

ENVIRONMENT PROTECTION SECTION CORNWALL AREA

FINAL REPORT

Trevone Bay Beach
EC Bathing Water Guideline Noncompliance

Investigation into the Trevone Stream

March 2002
2001/46
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1. INTRODUCTION

1.1. Background

Trevone bathing water has had three guideline failures since 1997, when sewerage improvements as part of the Trevone scheme were undertaken. The bathing water was affected by crude sewage discharging into the bay until the 1997 improvements. The waters can now be affected by a Combined Storm Overflow (CSO) which discharges through the old crude outfall, the Trevone stream and potentially the Cataclews outfall.

Summary of Compliance against Microbiological Standards

1.	Imperative F	ails	Guideline Fails				
Year	Total Coliforms	Faecal Coliforms	Total Coliforms	Faecal Coliforms	Faecal Streptoccoci		
1997	0	1	4	7*	1		
1998	0	0	0	1	0		
1999	0	1	2	6*	3*		
2000	0	0	2	6*	5*		
2001	0	0	0	3	2		

^{*}Fails standard for EC Bathing Waters

The Trevone stream catchment consists mainly of agricultural land interspersed with a few domestic properties, the village of Trevone and Trecerus Industrial estate, see Figure 1. Proximate to the stream there are several septic tank soakaways, some of which have caused pollution problems. Pollution events have also been linked to farming practices and sewerage misconnections at Trecerus Industrial Estate.

1.2. Objectives

To identify the causes of EC Guideline non-compliance at Trevone ECBW.

2. METHODS

- 2.1. Extended monitoring to identify bacterial inputs from tributaries was initiated during the 2001 bathing season.
- 2.2. Review of associated data including rainfall, tidal state, reported pollution events and extended monitoring.

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3. RESULTS

Figure 2: Bathing water and extended monitoring data.

Figure 3: Pollution event reports.

4. DISCUSSION

During the 2001 bathing season the extended monitoring (which was limited to two sites due to the Foot and Mouth disease epidemic) showed sporadic bacterial contamination to the watercourse. Bacterial loading could not be calculated, as the sampling was not accompanied by flow gauging.

The elevated concentrations were not exclusive to wet weather, suggesting point sources as well as the possibility of diffuse contamination.

Daily rainfall totals taken at Crugmeer rainfall station suggest that on two of the sampling days there was more than trace rainfall. On one of these days, 05-Jul-2001, there was significant contamination at the Treator site with associated elevation at the site prior to the beach. The corresponding bathing water sample was also slightly elevated, but fell within the Guideline standard. The Treator sampling site is situated immediately downstream of a farm. Later in the bathing season a pollution incident was reported (Appendix, Incident No:00026250) which could have been responsible for some previous elevated results. A further incident (Appendix, Incident No:00010814), a sewerage misconnection at Trecerus Industrial Estate could also have contributed to elevated results on this tributary. Other misconnections at Trecerus Industrial Estate and septic tank soakaways on the Treator tributary had been identified and rectified previous to the 2001 bathing season. Samples taken during wet weather in February 2002 still showed bacterial contamination at Treator, but not at Bay View. The Treator site is immediately downstream of a road drain and the contamination could have been enhanced by road runoff.

The ratio of faecal coliforms to faecal streptococci can be used as an indicator of the derivation of the bacteria. Relatively high faecal coliforms indicate human origin and relatively high faecal streptococci indicate agricultural sources. This method is not absolute due to the varying die off rates of the different bacteria. Bacterial concentration ratios at Bay View indicate the possibility of human derived bacterial contamination. As no properties in the immediate area are linked to mains, septic tanks might have been the source. This does not eliminate the possibility of contamination derived from agricultural sources.

5. **CONCLUSIONS**

- 5.1. Some elevated bacterial counts in the Trevone stream can attributed to known pollution sources and events.
- 5.2. There is bacterial contamination at the Treator sampling site during wet weather. This Page 2 of 3

will be elevated due to the road drain and possibly farm runoff.

5.3 There are unresolved sewerage issues in the catchment which require attention.

6. RECOMMENDATIONS

6.1. Pollution prevention farm visits should be carried out to identify the possible pathways of bacterial contamination to the watercourse and remedy any findings.

