EA-South West Box 12

CORNWALL AREA

INTERNAL REPORT

POLLUTION RISK ASSESSMENT

REMEDIATION EXERCISE

RIVER FOWEY

CATCHMENT

May 1996

Authors: M Youell
J Trethewey (SWW)

Rob Robinson
Area Manager (Cornwall)

170

ENVIRONMENT AGENCY

Information Services Unit

Please return or renew this item by the due date

Due Date

FOREWORD

The River Fowey catchment covers some 200 square kilometres, from Bodmin Moor in mid Cornwall, south to the tidal limit at Lostwithiel.

The catchment is significant in regional terms for providing public water supply from Colliford and Siblyback reservoirs and the River Fowey at Restormel Water Treatment Works.

Within the catchment many industrial, commercial and domestic properties store and use materials which, if discharged, could be harmful both to the river ecosystem and sewage and public water supply treatment processes.

It is important, therefore, that the storage and handling of these materials is carried out with great care to prevent possible detriment to the environment or public health. This can best be achieved through undertaking effective pollution prevention measures.

ENVIRONMENT AGENCY
120439

INDEX

APPENDICES

POLLUTION RISK ASSESSMENT AND REMEDIATION EXERCISE

RIVER FOWEY CATCHMENT

INTRODUCTION

The River Fowey catchment is mainly rural with some small industrial estates. The major salmonid fishery and the abstraction point for potable water at Restormel make the River Fowey a high priority area for pollution prevention. A serious incident could result in the closure of the intake and consequent disruption to the drinking water supply to approximately 50% of Cornwall's population.

It was decided that the NRA and SWW would undertake a joint pollution risk assessment and remediation programme in the River Fowey catchment.

The purpose of the visits was:

- **To collect information about the sites - their processes, storage facilities and drainage arrangements.**
- **To identify inadequacies.**
- **To advise on and seek improvements.**
- **To educate management and staff in best environmental protection practice.**

The information is kept on file at the NRA (now Environment Agency) Bodmin office and a summary supplied to SWW.

METHODOLOGY

A Task Force operation was undertaken in the River Fowey catchment. The format for the investigation comprised a site by site inspection of premises with the potential to pollute. Pollution prevention advice was given and a Risk Assessment of each site recorded. The numerical Risk Assessment value was based on a local system of scoring - please see Appendix 2. Premises were divided into Industrial, for which this is the report, and Agricultural (see separate report).

The Industrial sites were grouped into geographical areas:

- Doublebois
- Parkway
- Cooksland
- Trago Mills

All sites were jointly visited by an officer from the NRA (M Youell) and an officer from SWW (J Trethewey).

Information collected included contact names, emergency phone numbers, lists and quantities of chemicals and fuels/oils stored, effectiveness of storage arrangements and the adequacy of surface water and foul drainage systems.

Where appropriate, guidance was given on required improvements and pollution prevention awareness was raised.

RESULTS

Industrial sites visited totalled 36.

Defective areas and installations totalled 14

The summary of the results from the site inspections are tabulated in Appendix 3.

SUMMARY OF STATISTICS

POLLUTION RISK CATEGORY	NUMBER INADEQUATE
Fuel/oil storage tanks	6
Chemical storage tanks	2
Vehicle washing areas	1
Surface water drainage	8
Waste water drainage	1

% of sites visited found to be inadequate in some respect: 40.

DISCUSSION

The results in the summary table identify the following:

1) Substantial quantities of potentially polluting fuel oils and toxic chemicals are being used and stored by businesses in the River Fowey catchment.

2) 40% of the sites inspected had one or more identifiable faults, with a total of 18 problems on just 36 sites.

3) Further investigation work is already underway at the Parkway Timber Treatment Plant site where high levels of Copper, Chrome and Arsenic deposits have been identified in the ground.

4) Business premises owners and managers were receptive to information and willing to co-operate. It is essential to update this information and continue liaison.

5) This report addresses the problems at industrial units. It is important to view the catchment as a whole, in particular with respect to the Agricultural industry and the major transport links of road and rail which are routed through the River Fowey catchment.

6) The photographs in Appendix 5 show some examples of Pollution Control. In Appendix 6 are examples of the pollution prevention literature which has been used to give guidance where appropriate.

CONCLUSION

The study has clearly shown that within the River Fowey catchment there is a potential for pollution to occur.

It is essential that pollution prevention practices are improved, given the short time of travel (please see Appendix 4) from some of the highest risk sites to the abstraction point.

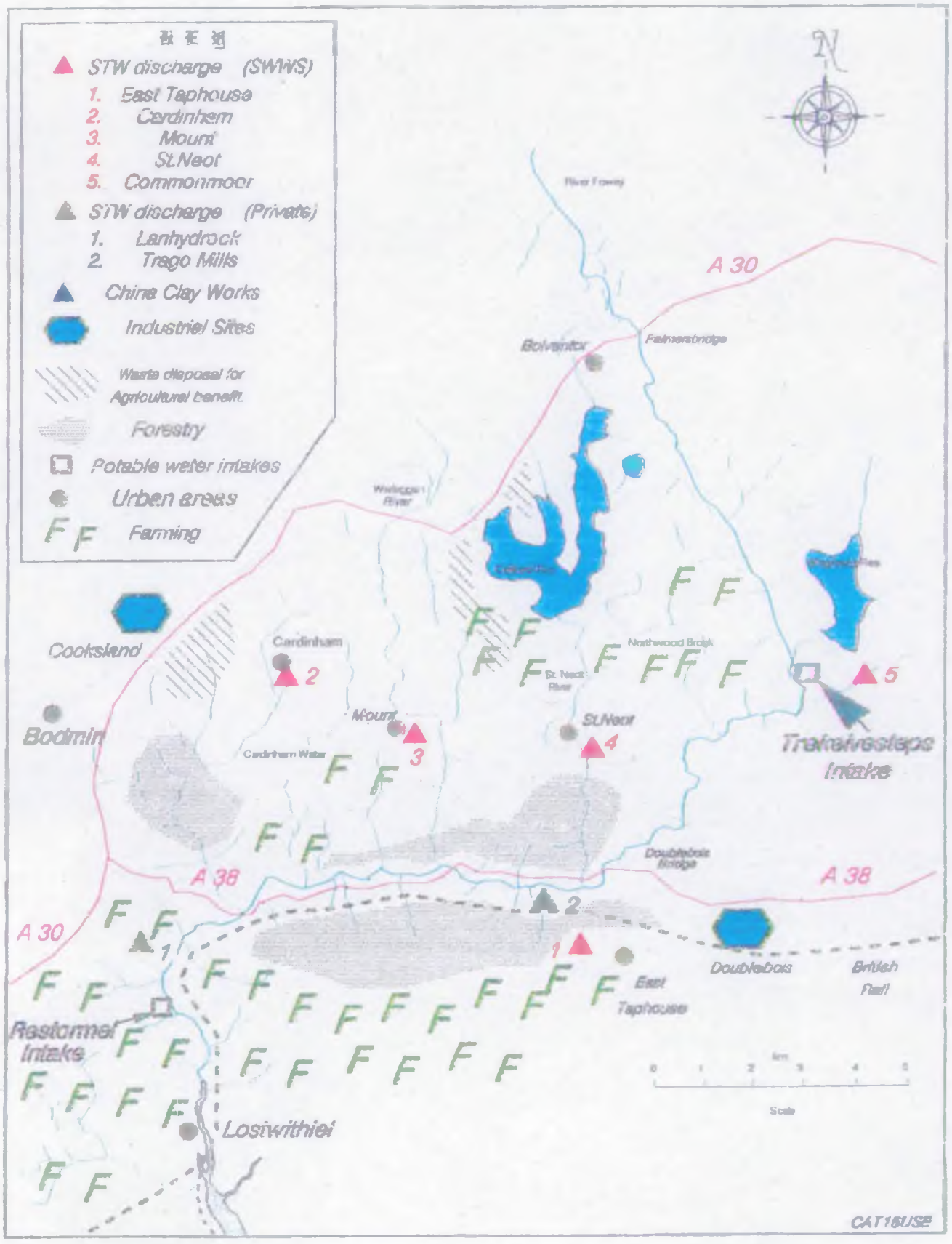
Every effort must be made to minimise the risk of pollution by maintaining an efficient and effective presence and liaison within the River Fowey catchment.

