

DEPARTMENT OF PARKS AND RECREATION

RUSSIAN RIVER/MENDOCINO DISTRICT

Mendocino Sector
2 Miles N. of Mendocino, Hwy 1.
Post Office Box 440
Mendocino, California 95460
(707) 937-5804



February 14, 2001

California Regional Water Quality Control Board
North Coast Region
5550 Skylane Boulevard, suite A
Santa Rosa, California 95403

R W Q C B
REGION 1

FEB 20 2001

Attention: Charles Reed

<input checked="" type="checkbox"/> LAM	<input type="checkbox"/> CRJ	<input type="checkbox"/>
<input type="checkbox"/> RLT	<input type="checkbox"/> SAW	<input type="checkbox"/> KAD
<input type="checkbox"/> FOR	<input type="checkbox"/> RSG	<input checked="" type="checkbox"/> CER ✓ 2/22/01

RE: Virgin Creek Sewage Spill

The California Department of Parks and Recreation operates and maintains a variety of public use facilities at MacKerricher State Park. Located approximately two miles north of the community of Fort Bragg, California, facilities within the State Park include, but are not limited to, 142 family camp sites; 7 public restrooms, including showers; a maintenance shop, an office building; 5 employee family residences and an entrance kiosk. Annual public visitor census figures range between 750,000 and 1,000,000 people.

Sewage waste generated within MacKerricher State Park is exported from the Park, via two sewage lift stations, to the City of Fort Bragg sewage collection and treatment facilities. Sewage lift station #1 is located adjacent to the Lake Cleone parking lot and is the central collection point of the system. It contains two pumps, each pump's estimated flow rate is 100 gallons a minute. Lift station #2 is located along the Haul Road adjacent to Virgin Creek. Lift station #2 relays the sewage waste into Fort Bragg's system. It also contains two pumps and each pump's estimated rate of flow is 40 gallons a minute.

The force main connecting the two lift stations is primarily 4-inch ductile iron pipe. The force main crosses Virgin Creek parallel to, and on the west side of, a wooden bridge that also crosses the creek. The pipe material used for crossing the creek is schedule 40 PVC encased within an 8-inch diameter corrugated metal pipe. Depending upon the tides, it is approximately 275 to 400 feet across the beach to the ocean.

Early Monday evening, December 25, 2,000 Park Maintenance Chief Peter Braudrick received a telephone call from State Park's dispatch center. A citizen had called to report sewage was leaking into Virgin Creek near MacKerricher State Park.

A Park Ranger was contacted to search the Virgin Creek area for the reported leak. Unable to see anything in the advancing darkness, the Ranger reported back his uncertainty about where to search for the leak and asked for assistance. Peter Braudrick then drove to MacKerricher State Park to personally assess the situation. Unable to see anything out of order in the darkness, Peter checked the lift stations to make sure they were fully operational. Since the liquid levels in the wet wells were low, the motor controls were turned off for the remainder of the night just in case there was a broken pipe.

The next morning, Park maintenance workers were sent to Virgin Creek to see if they could find any signs of sewage leaking into the creek. The workers found the force main where it crosses the creek broken in two places. Work began immediately to repair the broken sewer line. Meanwhile, telephone calls to report the sewage spill were made to the Regional Water Quality Control Board in Santa Rosa, Mendocino County Environmental Health Division in Fort Bragg and the California Department of Fish and Game. Thompson's Septic Service was also called to pump out the sewage from the wet well at lift station #1 so Park facilities could remain open while repairs to the broken sewage main were completed.

On Wednesday morning, December 27, 2,000 samples of Virgin Creek water, were collected according to directions from Charles Reed of the Regional Water Quality Control Board and submitted to Alpha Analytical Laboratories in Ukiah. Repairs to the force main were completed that afternoon and the lift stations returned to normal operation. Additional work on the force main included securing it to the bridge framework. Also, the repaired section of force main was not encased within a metal pipe, as before. Instead, the main was encased in a wooden box made of 4"x 8" redwood boards to protect it.

