

California Regional Water Quality Control Board
North Coast Region

Order Requiring Technical Information
Monitoring and Reporting Program No. R1-2002-0116

For
Simpson Resource Company

Humboldt County

The California Regional Water Quality Control Board, North Coast Region (hereinafter Regional Water Board), finds that:

1. Simpson Resource Company (SRCO), formerly Simpson Timber Company, P.O. Box 68, Korb, California, as the timber and timberland owner, owns and operates on a large portion of the timberland in the Ryan Creek watershed, tributary to Freshwater Slough, a primary tributary to Humboldt Bay.
2. SRCO conducts timber operations, forestry management, road construction and maintenance, and related activities on its lands in the Ryan Creek watershed.
3. Freshwater Creek watershed, including its tributary Ryan Creek, is listed as impaired under Section 303(d) of the federal Clean Water Act for high instream sediment loads and associated adverse impacts to the beneficial uses of water. Ryan Creek also contains anadromous salmonids listed as threatened under the Federal Endangered Species Act.
4. The beneficial uses of the Freshwater Creek watershed and its tributaries, inclusive of Ryan Creek, include:
 - a. municipal and domestic supply
 - b. agricultural supply
 - c. industrial service supply
 - d. groundwater recharge
 - e. water contact recreation
 - f. non-contact recreation
 - g. commercial and sport fishing
 - h. aquaculture
 - i. cold freshwater habitat
 - j. estuarine habitat
 - k. wildlife habitat
 - l. rare, threatened, or endangered species
 - m. migration of aquatic organisms
 - n. spawning, reproduction and/or early development
 - o. navigation
5. Several reports by Regional Water Board staff and California Department of Fish and Game have documented sediment impairment in the Ryan Creek watershed, including reports from 1972, 1975, 1982, 1995, and 2002.
6. On February 28, 2002, the Regional Water Board directed staff to expedite the development of the sediment Total Maximum Daily Load (TMDL) for the Freshwater Creek watershed with a completion date of August 2003, and also directed staff to require monitoring and technical reports, as necessary.

7. Due to the unconsolidated geology in the Ryan Creek watershed and the lack of watershed or geology specific instream studies, instream data specific to Ryan Creek is required to ensure development of appropriate instream targets for inclusion in the sediment TMDL.
8. The technical reports required by this Order are necessary to ensure that the sediment TMDL developed for the Ryan Creek watershed is based on watershed specific data collected in a manner that accurately characterizes existing sources of sediment and assists the Regional Water Board in predicting potential future sources of sediment. Water quality monitoring by grab sampling is necessary to characterize the chronic and post-storm turbidity conditions in select tributaries of Ryan Creek. Water quality monitoring by continuous water sampling for turbidity and streamflow monitoring is necessary to characterize the range of conditions in tributaries with different levels of recent land management. Turbidity threshold monitoring is necessary to determine the suspended sediment loads in Ryan Creek watershed owned by SRCO.
9. The burden of implementation of this monitoring and reporting program have been evaluated by Regional Water Board staff. The anticipated costs for implementation of this monitoring and reporting program have been estimated to be less than \$73,000. There is significant evidence, including the above mentioned California Department of Fish and Game reports, of past and potential for future sediment discharges from SRCO's timber harvesting-related activities. The costs and other burdens arising from this order are therefore reasonable, given the need for the reports and the benefits to be obtained from the reports.
10. This is an order issued for information gathering purposes, and is exempt from the provisions of the California Environmental Quality Act (Public Resources Code, Section 21000 et seq.), in accordance with California Code of Regulations, Title 14, section 15306.

THEREFORE, IT IS HEREBY ORDERED that, pursuant to California Water Code Sections 13267(b), SRCO shall perform water quality monitoring and reporting in Ryan Creek and its tributaries to measure and report existing conditions in the Ryan Creek watershed relative to their ownership, as set out in detail herein. The water quality monitoring and reporting program (M&R) shall be conducted in a manner that allows comparison of the data to data from other ownerships in the watershed. The M&R shall be designed and implemented to facilitate the collection of instream data necessary for the development of the sediment Total Maximum Daily Load (TMDL) for the Freshwater Creek watershed and shall meet the following objectives:

- ◆ Develop geologically sensitive targets for specified quantitative instream indicators.
- ◆ Develop turbidity-suspended sediment relationships for tributaries of Ryan Creek.
- ◆ Develop estimates of suspended sediment loads in Ryan Creek.
- ◆ Develop stage-discharge relationships at streamflow monitoring stations.