RECOMMENDATIONS

- Undertake revisits in the financial year, 1996/97, to all sites where improvements have been recommended.
- Issue Notices To Do Works (under the Environment Act 1995) if appropriate, at all sites where improvements have <u>not</u> been completed and are not planned.
- Target extra resources towards pollution prevention education.
- Extend this proactive approach to other catchments, particularly where there is a public water supply.

K:\USERS\AMC\AEM\WQ09056M11

POLLUTION RISK ASSESSMENT AND REMEDIATION EXERCISE
RIVER FOWEY CATCHMENT



APPENDIX 2

POLLUTION RISK ASSESSMENT AND REMEDIATION EXERCISE
RIVER FOWEY CATCHMENT

RISK ASSESSMENT - CATCHMENT INVENTORY
SITE DATA SHEET

SITE ADDRESS:

DATE:
INSP BY:
NGR:

OCCUPIER:

TEL NO:

			SCORE
A	RECEIVING ENVIRONMENT		
1	RIVER		
2	AMENITY/FISHERY/BEACH		
3	MAJOR FISHERY		
4	POTABLE ABSTRACTION		
5	STRATEGIC ABSTRACTION		
		TOTAL	
B	SITE		
1	STORAGE INADEQUATE		
2	STORAGE INSECURE		
3	POLLUTANT LOAD SIGNIFICANT		
4	POLLUTANT LOAD MAJOR		
5	SITE OPERATIONAL PRACTICE POOR		
6	WATERCOURSE WITHIN 100M		
7	WATERCOURSE WITHIN 20M		
8	SLOPE TO WATERCOURSE SIGNIFICANT		
9	PREVIOUS HISTORY OF MINOR POLLUTION		
10	PREVIOUS HISTORY OF SIGNIFICANT/MAJOR POLLUTION		
		TOTAL	

A B

OVERALL SITE SCORE:

WORK REQUIRED TO REDUCE RISK:

WARNING LETTER SENT: YES NO

REVISIT REQUIRED: YES NO TIMING:

DATE ENTERED ON CATCHMENT SUMMARY SHEET: YES NO

TASK FORCE/CATCHMENT INVENTORY

NAME OF SITE AND CATCHMENT NO:

WATERCOURSE:

INVESTIGATING OFFICER:

NGR:

DATE	SOURCE OF PROBLEM	DISCHARGING YES/NO	1. TYPE OF DISCHARGE	WEATHER DEPENDENT? YES/NO	FORMAL SAMPLE YES/NO	REVISIT YES/NO	COMMENTS	RISK VALUE		TOTAL
								A	B	