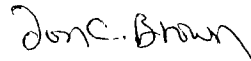
On January 3, 2001 Jim Ehlers, Environmental Health Specialist with the Mendocino County Department of Public Health, toured the Virgin Creek area where the sewage spill occurred. He said he saw no signs of sewage waste in or around the creek or the bridge. His opinion was waves and tidal action probably flushed out any signs of the spill. Mr. Ehlers said the County did not have any background information on Virgin Creek and recommended collecting a second set of water samples. On January 8th a second set of water samples was collected and submitted to Alpha Analytical Laboratories for total and fecal coliform analyses.

Observations made during and after the force main repair work indicates a number of situations coincided to produce the broken sewer main. Other State Park units with parking lots adjacent to the ocean had sand deposits left on them from overnight flooding due to high surf conditions. Information obtained from the National Oceanic and Atmospheric Administration's National Climatic Data Center show a combination of high tides and high surf conditions. From Point Arena to Cape Mendocino wave heights exceeding 30 feet occurred at the start of the holiday weekend, coinciding with higher than normal 8'-6" tides. It appears a large tree trunk was carried across the beach by high waves at MacKerricher State Park and rammed into the bridge where the force main crossed it. Also, there was nothing to indicate the force main or its encasing pipe was secured to the bridge or anything else. In addition, the corrugated metal encasing pipe was worn thin and damaged in spots along its length, presumably from the salt-laden environment. Finally, because of low visitor use during the winter months and especially the Christmas holiday, Park staff working that weekend was minimal.

The last recorded incident involving the MacKerricher State Park sewer force main, that resulted in a sewage spill, was four and one-half years ago. An above-ground air release valve was vandalized which cracked the riser pipe where it entered a pipe tee. A small amount of sewage puddled in the immediate vicinity of the air release valve. Dry sand was spread over the puddle to soak up the liquid and then scooped up and hauled away. Fresh soil was used to cover the area after the cleanup. The air valve is located on the bluffs, back from the beach and far from any area used by the public. None of the waste reached the beach or any waterway.

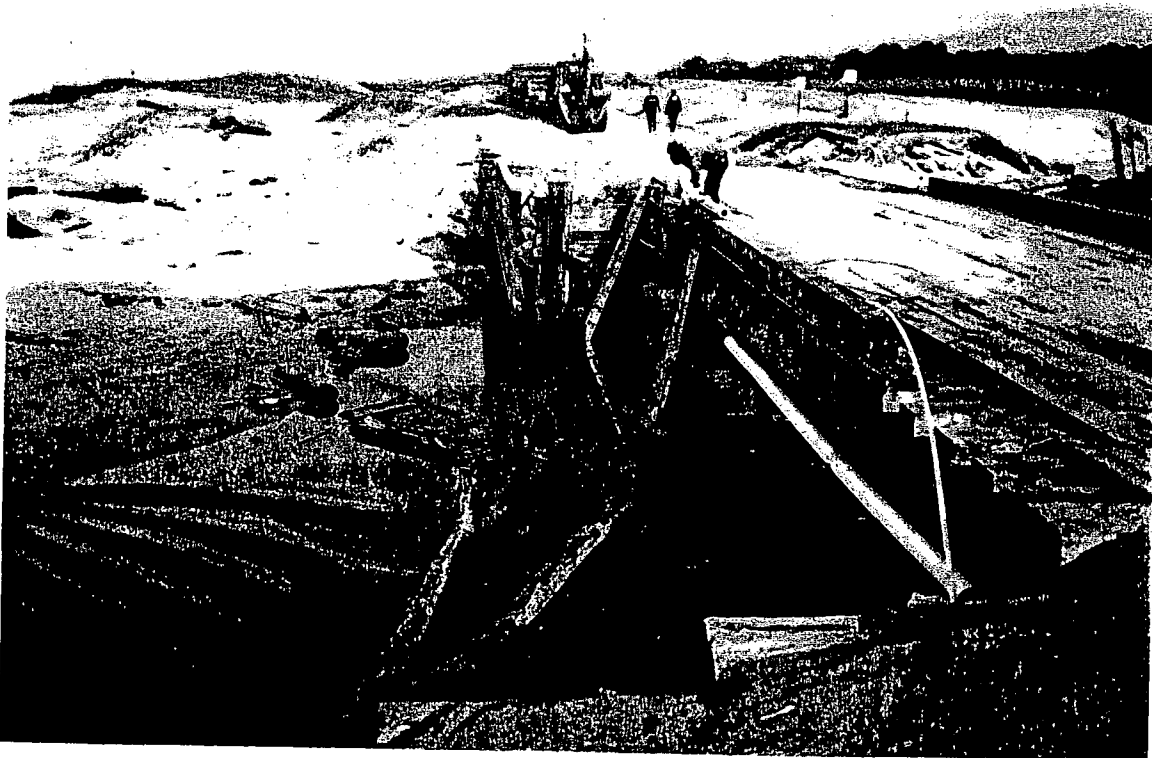
Park maintenance staff is currently investigating available options for detection and alarm systems that would alert someone if and when another sewer main break should occur. Various manufacturers, vendors and the City of Fort Bragg have been contacted for assistance.