Action - EP Team Central

6.2. Pursue rectification of drainage problems at Trecerus Industrial Estate.

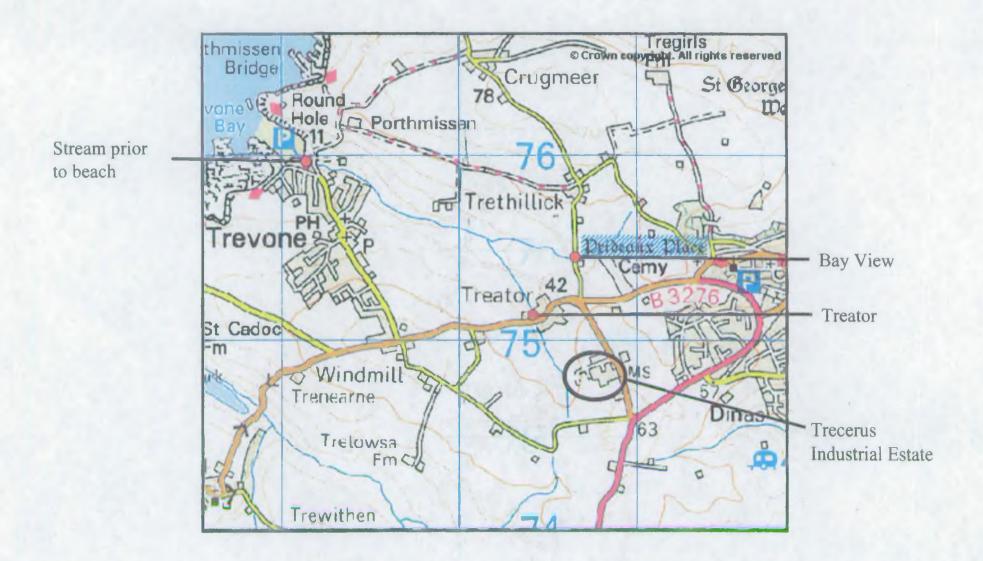
Action - EP Team Central

6.3. If guideline non-compliance continues after the completion of Recommendations 6.1 and 6.2 then a catchment walkover survey to identify further bacteriological sources should be undertaken.

Action - Investigations Team

Anthony Heard Investigations Officer

Figure 1: Trevone Stream Catchment



ECBW Trevone

Date	Time	total colif.	faecal colif.	faecal strep.	salinity	HW	WRT HW	Rain on day	Rain -24
07-May-00	12:25	10	10	10	34.6		· · · · · · · · · · · · · · · · · · ·		-
12-May-00	10:35	18	18	10	35.1		-		
18-May-00	15:00	27	10	10	35.1				-
24-May-00	11:05	10	10	10	35				
30-May-00	13:55	27	10	10	34.7				
06-Jun-00	10:25	10	10	10	34.9	_		-	
12-Jun-00	12:30	10	10	10	35.1				
20-Jun-00	13:50	10	10	10	35.1				
02-Jul-00	13:35	27	10	18	34.9				
08-Jul-00	09:05	0	0	20	34.9				
14-Jul-00	13:10	10	10	36	35.2				
22-Jul-00	13:10	10	10	10	35.1				
27-Jul-00	12:10	145	180	100	33.8				_
02-Aug-00	09:10	200	210	164	35.1				
09-Aug-00	13:20	1260	1200	1000	35				
15-Aug-00	09:25	82	55	18	35.1				
21-Aug-00	12:45	27	27	270	34.6			-)(-	
01-Sep-00	16:05	342	200	191	34.8				, ,
08-Sep-00	12:30	480	45	55	34.9				
13-Sep-00	09:45	182	210	81	34.6				
18-Sep-00	11:45	620	450	136	34.5				
03-May-01	12:35	36	45 .	10	34.1	15:07	-02:32	0	0
08-May-01	11:05	10	10	10	34.7	06:44	04:21	0	0
19-May-01	13:35	45	27	10	34.1	15:57	-02:22	0	0
25-May-01	09:15	55	100	10	34.5	07:41	01:34	0	0
30-May-01	13:10	36	55	10	34.5	12:09	01:01	0	0
13-Jun-01	09 :35	136	155	370	34.2	10:50	-01:15	0	0
19-Jun-01	12:45	10	10	10	34.7	16:43	-03:58	0	0
23-Jun-01	09:15	114	33	64	34	07:30	01:45	0	0
28-Jun-01	16:30	10	10	10	34.8	11:48	04:42	0.5	1
05-Jul-01	10:35	64	64	10	34.7	06:06	04:29	6.7	3.8
16-Jul-01	14:45	430	380	210	34.4	14:05	00:40	7.7	0
24-Jul-01	10:55	10	10	27	34.5	08:54	02:01	0	0
30-Jul-01	15:20	320	250	55	34.7	14:36	00:44	0.4	0
04-Aug-01	09:20	10	18	10	34.9	06:31	02:49	1.3	0
11-Aug-01	11:50	10	10	10	34.9	10:15	01:35	0.8	0
20-Aug-01	11:45	64	45	10	34.9	07:06	04:39	0	0.3
25-Aug-01	11:10	64	73	27 .	34.8	10:44	00:26	0	0.2
31-Aug-01	09:05	0	0	10	35	04:53	04:12	0	0.3
11-Sep-01	15:20	65	27	10	34.8	11:20	04:00	0	0
16-Sep-01	09:15	64	18	10	35.1	05:13	04:02	0	0
19-Sep-01	12:25	10	18	10	34.9	19:48	-07:23	0	0