1. F = FARM ST = SEPTIC TANK O = OTHER
T = TRADE SEW = SEWAGE C = CONSENTED DISCHARGE

K:\USERS\AMC\AEM\WQ09056M11

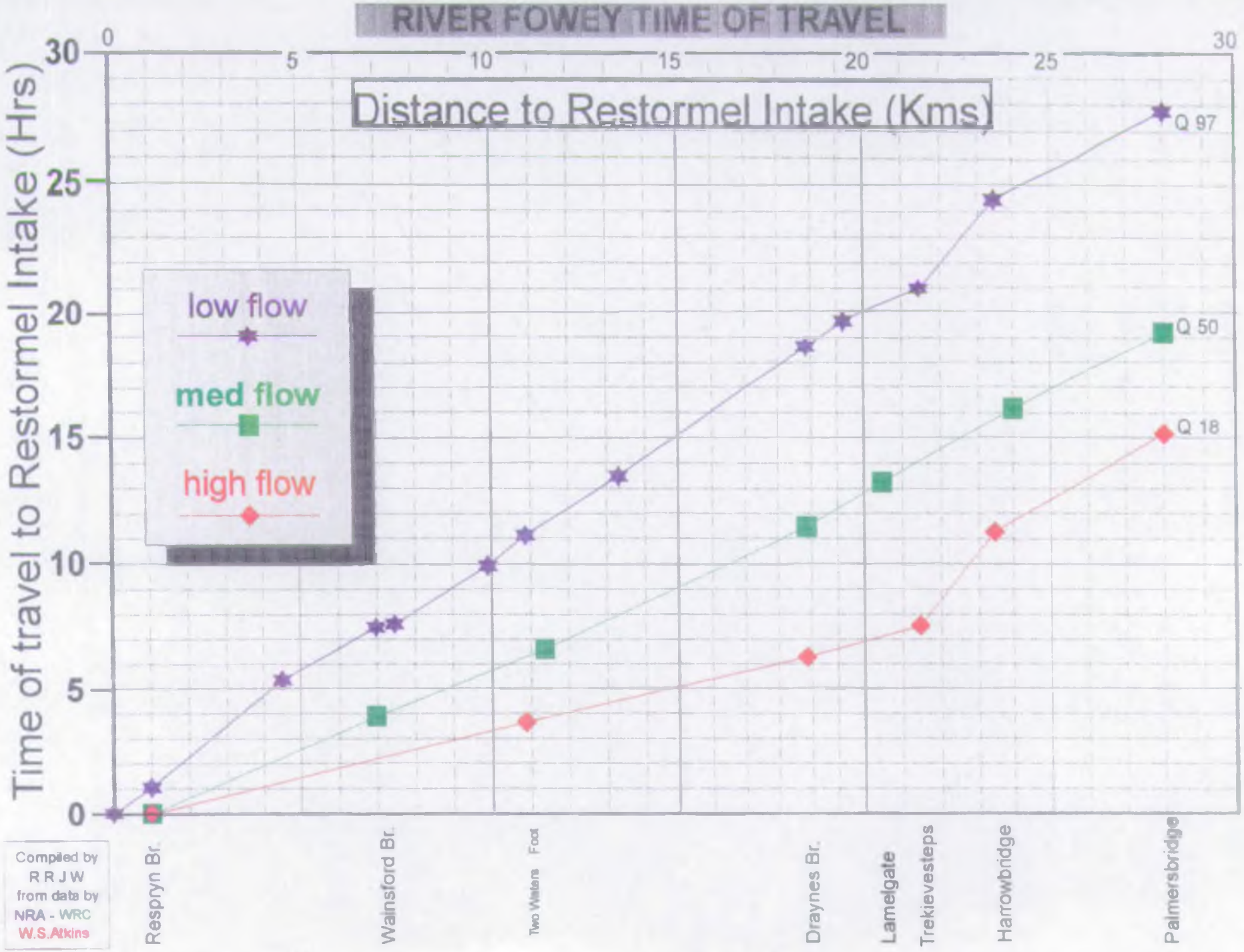
APPENDIX 3

POLLUTION RISK ASSESSMENT AND REMEDIATION
RIVER FOWEY CATCHMENT

DEFECTIVE AREA

INDUSTRIAL SITE	SITE ADDRESS	RISK VALUE	REVISIT	FUEL STORAGE	CHEMICAL STORAGE	VEHICLE WASH	SURFACE DRAINAGE	WASTE TREATMENT
DOUBLEBOIS	CLASSIC CARS	5/1	YES				✓	
	WEST COUNTRY OILS	5/1	YES	✓				
	CORNISH FORD SPARES	5/2	YES				✓	
	BOOTH ENGINEERING SERVICES	5/1	NO					
	WESTCOUNTRY MOTOR SPORTS, UNIT 3	5/2	NO					
	CORNISH DIESEL SERVICES, UNIT 1	5/0	NO					
	FIELDS - UNIT 2	5/0	NO					
	UNIT 4	5/0	NO					
	RJ & SP OSBORNE COAL YARD	5/1	YES	✓				
	DOUBLESBOIS COMMERCIAL SERVICES	5/0	NO					
	CHRISTIAN SMITH AGRLE	5/1	YES	✓				
	UNIT 5 (1A & 1B)	5/0	NO					
	SOLARTER	5/0	NO					
	TJ & CM GILBERT & SON	5/2	YES				✓	
	L & M RICHARDS	5/1	NO					
	WELDING CONSTRUCTION ENGRS	5/1	NO					
ARKWAY	WHITE HOUSE	5/3	YES				✓	
	WADEBRIDGE FORKLIFTS	5/2	YES	✓				
	ALL STEEL FABRICATION	5/1	NO					
	PARKWAY TIMBER CO LTD	5/6	YES		✓		✓	
RAGO MILLS	TRAGO MILLS	5/5	YES				✓	✓
OOKSLAND	BODMIN SCAFFOLDING		NO					
	STEVE BALL		NO					
	LEES WELDING		NO					
	HOLT JCB LTD		YES	✓		✓		
	LONG-CLOCKS		NO					
	AUGUSTE ENGINEERING		NO					

INDUSTRIAL SITE	SITE ADDRESS	RISK VALUE	REVISIT	FUEL STORAGE	CHEMICAL STORAGE	VEHICLE WASH	SURFACE DRAINAGE	WASTE TREATMENT
COOKSLAND CONTD	SERCK		YES		✓			
	YEOVIL STEEL		NO					
	SCHIEMANN TOOLS LTD		NO					
	ST MERRYN MEAT		YES				✓	
	UK PLANT		NO					
	BODMIN PLANT		NO					
	WH SMITH		NO					
	BODMIN FASTENINGS		NO					
OTHER	ZINN CONSTRUCTION	5/4	YES	✓			✓	


RIVER FOWEY TIME OF TRAVEL
Distance to Restormel Intake (Kms)
Time of travel to Restormel Intake (Hrs)
0
5
10
15
20
25
30
low flow
med flow
high flow
Q 97
Q 50
Q 18
Respryn Br.
Wainsford Br.
Two Waters Foot
Draynes Br.
Lamelgate
Trekievesteps
Harrowbridge
Palmersbridge
Compiled by
R R J W
from data by
NRA - WRC
W.S.Atkins

POLLUTION RISK ASSESSMENT AND REMEDIATION EXERCISE
RIVER FOWEY CATCHMENT

POLLUTION RISK ASSESSMENT AND REMEDIATION EXERCISE
RIVER FOWEY CATCHMENT

APPENDIX 6

POLLUTION RISK ASSESSMENT AND REMEDIATION EXERCISE
RIVER FOWEY CATCHMENT

NATIONAL RIVERS AUTHORITY

NRA

POLLUTION PREVENTION GUIDELINES

PREVENTING POLLUTION ON INDUSTRIAL SITES

These notes are for guidance only. Each site will be considered according to the individual circumstances and early consultation with your local National Rivers Authority Water Quality Staff is advisable. Details of local NRA offices will be found at the end of these guidelines.

Note that in these guidelines the term 'oil separator' is used. This has the same meaning as 'oil interceptor'.

1. GENERAL

Under the Water Resources Act, 1991, the NRA is responsible for the protection of "Controlled Waters" from pollution and it is an offence under the Act to cause such pollution, either deliberately or accidentally. "Controlled waters" include all water-courses and water contained in underground strata (or "groundwater"). In addition, the formal consent of the National Rivers Authority is required for any discharge to controlled waters.

