit 4

1 inch equals 300 feet

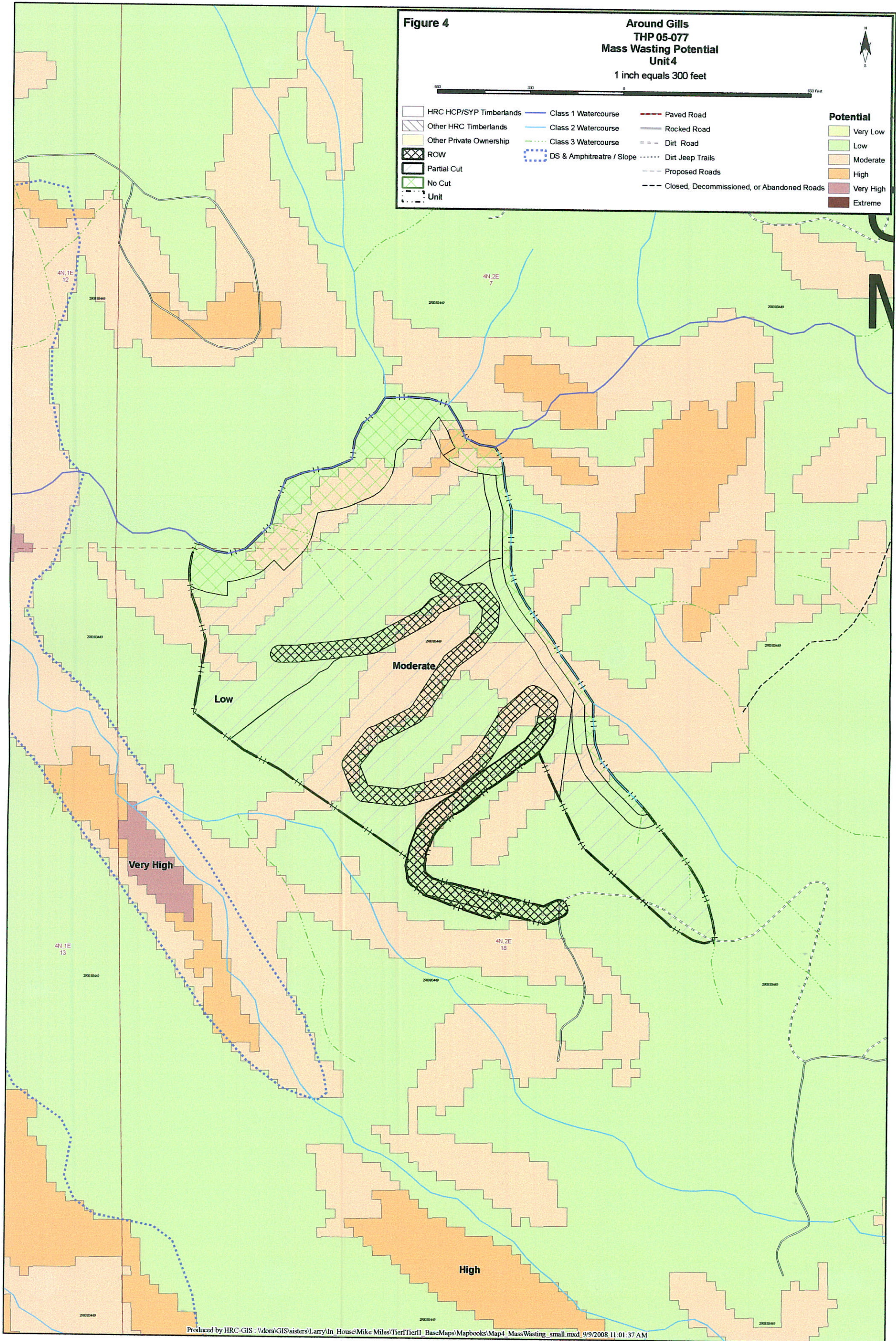
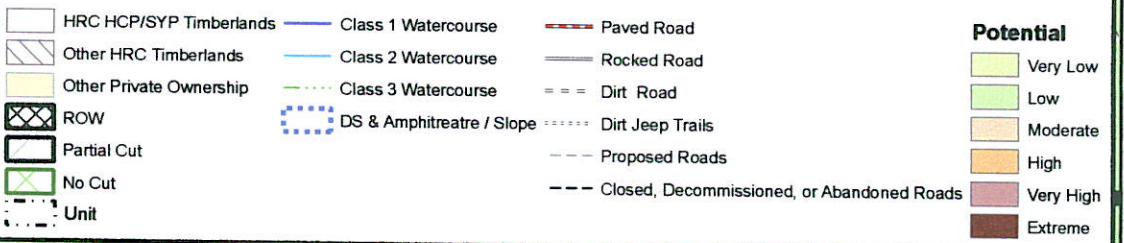


Figure 5

Around Gills
THP 05-077
Aerial Photo Map - Unit 4

1 inch equals 300 feet

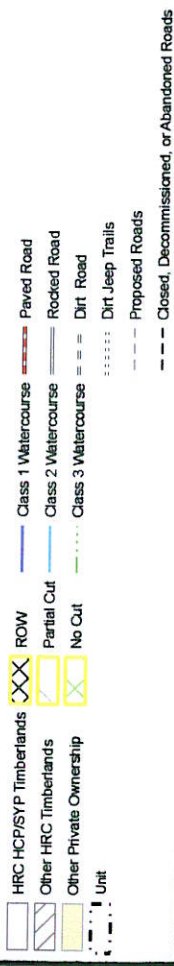
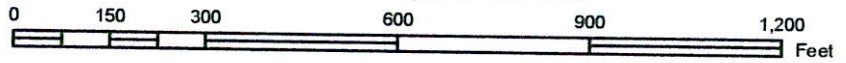