MONITORING

A. Sampling Stations:

Sampling stations associated with the M&R shall be established at the locations specified on Attachment 1.

Water column, streamflow and stage measurements shall be collected at the sampling stations described below and shown on Attachment 1. Specific sampling sites shall be

established in the area of the stations described herein and shall be located at a sufficient distance immediately upstream of the specified confluence to be beyond the zone of influence of the downstream waters.

Sampling stations associated with the M&R are as follows:

- No. RC-1 Ryan Creek, bridge crossing mainline road
- No. RC-2 West Fork Ryan Creek, upstream of the confluence with East Fork Ryan Creek
- No. RC-3 East Fork Ryan Creek, upstream of the confluence with West Fork Ryan Creek
- No. HG-1 Henderson Gulch, upstream of the confluence with Ryan Creek
- No. GC-1 Guptil Gulch, upstream of the confluence with Ryan Creek
- No. GC-2 Guptil Gulch, upstream of the confluence with unnamed tributary
- No. GC-3 Unnamed tributary to Guptil Gulch, upstream of the confluence with Guptil Gulch
- No. UT-1 Unnamed tributary to Ryan Creek, upstream of the confluence with Ryan Creek (this tributary is sometimes referred to as Bear Gulch)

B. Site Description

For all station locations specified on Attachment 1, SRCO (or designee) shall, in consultation with Regional Water Board staff, establish, describe and monument specific monitoring sites at which sample and measurements and collection can be carried out in a repeatable manner over the life of the M&R. Monitoring site description shall be submitted to the Regional Water Board Executive Officer for approval by January 15, 2003. Site description shall include, but shall not be limited to, description of the specific geographic location of site (e.g., distance from the confluence with downstream waters or other describable landmark), approximate stream gradient, local stream channel and pool characteristics (e.g., substrate, channel geometry, instream structures), general hillslope characteristics, and any local features that could affect the results of the monitoring efforts specified herein (e.g. known sites of active sediment discharge or threatened discharge). If a sampling station in the vicinity of the location specified is not accessible, SRCO shall provide a written description of the limitations to the Regional Water Board Executive Officer for consideration per Modifications (B) of this Order by January 15, 2003.

C. Sampling Parameters:

Water column sampling and streamflow and stage measurements shall be conducted according to the following specifications:

Location	Parameter	Units	Sampling Method	Sampling Frequency
RC-1, RC-2, RC-3, HG-1 GC-1, GC-2, GC-3, UT-1	Turbidity ¹	NTU	Grab sample	Weekly and 3 consecutive days following 5 significant rainfall events (suspended sediment measurements are only required of the weekly samples)
	Suspended Sediment ²	mg/L	Grab sample	
	Streamflow ³	cfs	Direct measurement for streamflow	
	Stage ⁴	Feet	Staff plate ⁵	
RC-2, RC-3, GC-1	Turbidity	NTU	Grab sample	Two significant rainfall events every half hour throughout the hydrograph
	Suspended Sediment	Mg/L	Grab sample	
	Stage	Feet	Staff Plate	
	Streamflow	cfs	Direct measurement for streamflow	As needed ⁶
RC-1, RC-2, RC-3, GC-1	Stage	Feet	In Situ measurement	Continuous
RC-1	Suspended sediment	mg/L	Pump sampler	Semi continuous, triggered by turbidity thresholds ⁷
RC-1	Turbidity	NTU	In Situ measurement	Continuous ⁸
RC-1	Rainfall	Inches	Tipping bucket gage	Continuous

D. Sampling Schedule and Frequency:

1. All monitoring of water column parameters, streamflow and stage measurements required in the M&R shall begin no later than January 15, 2003 and shall continue until May 15, 2003. Water column sampling via grab sampling shall be conducted according to the following criteria:

- ¹ The Landowners (or designee) shall measure the turbidity of each grab sample within 48 hours of the time at which it was collected using a turbidity meter capable of measuring turbidity to within ± 5 percent for turbidities within the range of 0 to 2000 NTU, while following the Quality Assurance/Quality Control (QA/QC) Program described in Item E below
- ² Standard operating procedures shall be developed for determination of suspended sediment concentration in accordance with USGS protocols and shall be submitted to the Regional Water Board Executive Officer as part of the QA/QC program described in (E).
- ³ Streamflow shall be measured each week until a reliable stage discharge relationship is developed.
- ⁴ Streamflow data shall be generated using stage measurements (feet) in combination with stage-streamflow relationships developed for each monitoring location. For reference of methods to be used to conduct streamflow monitoring, the following references are available:
<http://www.wrcamnl.wr.usgs.gov/sws/fieldmethods/> , <http://water.usgs.gov/pubs/twri/> .
- ⁵ The staff plate shall be accurate to at least 0.01 foot and shall be of adequate length to measure all anticipated water depths at the stations.
- ⁶ Streamflow shall be measured until a reliable stage discharge relationship is developed for the storm flows
- ⁷ For reference of methods to be used to conduct turbidity triggered suspended sediment sampling the following reference is available at:
http://www.rsl.psw.fs.fed.us/projects/water/tts_webpage/tts_main.html#literature
- ⁸ Instream equipment shall collect turbidity and stage measurements at 10 minute intervals continuously according to the following specifications: Light source wavelength: infrared (~860nm); Orientation of primary light detector: ~90 degrees from incident light; Primary calibration standards: Formazin; Pathlength: less than 10 cm; Range: 1-2,000 NTU (at least); Accuracy: +/- 5%.

- a) Grab samples for turbidity and suspended sediment shall be collected with stage and streamflow measurements at all stations on the same day, once per week. Grab samples shall be collected the same day of the week throughout the monitoring period, as feasible with consideration given to holidays and safety considerations.
 - b) In addition to 1(a) above, samples shall be collected on the receding limb of the hydrograph once per day for three consecutive days following a significant rainfall event. A significant rainfall event shall be defined as a rainfall event producing greater than 1.0 inch of rain in any 24-hour period as measured at an appropriately selected precipitation gage in the Ryan Creek area⁹. The criteria for triggering storm-related grab sampling may be revised following data analysis.
 - c) In addition to 1(a) and (b) above, samples shall be collected during significant storm events, as defined in the monitoring plan, every half-hour throughout the storm hydrograph. Using available weather forecasts, SRCO shall attempt to sample two significant storms at this increased frequency. If the storm does not turn out to be significant, SRCO will be obligated to attempt to sample another storm.
 - d) If conditions for sampling are unsafe, the conditions shall be documented and the sampling shall resume as soon as conditions are safe.
2. For all sampling locations, necessary equipment shall be installed no later than January 15, 2003 and measurements shall continue for the winter runoff season (through May 15, 2003).
 3. Development of a stage-discharge relationship shall begin by January 15, 2003. A wide range of streamflow shall be measured to develop an accurate stage-discharge relationship. Once a reliable stage discharge relationship is developed for an individual site, collection of streamflow measurements may be rescinded according to the provisions described under the Modifications section of this Order.

E. Quality Assurance Project Plan (QAPP):

1. SRCO (or designee) shall, in consultation with Regional Water Board staff, develop a comprehensive QAPP for the monitoring activities to be implemented, based Quality Assurance guidance available from the US Environmental Protection Agency (EPA). The QAPP shall address all aspects of the monitoring program and shall contain, at a minimum, but not be limited to the following:
 - a) Standard procedures for the establishment of repeatable sampling locations;
 - b) Standard operating procedures for each field method and piece of equipment used;
 - c) Standard operating procedures for each laboratory method and piece of equipment used;

⁹ For planning purposes, the Landowner may wish to use real-time precipitation data to determine the 1 inch in 24 hours available through the National Weather Service (NWS) at: <http://www.wrh.noaa.gov/Eureka/rivers/#qpf>. Additionally the landowner may wish to use the real-time stream stage data such as Little River, also available on the NWS webpage at: http://www.wrh.noaa.gov/cnr/c/prods/nc_stg1.gif.

- d) Standard reporting procedures and format;
 - e) Measures for quality assurance associated with monitoring and reporting procedures;
 - f) Measures for quality control associated with monitoring and reporting procedures;
 - g) A training program for personnel conducting monitoring activities; and
 - h) Measures for revising the QAPP, when necessary.
2. SRCO (or designee) shall submit the QAPP prior to January 20, 2003, for the Regional Water Board Executive Officer's approval. Following approval of the QAPP, SRCO shall implement the procedures and control measures specified therein.
 3. SRCO (or designee) shall train all personnel conducting monitoring activities according to the provisions of the approved QAPP within 10 days of written approval. Prior to approval of the QAPP all monitoring activities shall be conducted according to methods accepted by Regional Water Board staff.
 4. Following implementation of the approved QAPP, SRCO may propose changes to the procedures and control measures as necessary, and submit the changes to the Regional Water Board Executive Officer for approval. Following approval of changes in the QAPP, SRCO shall document such changes and implement the new procedures and control measures immediately.