2. INTRODUCTION

Most water pollution incidents are avoidable. Careful planning of procedures and facilities can reduce the risk of spillage and simple precautions can prevent a spillage becoming a pollution. Most of the measures needed to prevent pollution cost very little, especially if they are included at the design stage. In contrast the costs of cleaning up after a pollution can be very high. Moreover, pollution prevention measures may offer substantial economic benefits. These include saving expensive raw materials and products, fewer site accidents and a reduced risk of prosecution for water pollution offences. Introduction of pollution prevention measures is the first step, but to be effective employees must be trained in their implementation.

3. THE INDUSTRIAL UNIT

The design and location of the industrial unit is important. Ensure that:-

a. The surface water and foul drainage systems on site are adequate to cope with any likely discharges. The disposal of trade effluent could pose a serious problem if it can not be discharged to a public foul sewer.
b. Industrial processes and storage facilities are located to prevent any risk of contamination of surface or underground waters.
c. A comprehensive site drainage plan is prepared, updated and kept available on site at all times.
d. Manhole covers, grids and gullies are colour coded to identify the service.

4. SURFACE WATER DRAINAGE

Pollution problems are often the result of the misuse of surface water drains or wrongly connected effluents. Care must be taken to ensure that only uncontaminated water discharges to the surface water system.

a. In many cases an oil separator will be necessary to prevent oil discharging from the site. Guidance on this is available from the NRA (Reference 1). It is important to note that oil separators must be inspected and cleaned regularly and that they are ineffective if detergents or degreasers are used. They should not be used for soluble oils.
b. Uncontaminated roof water should be discharged directly to the surface water system, and should not pass through any oil separator.
c. Roof water down pipes should connect to the surface water drainage system via direct drain points or sealed top side entry gullies. Open gullies or grates should be avoided.
d. Cut-off valves can provide additional security and could be installed after the oil separator. This would ensure that a spillages could be retained 'on-site' so that appropriate clean-up measures can be instigated. They also provide a way of retaining contaminated 'fire water' in the event of a fire.

5. TRADE EFFLUENT

In addition to process effluent, compressor and boiler blowdown, steam condensate, cooling water, pressure testing liquids, air conditioning water and vehicle and plant cleaning effluent are all trade effluents. Before making a discharge, you should consider carefully the alternatives, including recycling and reuse on site. All such discharges will require a consent, either from your sewerage undertaker, for discharges to the foul sewer, or from the NRA, for discharges to watercourse or groundwater. In either case you are responsible for complying with the terms of the consent, and failure to do so may result in prosecution. It is essential that all discharges should be made to the proper system. You should ensure that:

a. Responsibility for the discharge is clearly defined.
b. The effluent discharge point is clearly marked.
c. The sampling point is safe and accessible at all times.
d. Regular inspections are made and, if appropriate, tests carried out.

Wrongly connected effluents can cause severe pollution problems, which may prove difficult to trace and costly to remedy. Ensure that new facilities such as sinks, wash basins, showers, canteens, laboratories and washdown areas are properly connected to the foul sewer and do not discharge to the 'nearest' drain, which is quite often a surface water sewer.

6. DELIVERY AND HANDLING OF MATERIALS

The handling of materials always involves a risk of spillage and accidents. It is therefore important to identify these risks so they can be minimised.

a. All loading/unloading areas should be designated, marked and isolated from the surface water drainage system.
b. Routes of transfer of materials should also be identified so that any necessary protection can be incorporated.
c. If possible yard areas used for storage, handling and manufacturing should be roofed.
d. Bunding, in the form of ramps or stepped access, may be required to isolate high risk areas from the surface water system.
e. All deliveries of oil and potentially hazardous materials must be supervised by a responsible person and any spillage contained and reported immediately.
f. Tankers should discharge via a lockable fixed coupling within the bunded area.
g. Where possible pipelines should be sited above ground. If a pipeline is to be installed underground it should be placed in a protective sleeve or duct and subject to regular inspection and testing.

7. STORAGE FACILITIES

a. Where it is safe to do so, liquids should be stored above ground. However, storage at or above roof level should be avoided.
b. All storage tanks, drums and containers should be situated within bunded areas constructed to contain 110% of the tank capacity, in order to contain fully any spillage. Tanks should be clearly marked with their contents and volume and bund walls must not have drainage holes. Detailed guidance on above ground oil storage is available from the NRA (Reference 2).
c. Always use appropriately sized and constructed tanks or containers that will not leak or corrode.

8. WASTE MANAGEMENT

Where possible all waste should be minimised by reviewing its production on site. If waste cannot be eliminated, it must be properly stored and disposed of. Litter is polluting and must not be allowed to enter a watercourse. It is therefore recommended that skips should be netted or waste storage areas enclosed to prevent litter being blown out.

a. Swarf skips and refuse compactors should be sited on an impermeable base within a raised kerb area, isolated from the surface water drainage system and preferably covered, as they often leak causing pollution of surface or groundwaters. Any leakage should be cleaned up straight away using sand or other absorbent material.

b. Waste solvents and used oil must be securely stored in bunded compounds prior to collection by an authorised waste contractor. A leaflet on the problem of solvents and a guidance note dealing with used oil are available from the NRA.
c. Under the Environmental Protection Act, 1990, producers of waste have a duty of care to ensure that it is properly dealt with. Waste must be properly stored on site and the producer has a duty to ensure that the waste contractor who removes it is registered and is informed of its nature (see Reference 3). Full details are available from your local Waste Regulatory Authority.

9. ROUTINE MAINTENANCE

A routine programme of checking oil separators, effluent treatment plants, storage tanks (both above and below ground), drains, bund walls, notices and any pollution prevention equipment should be established. There should be a clear reporting procedure leading to rapid corrective measures.

10. CLEANING

All cleaning activities, including the cleaning of equipment, yards, floors, containers and vehicles can produce large volumes of polluted water. All cleaning agents are potentially polluting, even if manufacturers claim they are "biodegradable" or acceptable for discharge to drains. Water containing detergents, disinfectants, degreasers or any other cleaning agent must not be allowed to enter a surface water drainage system or soakaways. This is also the case for effluent produced from the use of pressure or steam cleaners. A Guidance Note dealing with these is available from the NRA (Reference 4).

a. All cleaning and washing operations should be carried out in designated areas isolated from the surface water system and draining to the foul sewer (with the approval of your sewerage undertaker). This area should be clearly marked and a kerb surround is recommended.
b. Spillages should be contained when possible. **Do not** wash them down the surface water drain.
c. Ensure all staff and contractors working on site are aware of the disposal facilities for wash waters by using clear signs. Put up notices which identify surface water

gullies indicating clearly that they should not be used for the disposal of wastewater.

d. Do not use detergents or degreasers when cleaning yard areas. Not only are these polluting, but they will render any oil separator useless.
e. Internal floor gullies, if provided, are readily contaminated and must be connected to the foul sewer.