Sincerely,



Jon C. Brown
Water/Sewage Plant Supervisor

CC: Mendocino County Environmental Health Division
California Department of Fish and Game



Virgin Creek, MacKerricher State Park. Site of broken sewer force main.
(Looking north)



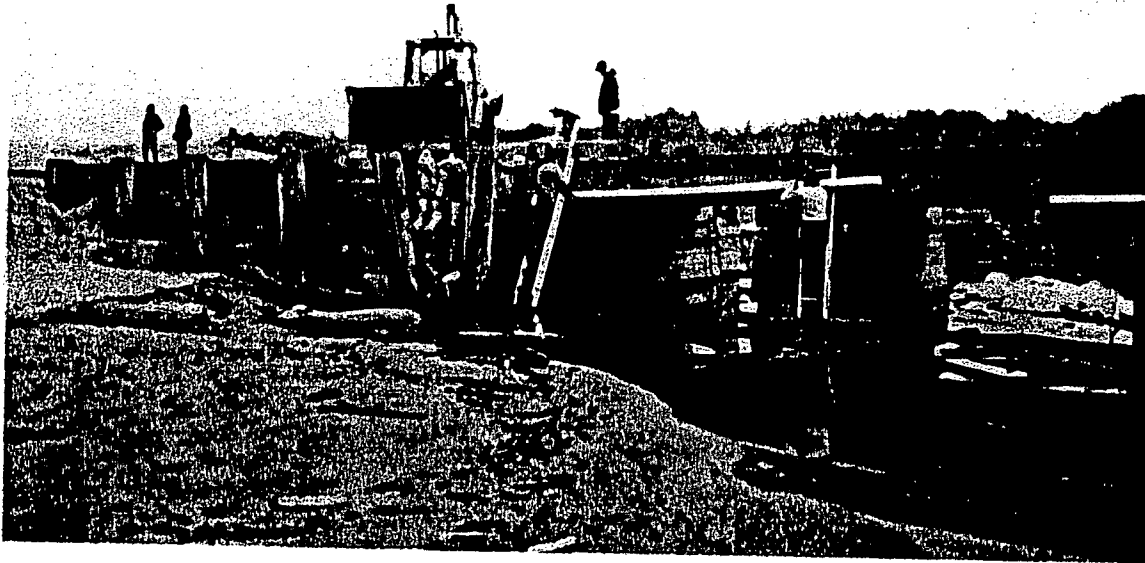
View of large tree trunk suspected of breaking sewer force main.



View to the east from Wooden bridge across Virgin Creek.



View to the west from wooden bridge across Virgin Creek.