REPORTING

A. Written Field Log

A written field log shall be developed and maintained by SRCO. The written field log shall contain, but not be limited to, the following information:

- The grab sampling date(s), time(s) locations conducted under MONITORING D (1);
- The staff person(s) conducting the sample collection/measurement under MONITORING D (1);
- The stage and estimated stream flow, in cubic feet per second, at each sampling location identified under MONITORING D (1);
- Turbidity results or other measurement results;
- Unsafe sampling conditions, if applicable, identified under MONITORING D (1)(c);
- Any water quality observations regarding or related to, but not limited to, stream bank erosion, natural landslide or debris flow, land management related erosion, road related erosion, and natural erosion made while conducting grab sampling under MONITORING D (1).

B. Reporting Requirements

For the months of January through May, SRCO shall submit monthly reports to the Regional Water Board Executive Officer by the 15th calendar day of each month for the previous month's reporting period. The reporting period is defined as a calendar month. The reports shall include, but not be limited to, the following information:

1. The date, location and time of each sample collected/measured;
2. The individual(s) who performed the sample collection/measurement;
3. The date, location and time of sample analyses;

4. The individual(s) who performed the analysis;
5. Measured and/or analytical results for all water quality samples collected and stage/streamflow measurements taken during the reporting period;
6. Daily rainfall totals for each day during the reporting period, as recorded at the locations RC-1;
7. Specify dates when conditions were not safe to conduct monitoring (Monitoring (C)(1)(c));
8. Complete disclosure of all possible sources of error and/or data loss;
9. Copies of written field log including observations made by field staff;
10. The monitoring reports shall conform to the reporting procedures and control measures and shall be arranged in the formats specified in the QAPP approved by the Regional Water Board Executive Officer. Complete reports shall be submitted to the Regional Water Board Executive Officer in hardcopy form. All data shall also be submitted in electronic form.

C. Signatory Requirements

1. All reports or information prepared in accordance with this agreement submitted to the Regional Water Board shall be signed by a responsible corporate officer. For the purpose of this agreement, a responsible corporate officer means: (a) a president, secretary, treasurer, or vice president of the corporation in charge of a principal business function, or any other person who performs similar policy or decision-making functions for the corporation, or (b) the manager of the construction activity if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures;
2. All reports or other information required in this Order by the Regional Water Board Executive Officer shall be signed by a person described above or by a duly authorized representative. A person is a duly authorized representative if:
 - a) The authorization is made in writing by a person described in paragraph (a) above; or
 - b) The authorization specifies either an individual or a position having responsibility for the overall operation of the construction activity, such as the position of manager, operator, superintendent, or position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position).
 - c) The written authorization is submitted to the Regional Water Board prior to or together with any reports, information, or applications signed by the authorized representative.
3. Any person signing a document under paragraph (a) or (b) of this provision shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those directly

responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

IMPLEMENTATION DATE

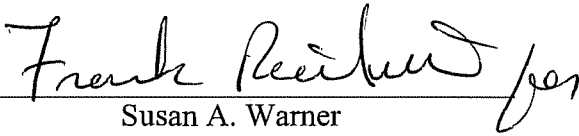
- A. SRCO shall begin monitoring and reporting under this Order by January 15, 2003.

MODIFICATIONS

- A. If found to be appropriate based on an analysis of the data collected, the Regional Water Board Executive Officer may, in the exercise of professional discretion, rescind or revise, in writing, the requirements detailed herein at any time.
- B. For due cause, SRCO may submit, in writing, a request for changes in monitoring or reporting procedures associated with this Order. Upon written approval by the Regional Water Board Executive Officer, those changes may be implemented.