11. STAFF TRAINING

Staff should be made aware of the relevant legislation and know their responsibilities. A training programme may be required to inform both staff and contractors working on site of the importance of pollution prevention. Use newsletters, posters and notices to reinforce the message. Your local NRA may be able to assist with materials and speakers. Key staff should be familiar with the drainage system, and exercises may be appropriate to rehearse actions in the event of accidental spillages. All staff should have access to important telephone numbers such as the Emergency Services and the local NRA and Water Company. Encourage staff to identify pollution risks and remedies, perhaps by using a staff suggestion scheme.

12. EMERGENCY PLANS

Carry out a complete inspection of the site to identify potential sources of pollution. Where these can be removed by changing practices, materials or other means, draw up an action programme to deal with them. An inventory of chemicals held should be made, updated and kept available on site. Prepare contingency plans for all eventualities and locate instruction notices, appropriate equipment and materials (such as shovels, sand, absorbent materials and drain bungs) at accessible key locations. Consider the effect of a major fire and plan how to deal with contaminated fire water. Ensure that a named contact is available at all times to deal with emergencies.

13. SECURITY

Protect your site from vandalism and theft. Many pollution incidents are the result of poor security. Lock gates, doors and valves and make fences secure. Where possible, store materials under cover.

14. REFERENCES

1. Use & design of Oil Separators	PPG3	NRA
1. Above Ground Oil Storage Tanks	PPG 2	NRA
2. Waste Management - The Duty of Care - A Code of Practice	ISBN 0-11-752557-X	HMSO
3. High Pressure Water & Steam Cleaners	PPG13	NRA

In addition, the NRA produces a number of further guidelines and leaflets to help industry to avoid pollution. These are available, free of charge, from your local NRA office.

For any further information, contact your local NRA Water Quality office at:-

ANGLIAN REGION
Peterborough 0733 371811

NORTHUMBRIA AND YORKSHIRE REGION
Leeds 0532 440191
Newcastle 091 213 0266

NORTH WEST REGION
Warrington 0925 53999

WELSH REGION
Cardiff 0222 770088

SEVERN-TRENT REGION
Solihull 021 711 2324

SOUTHERN REGION
Worthing 0903 820692

SOUTH WESTERN REGION
Exeter 0392 444000

THAMES REGION
Reading 0734 535000

... or in the event of an emergency at all times on Freefone 0800-807060

Head Office: *Rivers House, Waterside Drive, Aztec West, Almondsbury, Bristol, BS12 4UD*
Telephone 0454 624400
Fax 0454 624409

recycled paper

NATIONAL RIVERS AUTHORITY

NRA

POLLUTION PREVENTION GUIDELINES

GENERAL GUIDE TO THE PREVENTION OF POLLUTION OF CONTROLLED WATERS

These notes are for guidance only. Each site will be considered according to the individual circumstances and early consultation with your local National Rivers Authority Water Quality Office is advisable. Details of these offices will be found at the end of these guidelines.

1. GENERAL

The NRA is responsible for the protection of "controlled waters" from pollution under the Water Resources Act of 1991, and it is an offence under the Act to cause such pollution, either deliberately or accidently. "Controlled waters" include all watercourses and water contained in underground strata. The formal consent of the National Rivers Authority is required for many discharge to controlled waters. This includes both direct discharges and discharges to soakaways. Such consents are not granted automatically.

2. SURFACE WATER DISPOSAL

a. Oil Separators (Interceptors)

An oil separator may be required, depending on the type of development. A set of guidelines detailing when a separator is required and separator design is available.

b. Car Parks and Yards

Due to the risk of pollution from oil, petrol or chemical spills, surface water systems serving these areas may require oil separation. Covered areas should drain to the foul sewer if possible. Under some circumstances a cut off valve may be required to prevent polluting discharges reaching controlled waters.

c. Garage Forecourts and Fuel Delivery Areas

Due to the potential for pollution from these sites, oil separation will be required. Under normal circumstances site drainage may pass to the surface water system, although in exceptional cases connection to the foul sewer may be necessary. Effluent from the cleaning of forecourts must not be discharged to controlled waters. The provision of cut-off valves and raised kerb surrounds may be required.

d. Vehicle Wash

Vehicle wash waters should not be discharged to the surface water drains, watercourses or soakaways. Developers should consult the Water Utilities Trade Effluent Control staff regarding the acceptability of discharging this drainage to the foul sewer. Alternatively, vehicle wash recycling systems are available.

e. **Unloading Bays and Waste Compactor Sites**
Consultation with the NRA is required as these areas may have to be isolated and connected to the foul sewer, particularly if chemicals, refuse or other polluting matter is handled. Flow cut-off valves and raised kerb surrounds may be required.

3. **OIL STORAGE AND PIPELINES**

a. Separate guidelines for above ground oil storage tanks are available. In general any oil storage tank and oil stored in drums should be sited on an impervious base within an oil-tight bund. No damp course should be provided in the bund wall structure and there should be no drainage outlet. The bunded area should be capable of containing 110% of the volume of the tank and all fill pipes, draw pipes and sight gauges should be enclosed within its curtilage. The tank vent pipe should be directed downwards into the bund.

b. Underground oil tanks and pipelines may be subject to damage and corrosion and above ground facilities are preferred. When this is not practicable appropriate protective measures against damage and corrosion should be provided. In some vulnerable areas underground tanks may be subject to special restrictions.

4. **SEWAGE DISPOSAL**

All foul sewage from any development should pass to the local foul sewer if possible. Where there is no foul sewer available or specific problems arise, then other arrangements should be discussed with the NRA. The alternatives will normally require a formal consent from the Authority. Further advice is available in separate guidelines regarding disposal of sewage.

5. **CHEMICAL STORAGE AREAS**

Drainage from these areas may present special problems and full consultation with the NRA should take place to mimimise the risk of pollution.

6. **CONSTRUCTION AND DEMOLITION SITES**

Detailed guidelines for these sites and for those working in or near watercourses are available separately. However, it is important to note that where site dewatering is involved the prior approval of the NRA should be obtained. Any discharge must be free from solids in suspension, oil, or other polluting materials.

7. **FLOODPLAIN DEVELOPMENTS**

All drainage manhole covers which lie within a flood plain should be of screwdown cover design and sink waste gullies should be built up above flood level.