Extended Monitoring Data

Date	Time	faecal colif.	faecal strep.	Time	total colif.	faecal colif.	faecal strep.	Time	total colif.	faecal colif.	faecal strep.	Rain on day	rain -24
7-May-00	12:35	580	36										
2-May-00	10:45	4000	480					2.0	·				
8-May-00	15:05	450	250										
4-May-00	11:15	2000	530					-					
0-May-00	14:05	2800	4100										
6-Jun-00	10:30	0	0			ĺ							
2-Jun-00	12:25	740	440										
0-Jun-00	13:45	1473	690										
Z-Jul-00	13:45	11500	8200									-	
8-Jul-00	09:12	520	240										
4-Jul-00	13:15	800											
2-Jul-00	13:15	1355	320										
7-Jul-00	12:15	11900		1									
2-Aug-00	09:15	1218	1										
9-Aug-00	13:25	991	580										
5-Aug-00	09:30	790	864										
1-Aug-00	12:50	1136	520										
1-Sep-00	15:55	20000											
8-Sep-00	12:25	20000											
3-Sep-00	09:50	600											
8-Sep-00	11:40	20000	6300										
3-May-01	12:30	250		13:00	1			12:45	7600	610	118	0	
8-May-01	11:15	310	91	10:47	82	91	18	10:50	1500	750	91	0	
9-May-01	13:40	560		14:00				14:10	20000	1218	400	0	
5-May-01	09:20	770		09:10				09:00	873	791	182	0	
0-May-01	13:15	690		13:30				13:40	20000	4800	1327	0	
3-Jun-01	09:30	450	320	09:05	370	550	1064	09:10	10500	3700	2100	0	
9-Jun-01	12:55	360		13:00	1			13:10		8800		0	
3-Jun-01	09:17	430		09:00			918	09:05	1073	909	560	0	
8-Jun-01	16:35	2700		16:45			540	16:40	17800	1573	680	0.5	
5-Jul-01	10:40	13000		10:35				10:50	20000	20000	20000	6.7	3
6-Jul-01	14:50	480		14:25	3100			14:35				7.7	
4-Jul-01	11:00	740		10:40		1		10:45			2100	0	
0-Jul-01	15:25	620		15:35	12900			15:45				0.4	
14-Aug-01	09:27	873		09:00				09:05				1.3	1
1-Aug-01	12:00	640		12:05				12:10			1109	0.8	
0-Aug-01	11:50	250		11:30	20000	20000	2600	11:35	20000	20000	1600	0	0
5-Aug-01	11:15	1100	660	11:30	20000	4300	2200	11:20	20000	20000	4300	-	_
1-Aug-01	09:10	700		09:25	4000	300		09:20			_	0	
1-Sep-01	15:25	440				1	 	15:35				. 0	·
6-Sep-01	09:20	64				†	 	09:05				0	
9-Sep-01	12:35	690			 	 	 	\$7.03	2700	7300	- 500	0	
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	11:30	4300	2900	11:15	320	J	1				9730	1	