Figure 6

THP 05-077
Watershed Analysis Deep-Seated Landslide Inventory
Unit 4

1 inch equals 300 feet



- | | | |
|-------------------------|---------------------|--|
| HRC HCP/SYP Timberlands | Class 1 Watercourse | Paved Road |
| Other HRC Timberlands | Class 2 Watercourse | Rocked Road |
| Other Private Ownership | Class 3 Watercourse | Dirt Road |
| ROW | Unit | Dirt Jeep Trails |
| Partial Cut | | Proposed Roads |
| No Cut | | Closed, Decommissioned, or Abandoned Roads |

Crown of Deep-Seated Landslides

Hazard for Reactivation or Acceleration of Movement
REACT_HAZARD

- | |
|-------------------------------------|
| N/A (landslides in grassland areas) |
| Very Low |
| Low |
| Low to Moderate |
| Moderate |
| High |

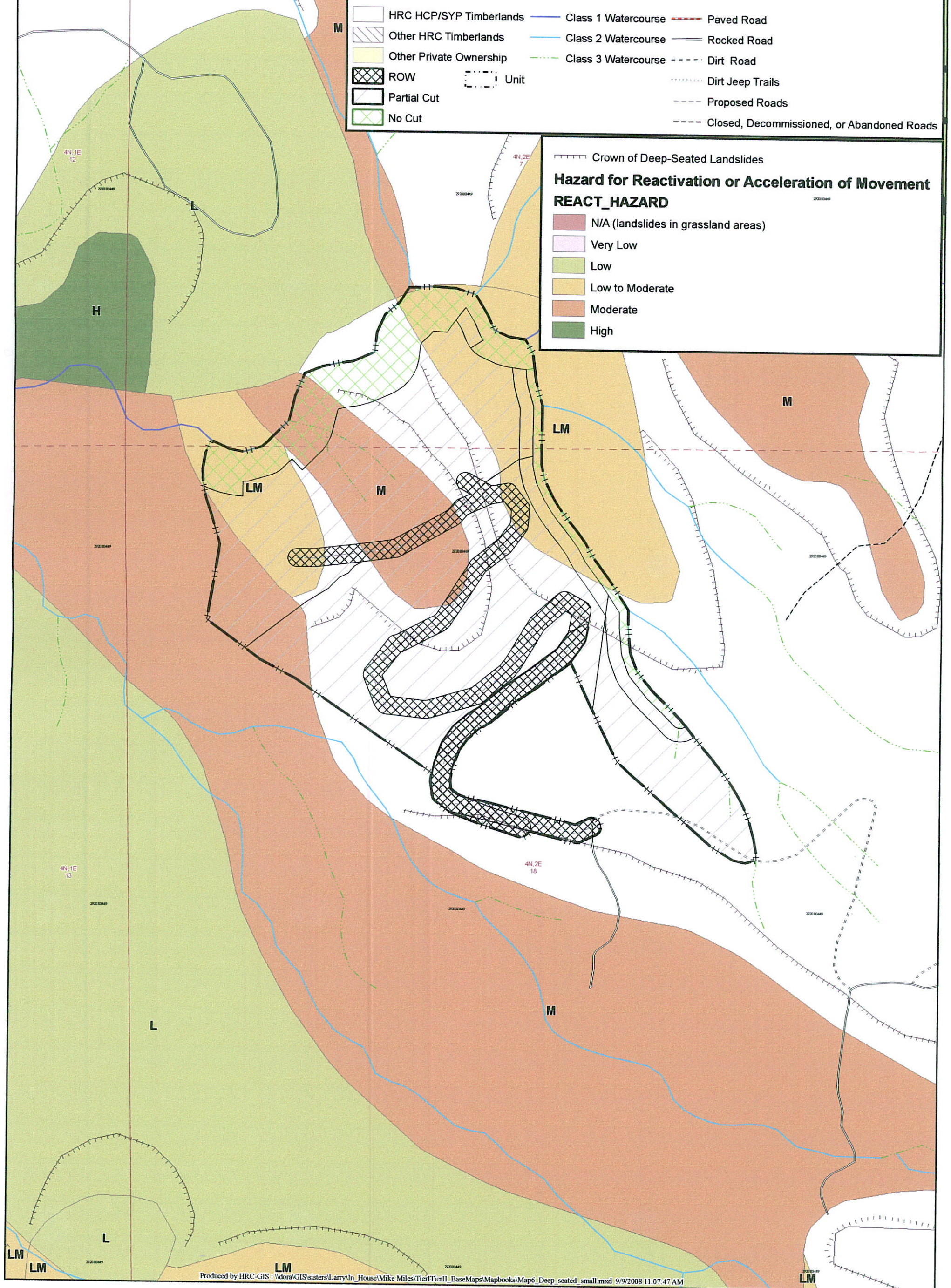


Figure 7

Around Gills
THP 05-077
Road Map

1 inch equals 1,000 feet