For any further information, please contact your NRA Regional Office at:-

ANGLIAN REGION	NORTH WEST REGION	SOUTH WESTERN REGION
Peterborough 01733 371811	Warrington 01925 653999	Exeter 01392 444000
NORTHUMBRIA AND	SEVERN TRENT REGION	THAMES REGION
YORKSHIRE REGION	Solihull 0121 711 2324	Reading 01734 535000
Leeds 0113 237 1811	SOUTHERN REGION	WELSH REGION
Newcastle 0191 213 0266	Worthing 01903 820692	Cardiff 01222 770088

...or at all times in an emergency on Freefone 0800-807060

Head Office: Rivers House, Waterside Drive, Aztec West,
Almondsbury, Bristol, BS12 4UD
Telephone 01454 624400
Fax 01454 624409

recycled paper

PPG1
TH-8/94-5K-C-AKUB

NATIONAL RIVERS AUTHORITY

SOUTH WEST REGION

NRA

POLLUTION PREVENTION GUIDELINES

ABOVE GROUND OIL STORAGE TANKS

These guidelines are produced to assist those responsible for the design, construction, operation and ownership of above ground oil storage tanks. They should be complied with in order to reduce the risk of oil pollution of surface waters or groundwater, sewers and drains. Consultation with your local National Rivers Authority Water Quality Office may be advisable, and details of these offices will be found at the end of these guidelines.

1. GENERAL

All tanks, pipework, gauges and structures should be constructed to recognised engineering standards and in accordance with the appropriate British Standard Institution Specification, Codes of Practice or other statutory requirements. The tank contents should be clearly marked on the tank.

2. THE STORAGE TANK

a. This should be located where it can be inspected externally for corrosion or leaks.

b. It must be provided with sound foundations to avoid settling.

c. The vessel should be protected internally and externally against corrosion and marked with the product type and tank capacity.

d. Water from within a tank should be drawn off to prevent freezing and splitting of the drain/valve during cold weather.

e. Every part of the tank should be within the bund including all valves, filters, filling point and the vent pipe.

3. BUND

a. The bund should consist of a base and surrounding walls which must be constructed or lined with a material impermeable to the oil stored.

b. The bund should not have any damp proof course.

c. Pipework should not pass through the bund. However, if this is unavoidable, the material used for sealing around the pipe must be resistant to attack by the oil stored.

d. The capacity of the bund should be at least 10% greater than the capacity of the storage tank or, if more than one tank is involved, the capacity of the largest tank within the bunded area. Hydraulically inter-linked tanks should be regarded as a single tank.

e. There must be no outlet directly connecting the bund to any drain, sewer or watercourse or discharging onto a yard or ground.

f. Normally rainwater evaporates from within the bund. Should there be a need to remove accumulated rainwater, it can be removed by a manually operated pump discharging through an oil separator of an approved design.

4. THE PIPEWORK

a. All pipework should be sited above ground where possible in order to facilitate inspection and repair and protected against corrosion. The pipework should be well supported and safeguarded from damage in vulnerable areas.

b. Separate fill pipes should be provided for each tank unless the tanks are interconnected by a balance pipe of greater flow capacity than the fill pipe.

c. Fill pipes should be clearly marked with the product type and a tank number where more than one tank is involved.

d. Fill pipes should be located within the confines of the bund and be fitted with a suitable lockable fill cap with chain.

e. Air vent pipes should be positioned so they can be seen easily and directed so that any discharge from them (eg. in the event of the tank being overfilled) is directed into the bund.

f. Where a pipeline has to be laid underground it should be placed in a protective sleeve or duct with open grating covers for inspection purposes. If this is not possible the pipeline should be of a non-ferrous material.

g. Underground pipework should also be protected from damage resulting from excessive surface loading.

h. Remote fill points are not recommended, but where these are unavoidable the surface drainage from such areas should pass through a suitably sized oil separator of an approved design.

i. Pump sets sited outside the bund should where possible be fitted with a non return/check valve installed in the feed line. In some cases a bunded area for the pump set and associated pipework may be required.

5. TANK CONTENTS MEASUREMENTS

a. Adequate means of measuring the quantity of oil should be provided.

b. Dip sticks should be properly calibrated and only used in the tank for which they are intended.

c. Sight gauge tubes should be well supported and fitted with valves which are resistant to unauthorised interference and vandalism. The valve should automatically return to the off position when level readings are not being taken.

d. Dial gauges where fitted should be in a prominent position and regularly checked for accuracy.

e. The use of high oil level alarms (audible and/or visual) is recommended.

6. VALVES OR COCKS

a. These should be as resistant to unauthorised interference and vandalism as possible, with lockable or removable hand wheels.

b. They should be of bronze or steel and arranged so that there can be no discharge outside the bund wall. They should be marked to show whether they are open or closed, and kept locked where not in use and fitted with a blanking cap or plug.