Appendix: Pollution event reports

NATIONAL INCIDE	ENT REPORTING SYSTEM		INCIDENT SUMMARY
CORE EVENT DETAI	LS:		
Incident No:	00026250	Reported To:	Denis Carroll
Date & Time Notified:	23/08/2001 11:59	Date & Time Observed:	
Reporter Name:	thomas	Feedback Requested:	Y
Reporter Contact Details:	Work Telephone: 01841 532529		
Event Details:	stream that runs by property is smelling a	nd has a greasy thick slick	on the surface
		¥	·
INCIDENT LOCATION	N DETAILS:		
Confirmed Location:	Treator	Incident NGR:	SW 90436 75140
Catchment:	Camel and Menalbyl (Tidal)	Local Authority:	NORTH CORNWALL DISTRICT
Operational Area:	Cornwall - South West	Public Facing Area:	Cornwall
INCIDENT ASSESSME	ENT DETAILS:		
Passed for Assessment To:	Chris Leach	Lead Investigating Officer:	Chris Leach
Team:	EP-Assistants (C)]	
Agency Business:	Y	Event Substantiated:	Y
CICS Incident:	Y	Attendance Priority:	Immediate 2 hours (office hours)
Attendance Justification:	Local Issues	Potential Environmental Impact:	3
Duplicate Report References:			
INCIDENT INVESTIGA	ATION & CLASSIFICATION DETAILS:		
Investigation Report:			roperty discoloured and smelly. Fat visible erry smell and water dark brown in colour.
	Visited Treator Farm and spoke to farm w met at Trecerus Industrial Estate and acco		rd Banhury not on site - mother contacted,
			drain discharging into stream. Further p in farmyard which had caused slurry to
	Discharge had stopped. Sump unblocked a	nd farmer agreed to clear (out slurry in stream and irrigate to land.
	Stream sampled at Trevone Bay, in situ Ar of any impact from u/s pollution.	nmonia 0 mg/l. BACTIC, C	GEN & SSLDs samples taken - no evidence
	29/08/01 Trevone Stream checked at Treat	or - running clear.	
	Discussed with Rob Torr and agreed to rec extenuating personal cirmcustances of farm		e to first time offence, localised impact and
Agency Resource	Level C		4
Impact: Report Created By: NIRS2 A	Application Printed: 01/03/02, 11:04	Air: Pg 1 of 2 Pgs	

NATIONAL INCIDE	NT REPORTING SYSTEM		INCIDENT SUMMARY
Environmental Impact Land:	4	Environmental Impact Water:	3
Action Taken:			
Alleged Offender Name:	Mr Richard Banbury		
INCIDENT CLOSURE	DETAILS:		
Incident Closed Date:	29/01/2002	Closure Authorised By:	Janie Gray

NATIONAL INCIDI	ENT REPORTING SYSTEM		INCIDENT SUMMARY
CORE EVENT DETAI	LS:		
Incident No:	00010814	Reported To:	Chris Leach
Date & Time Notified:	22/06/2001 13:20	Date & Time Observed:	
Reporter Name:	Mike Wicketts T J International	Feedback Requested:	Y
Reporter Contact Details:	Work Telephone: 01841 532691		
Event Details:	Sewage coming out of surface water drain	on Trecerus Industrial Es	state.
INCIDENT LOCATION	N DETAILS:		
Confirmed Location:	Trecerus Industrial Estate	Incident NGR:	SW 9062 7478
Catchment:	Camel and Menalhy! (Tidal)	Local Authority:	NORTH CORNWALL DISTRICT
Operational Area:	Cornwall - South West	Public Facing Area:	Cornwall
INCIDENT ASSESSME	ENT DETAILS:		145
Passed for Assessment To:	Pete Mortimer	Lead Investigating Officer:	Pete Mortimer
Team:	EP-Central-Bodmin]	
Agency Business:	Y	Event Substantiated:	Y
CICS Incident:	Y	Attendance Priority:	Immediate 2 hours (office hours)
Attendance Justification:	Local Issues	Potential Environmental Impact:	3
Duplicate Report References:			
INCIDENT INVESTIG	ATION & CLASSIFICATION DETAILS:		
Investigation Report:	Premises if TIC International, Trecerus Stream- conferred with complainant - end - proprietor Mr Jim Read. Permission gi and observed at 15.10hrs exiting drain to other points or premises. Further enqui samples of discharge, upstream and down and representative of Steins restaurant fre	s Industrial Eestate, Pads quiries on the estate lead to ven by Mr Read to dye te stream. Observed by Mr F ries at Units 4B, 4c and astream of discharge, phot om Unit 4c over remedial a point of and below discha	m surface water drain in headwall below stow. Discharging to trib of the Trevone of Unit 4a -St Merryn Laundry Srevices Ltd est toilet on premises -1504 dye introduced Read. No dye having been introduced to any 4d to trace source of problem. Obtained ographs etc. Further liaison with Mr Read actions to investigate drains 23.06.2001 and rge. Return to Bodmin with samples and
Agency Resource Impact:	Level C	Environmental Impact Air:	3
Environmental Impact Land:	4	Environmental Impact Water:	3
Action Taken:			
Alleged Offender Name:	Mr J Read		
INCIDENT CLOSURE Report Created By: NIRS2 A		6 Pg 1 of 2 Pgs	