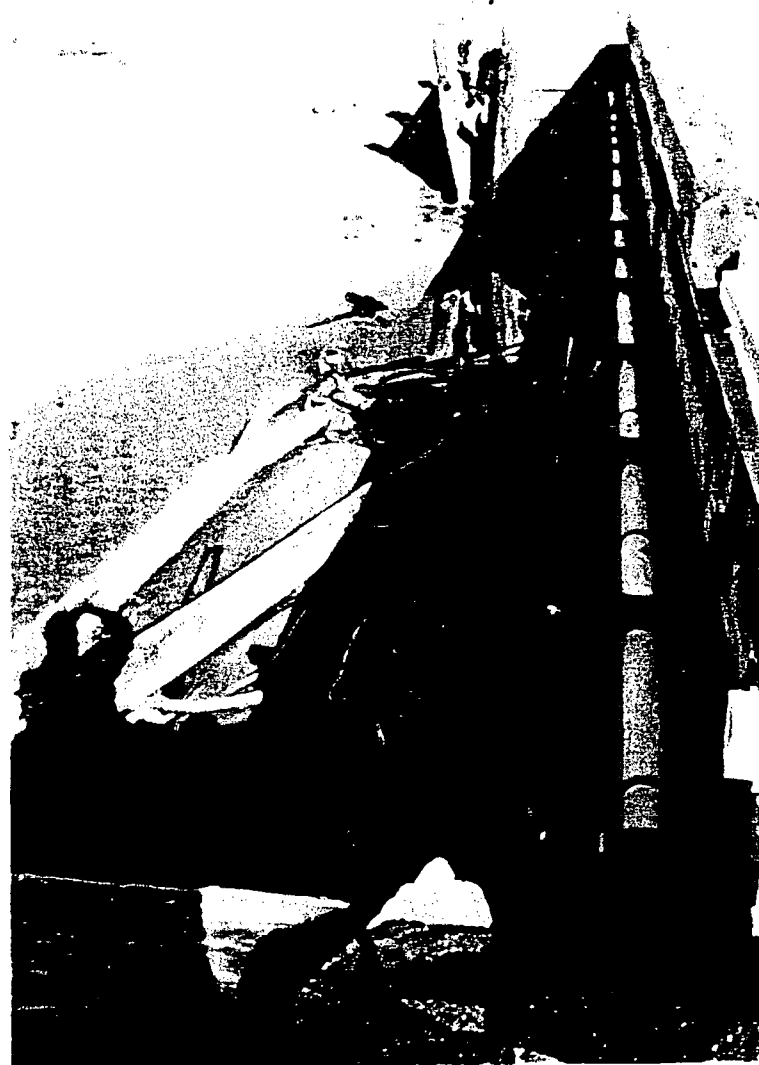


Park Maintenance employees replacing broken section of 4-inch PVC sewer force main at MacKerricher State Park.