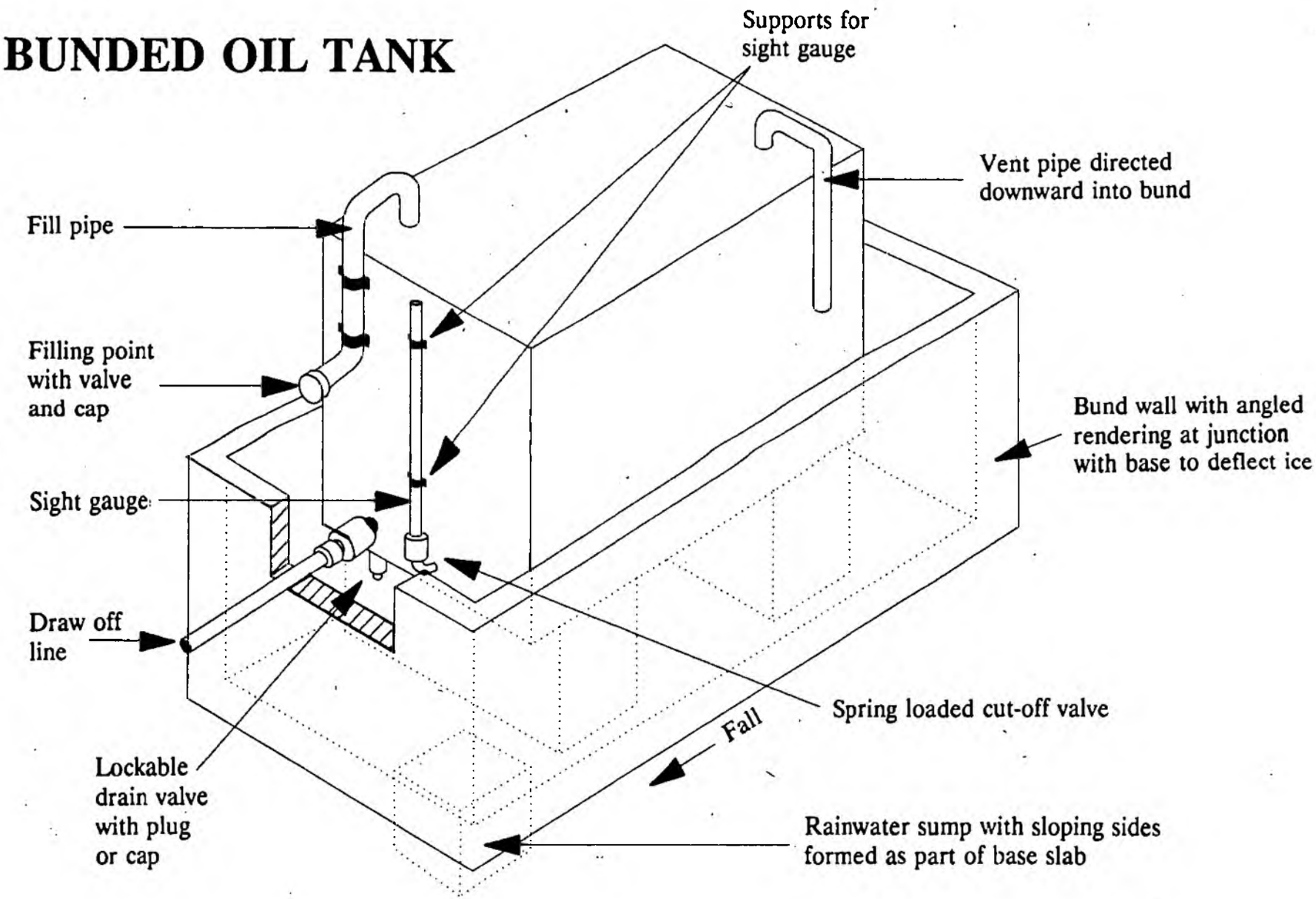
c. Where appropriate, a notice should be displayed requiring that valves and trigger guns be kept locked when not in use.

The drawing on the reverse gives outline details of a typical storage tank installation.

For further information, or in the event of pollution, please contact your nearest NRA office at:-

EXETER *Manley House, Kestrel Way, Exeter EX2 7LQ* **0392 444000**
BODMIN *Sir John Moore House, Victoria Square, Bodmin, Cornwall PL31 1EB* **0208 78301**
... or in emergency at all times on Freefone 0800 378500

BUNDED OIL TANK



NOTE
Flexible pipes must be fitted with automatic closure valve and shall be locked within bund when not in use.

recycled paper

NATIONAL RIVERS AUTHORITY

SOUTH WEST REGION

NRA

POLLUTION PREVENTION GUIDELINES

THE USE AND DESIGN OF OIL SEPARATORS IN SURFACE WATER DRAINAGE SYSTEMS

These notes are for guidance only and early consultation with your local National Rivers Authority Water Quality Office is advisable, as each site will be considered according to the individual circumstances. Details of local offices will be found at the end of these guidelines.

Note that throughout these guidelines the term 'separator' is used instead of the more commonly used 'interceptor'. The terms have the same meaning.

1. SITES NORMALLY REQUIRING OIL SEPARATORS

a. Oil storage and handling areas.

b. Industrial yard areas.

c. Areas where vehicle maintenance is likely to take place.

d. Commercial vehicle parks.

e. Large car parks.

f. Certain lengths of motorway and trunk road designated by the National Rivers Authority as high risk.

g. Lock-up garage blocks (in excess of 10 units).

2. SITES NORMALLY NOT REQUIRING OIL SEPARATORS

a. Small car parks.

b. Most normal stretches of highway.

Note: These areas should be provided with deep seal trapped road gullies to BS.5911 1982 with a minimum water seal of 85mm.

3. SEPARATOR DESIGN CRITERIA

a. The maximum flow received by the separator should be given at least six minutes retention. This flow should be calculated in accordance with the design criteria used for the drainage system which, will usually be based on a rainfall rate of 50mm per hour. **See Appendix A.**

b. Conventional separators (i.e those without integral by-passes or separate oil storage compartments) should be of single chamber construction.

c. Multi-chamber units are discouraged but, if used, six minutes retention should apply to each chamber or to the largest chamber only. The total capacity should not be used for calculating retention times.

d. The minimum overall capacity of any oil separator should be one cubic metre.

e. By-pass style separators, approved by the NRA, may be used for large areas allowing flows generated by rainfall in excess of 5mm per hour to by-pass the separator through a properly designed overflow device.

f. The inlet to the main chamber should not be direct to the water surface.

g. Clean uncontaminated water such as roof drainage should preferably be discharged downstream of the device.

h. Adequate facilities must be provided for inspection of the separator and tanker access must be available for cleaning purposes.

i. Where a separator is provided in a drainage system, trapped gullies are not necessary unless required to satisfy any other regulations.

j. Where it is anticipated that large quantities of silt may jeopardise the efficient operation of a separator, an independent upstream silt trap should be incorporated in the system.

k. Adequate venting arrangements should be incorporated in the structure. In many cases ventilated covers will be sufficient.

l. In some cases flow cut-off valves may be required to isolate the separator.

4. MAINTENANCE

It is important to recognise that oil separators require regular maintenance. A routine programme of inspection should be established, and the separator cleaned as required.

NOTE: A separator will not work properly for soluble oils or if detergents or degreasing agents are present.

Appendix A

Separator Size

To determine the minimum separator capacity required for conventional single chamber units, based on 6 minutes retention, multiply the catchment area in square metres by a factor of 5 to give a separator volume in litres.

e.g. for catchment area 800 sq.m.
Single chamber separator capacity = 800 x 5 = 4000 litres

For approved By-pass units, a factor of 0.5 is used

e.g. By-pass separator capacity = 800 x 0.5 = 400 litres.

For further information, or in the event of pollution, please contact your nearest NRA office at:-

EXETER *Manley House, Kestrel Way, Exeter EX2 7LQ* **0392 444000**
BODMIN *Sir John Moore House, Victoria Square, Bodmin, Cornwall PL31 1EB* **0208 78301**
... or in emergency at all times on Freefone 0800 378500

NATIONAL RIVERS AUTHORITY

NRA

POLLUTION PREVENTION GUIDELINES

SAFE STORAGE AND DISPOSAL OF USED OILS

These notes have been drawn up to assist all who handle used oils, from a single engine oil change to large industrial users. They should be complied with in order to reduce the risk of oil pollution of surface waters or ground waters, sewers and drains. Further advice may be obtained by contacting your local authority waste management section, or from your local National Rivers Authority Water Quality Office, details of which will be found at the end of these guidelines.