NATIONAL INCIDENT REPORTIN	G SYSTEM	4		INCIDENT SUMMARY			
Incident Closed Date:		Closure Authorised By:					
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Report Created By: NIRS2 Application	Printed: 01/03/02, 11:46	6 Pg 2 of 2 Pgs					

Incident Number.... SW59860 Priority.... No attendance unction... Environment Protection-Water Pollution (EP) Reported by..... MR ROBERT CLARK (by) Phone 01841 532813 Peporters Address.. OLD COACH HOUSE, TREATOR, PADSTOW ncident Location.. TREATOR, PADSTOW Place (Gazetteer).. TREVONE 25A SW890750 Water Stretch ID... 49/25A/016/01 Area..... South West - Cornwa atchment..... TIDAL CAMEL Watercourse..... TREVONE STREAM tretch..... SOURCE TO TREVONE ish Dead.....0 buffer overflow. Use SET command to reduce ARRAYSIZE or increase MAXDATA. DETAILS Effluent from Sycamore Bungalow next door owned by Mr Thompson getting into seream - ongoing for 7 years!
Passed to Colin Williams. New consent currently being processed by DC. Minimal discharge but will be rectified before start of bathing season. A ready visited as part of consent application. Occurred at 1530 on 06-FEB-2001 Received at 1530 on 06-FEB-2001 by Cornwall Environment Protection Target Date SAMPLES Namples are recorded as being specifically relevant to this incident.

Incident Number SW59466 Priority Immediate (2 Hours) unction Environment Protection-Water Pollution (EP)
Reported by JOHN EVANS (by) Phone 01841 521637 Reporters Address ncident Location. TREVONE BEACH, TREVONE, PADSTOW Place (Gazetteer). TREVONE 25A SW890750 Water Stretch ID 49/25A/000/00A Area South West - Cornwall atchment TIDAL CAMEL MENALHYL Watercourse MARINE COAST Tretch TREVOSE HEAD - STEPPER POINT ish Dead 0
beffer overflow. Use SET command to reduce ARRAYSIZE or increase MAXDATA. DETAILS ON BEACH AT 1600 TODAY AND THE STREAM WAS GREEN AND SMELT OF SLURRY. PASSED TO IN STEPHENSON 0930 22/1/01 Mrs Corbet 01841 520229 rang re incident at Trevone beach which they saw yesterday,
Occurred at 1809 on 21-JAN-2001 Target Date 2009 on 21-JAN-2001
SAMPLES
Namples are recorded as being specifically relevant to this incident.

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Incident Number.... SW57387
                                Priority.... 1 Day (24 Hours)
  unction... Environment Protection-Water Pollution (EP)
 ......
 Reported by ..... MR WICKETT (by ) Phone 01841
 Reporters Address..
 ncident Location.. TRECERUS INDUSTRIAL ESTATE lace (Gazetteer).. PADSTOW 25A SW910750
 Water Stretch ID... 49/25A/000/00A Area..... South West - Cornwa
 atchment..... TIDAL CAMEL
                                MENALHYL
 Watercourse..... MARINE COAST
 tretch..... TREVOSE HEAD - STEPPER POINT
  sh Dead......
buffer overflow. Use SET command to reduce ARRAYSIZE or increase MAXDATA.
 DETAILS
Soapy water coming out from tank at T J International, Trecerus Industrial
Emate, Padstow.
Pussed to Pete Mortimer. Attended and investigated-weak ammonia [1-3mg/1] in what
appears old discharge in bank- All drians checked and Trecerus Pump Station but
neobvious connection-SWW attended and found no sewers in vicinity- from
complainant advised that there are several old septic tanks and cesspools in
area he will try to obtain plans. Minor impact on receiving stream at moment
-amples obtained-follow up enquiries to be made as this appears to be
groundwater infiltrartion of an old septic siytem in the industrial estate.
Follow up by SWW 3-10-00 who carried out dye testing of their system-no
connection to present discharge found.
Firm complainant this is believed to be possibly from an old septic tank that
ha been disconnected years ago when mains sewerage came to the
area-investigations will be carried out by TJ International but requires
exavations during next few weeks to confirm or otherwise-they will write and in orm of any findings.
______
Occurred at 1335 on 02-OCT-2000
Received at 1335 on 02-OCT-2000 by Cornwall Environment Protection
Target Date 1335 on 03-OCT-2000
 Samples are recorded as being specifically relevant to this incident.
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Courred at 1151 on 04-OCT-2000

Received at 1151 on 04-OCT-2000 by Regional Communications Centre

Target Date 1351 on 04-OCT-2000

SAMPLES

Samples are recorded as being specifically relevant to this incident.