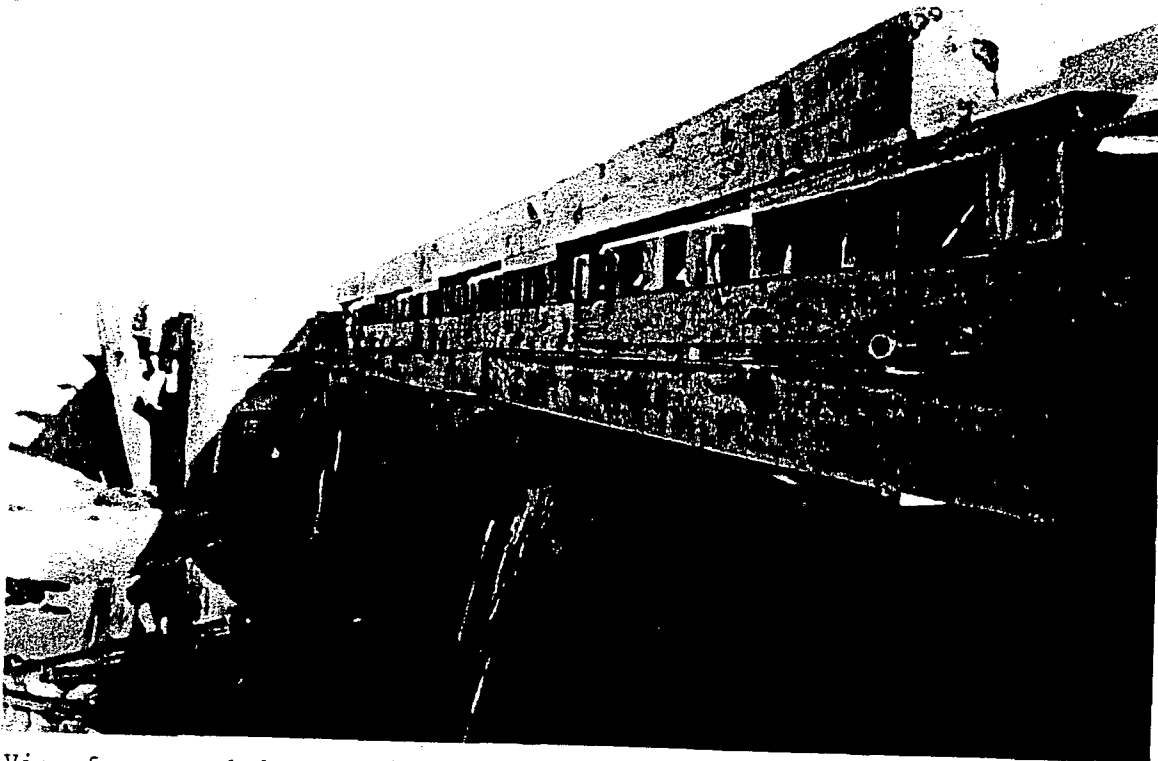




View, looking south, of sewer main repairs in progress. Section of corrugated metal pipe in foreground that encased force main where it crossed bridge.



View, looking north, of intact, repaired force main. Note support brackets holding pipe to bridge.



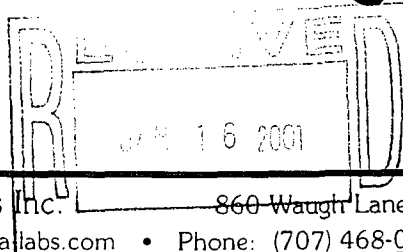
View from creek bed of 4"X 8" boards encasing repaired 4-inch pipe.



View, looking south, attop of repaired force main. Also in view is control cable conduit, force main support brackets, outer 4"X 8" board used to encase force main.



Alpha



Alpha Analytical Laboratories Inc. 860 Waugh Lane H-1, Ukiah, California 95482

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CHEMICAL EXAMINATION REPORT

Calif. Dept. of Parks & Rec.
P O Box 440
Mendocino, CA 95460
Attn: Maint. Supvr

Date Printed
01/10/01

Project No:
Project Id:

Order Number Receipt Date/Time Client Client P.O. Send Via
A00122717 12/27/00 01:30PM CALPAR MAIL