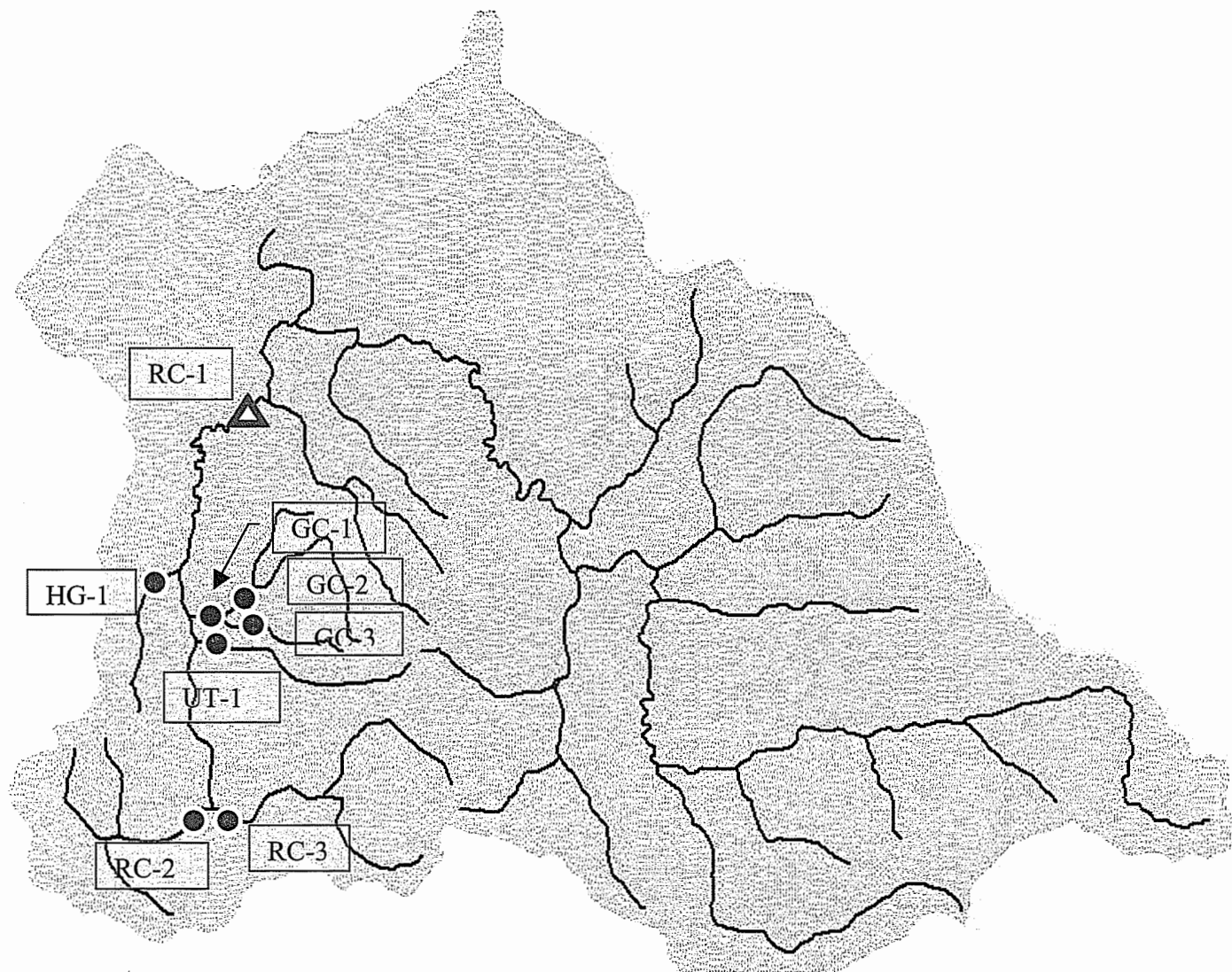
SUMMARY OF DATES ASSOCIATED WITH DELIVERABLES

1. By January 15, 2003, SRCO (or designee) shall submit a description of the specific monitoring sites as described in M&R No. R1-2002-0116, for approval by the Regional Water Board Executive Officer.
2. By January 20, 2003, SRCO (or designee) shall submit the QAPP for approval by the Regional Water Board Executive Officer.
3. Within 10 days of written approval by the Regional Water Board Executive Officer, SRCO (or designee) shall train all personnel conducting monitoring activities according to the provisions of the QAPP.
4. By January 15, 2003, SRCO (or designee) shall complete the installation of equipment and commence monitoring and reporting under M&R No. R1-2002-0116.
5. SRCO (or designee) shall submit monthly monitoring reports for the period of January through May as described in M&R No. R1-2002-0116.

Ordered by 
Susan A. Warner
Executive Officer

December 23, 2002

Attachment 1
Ryan Creek Monitoring Locations Map



New continuous turbidity and stage measurements, semicontinuous (turbidity threshold) automated suspended sediment sample collection, stage measurements with grab samples for turbidity and suspended sediment, and stage/discharge relationship development



New stage measurements with grab samples for turbidity and suspended sediment, and stage/discharge relationship development