Order	METHOD	EXTRACTED	TEST DATE	RESULT	UNITS	PQL
Order A00122717 consisted of 5 Samples and 5 Tests.						
Sample 1	#1 Virgin Creek Lagoon, 50' east					
Sample Type:	Aqueous		Sampled By:	JB		
				Sampled:	12/27/00	10:00
Nitrate as NO3	300.0		12/28/00	1.3	mg/L	1.0
Sample 2	#1A Virgin Creek Lagoon, 50' east					
Sample Type:	Aqueous		Sampled By:	JB		
				Sampled:	12/27/00	10:00
Total/Fecal Coliform	SM9221		12/27/00			
Total Coliform - 15 Tube				>1600	MPN	2.0
Fecal Coliform - 15 Tube				300	MPN	2.0
Sample 3	#2 Virgin Creek, 25' west					
Sample Type:	Aqueous		Sampled By:	JB		
				Sampled:	12/27/00	10:10
Nitrate as NO3	300.0		12/28/00	2.7	mg/L	1.0
Sample 4	#2A Virgin Creek, 25' west					
Sample Type:	Aqueous		Sampled By:	JB		
				Sampled:	12/27/00	10:10
Total/Fecal Coliform	SM9221		12/27/00			
Total Coliform - 15 Tube				>1600	MPN	2.0
Fecal Coliform - 15 Tube				1600	MPN	2.0
Sample 5	#2B Virgin Creek, 50' west					
Sample Type:	Aqueous		Sampled By:	JB		
				Sampled:	12/27/00	10:15
Total/Fecal Coliform	SM9221		12/27/00			
Total Coliform - 15 Tube				>1600	MPN	2.0

PQL = Practical Quantitation Limit ND - None Detected

Bruce L. Gove
Laboratory Director

Date Printed: 01/10/01



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CHEMICAL EXAMINATION REPORT

Page 2 of 3

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P O Box 440
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Attn: Maint. Supvr

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01/10/01

Project No:
Project Id:

Order Number	Receipt Date/Time	Client	Client P.O.	Send Via
A00122717	12/27/00 01:30PM	CALPAR		MAIL

METHOD	EXTRACTED	TEST DATE	RESULT	UNITS	PQL
Order A00122717 consisted of 5 Samples and 5 Tests.					
Fecal Coliform - 15 Tube			>1600	MPN	2.0

PQL = Practical Quantitation Limit

ND - None Detected

Bruce L. Gove
Laboratory Director

Date Printed: 01/10/01



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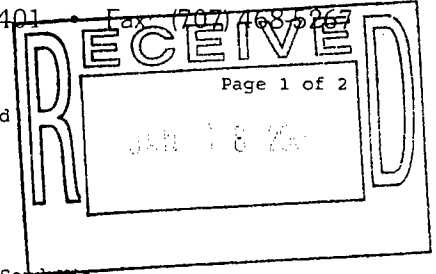
e-mail: clientservices@alpha-labs.com • Phone: (707) 468-0401 • Fax: (707) 468-5267

CHEMICAL EXAMINATION REPORT

Calif. Dept. of Parks & Rec.
P O Box 440
Mendocino, CA 95460
Attn: Maint. Supvr

Date Printed
01/16/01

Project No:
Project Id:



Order Number	Receipt Date/Time	Client	Client P.O.	Send Via
A01010820	01/08/01 02:23PM	CALPAR		MAIL

	METHOD	EXTRACTED	TEST DATE	RESULT	UNITS	PQL
Order A01010820 consisted of 3 Samples and 3 Tests.						
Sample 1 Virgin Creek 25' E Of Bridge						
Sample Type:	Aqueous	Sampled By:	JB	Sampled:	01/08/01	10:00
Total/Fecal Coliform	SM9221		01/08/01			
Total Coliform - 15 Tube				500	MPN	2.0
Fecal Coliform - 15 Tube				240	MPN	2.0
Sample 2 Virgin Creek 100' W Of Bridge						
Sample Type:	Aqueous	Sampled By:	JB	Sampled:	01/08/01	10:05
Total/Fecal Coliform	SM9221		01/08/01			
Total Coliform - 15 Tube				>1600	MPN	2.0
Fecal Coliform - 15 Tube				220	MPN	2.0
Sample 3 Virgin Creek 25' W Of Bridge						
Sample Type:	Aqueous	Sampled By:	JB	Sampled:	01/08/01	10:10
Total/Fecal Coliform	SM9221		01/08/01			
Total Coliform - 15 Tube				>1600	MPN	2.0
Fecal Coliform - 15 Tube				900	MPN	2.0

PQL = Practical Quantitation Limit ND - None Detected

Bruce L. Gove
Laboratory Director

Bruce L. Gove
Date Printed: 01/16/01