1. GENERAL

The NRA is responsible for the protection of "controlled waters" from pollution under the Water Resources Act of 1991, and it is an offence under the Act to cause such pollution, either deliberately or accidently. "Controlled waters" include all watercourses and water contained in underground strata.

2. OIL POLLUTION

Oil is one of the most commonly reported types of water pollution and causes nearly a quarter of all pollution incidents. Careless disposal of oil into drainage systems, onto land or to watercourses is not only an offence but can be harmful to river birds, fish and other wildlife. Because of the way it spreads, even a small quantity can cause a lot of harm - a gallon of oil can completely cover a one-acre lake. Clean-up operations can be expensive, the costs of which will be recovered from the offender.

3. DISPOSING OF USED OIL

Do not tip oil into any drains or onto land, as this will result in pollution of rivers or an underground water resource.

a. Used engine oil arising from car maintenance should be taken to an oil bank. These will be found at most civic amenity sites and at some garages and certain major car accessory retailers. Your local authority recycling officer should be able to provide you with details of where these may be found. It is important not to contaminate used oil with other materials, such as white spirit, paint or solvents, as this makes recycling extremely difficult.

b. Larger quantities of used oil, such as hydraulic fluid or lubricants from lorries, buses or mechanical plant should be stored securely for collection by a registered contractor who will pay for the oil. Used oil is a valuable asset and should be treated as such.

c. Small amounts of vegetable cooking oil or animal fats can be used as bird food by using it to soak or fry bits of bread. Cooking oils from major users such as fish and chip shops can be collected to be reprocessed to cooking oil or animal feed.

d. At sites such as garages, used oil can be generated in large quantities. This oil can be collected by a registered contractor, or alternatively it may be feasible to use it as a fuel for space heating. This will require adequate storage to balance the supply with the variation in demand through the year and will need an appropriate burner. Such installations require authorization by the local authority environmental health department.

e. Transformer oil is a special oil used in electrical transformers. Older transformers used Polychlorinated biphenyls (PCB's) and if these are present they require expert handling to avoid serious pollution. Advice should be sought from the local authority or the NRA.

4. OIL STORAGE AND PIPELINES

a. Separate guidelines for above ground oil storage tanks are available. In general any oil storage tank and oil stored in drums should be sited on an impervious base within an oil-tight bund. No damp course should be provided in the bund wall structure and there should be no drainage outlet. The bunded area should be capable of containing 110% of the volume of the tank or the largest drum; any fill pipes or funnels, draw pipes and sight gauges should be enclosed within its curtilage. Any tank vent pipe should be directed downwards into the bund.

b. Underground oil pipelines may be subject to damage and corrosion and above ground pipelines are preferred. When this is not practicable, appropriate protective measures against damage and corrosion, such as double wall piping or laying the pipe in a conduit should be provided.

For any further information, please contact your NRA Regional Office at:-

ANGLIAN REGION	NORTH WEST REGION	SOUTH WESTERN REGION
Peterborough 0733 371811	Warrington 0925 53999	Exeter 0392 444000
NORTHUMBRIA AND	SEVERN TRENT REGION	THAMES REGION
YORKSHIRE REGION	Solihull 021 711 2324	Reading 0734 535000
Leeds 0532 440191	SOUTHERN REGION	WELSH REGION
Newcastle 091 213 0266	Worthing 0903 820692	Cardiff 0222 770088

... or at all times in an emergency on Freefone 0800-807060

Head Office: *Rivers House, Waterside Drive, Aztec West,*
Almondsbury, Bristol, BS12 4UD
Telephone 0454 624400
Fax 0454 624409

NATIONAL RIVERS AUTHORITY

NRA

POLLUTION PREVENTION GUIDELINES
HIGH PRESSURE WATER & STEAM CLEANERS

These notes are for guidance only. Each site will be considered according to the individual circumstances and early consultation with your local National Rivers Authority Water Quality Office is advisable. Details of these offices will be found at the end of these notes.

1. GENERAL

The NRA is responsible for the protection of "controlled waters" from pollution under the Water Resources Act of 1991, and it is an offence under the Act to cause such pollution, either deliberately or accidentally. "Controlled waters" include all watercourses and water contained in underground strata (groundwater). The formal consent of the National Rivers Authority is required for any discharge to controlled waters. This includes both direct discharges and discharges to soakaways. Such consents are not granted automatically.

2. INTRODUCTION

Pressure washers provide a fast and effective mechanism for the removal of dirt, grease and coatings such as paint from vehicles, machinery and impermeable surfaces. Wash waters containing the dislodged dirt or grime usually pass directly to the nearest drain.

The pressure washer may either be permanently stationed at a cleaning bay or transported to the application site. The only requirements are an adequate water supply, a power source and a suitable means of waste disposal.

3. THE PROBLEM

Pressure washers may produce large volumes of waste water ranging from 50 - 900 litres of water per hour at temperatures as high as 120°C. Traffic film removers or other cleaning chemicals may be added to increase the effectiveness of the operation and on occasions abrasive agents such as sand or grit may be incorporated with the wash waters.
In many cases power washers are used in open hardstanding areas where the drainage system has been installed to deal solely with uncontaminated surface water or rainwater. The resulting effluent usually discharges from the site via these drains.

4. HOW WATER POLLUTION OCCURS

Open yards, garage forecourts and car parking areas normally drain to surface water drains which ultimately discharge to local streams or underground soakaways. Consequently should this drainage system become polluted either by spillage or contaminated wash waters, pollution of the receiving stream or underground waters will occur.

5. HOW TO AVOID WATER POLLUTION

In order to avoid the risk of pollution the operator must first ensure that the drainage area which will receive contaminated wash waters does not pass to the surface water system. If in doubt, contact the local council, sewerage undertaker or alternatively the NRA for advice.

If cleaning is normally carried out in one place, it is advisable to designate the area as a washdown bay, surrounding the site with a raised kerb and directing the effluent to the foul sewer. Discharges to the foul water sewer may require the formal approval of the sewerage undertaker and prior authorisation should be obtained. New connections to the sewerage system may be subject to Building Regulation approval. Alternatively it may be possible to install a water recycling system where large volumes of water are used or no foul sewer is available.

In the event that disposal to the foul sewer or recycling are not possible, the effluent must be contained within a sealed drainage system or catchpit for off-site disposal via an authorised waste contractor.

The cleaning of drainage systems using pressure washers may present special difficulties requiring the temporary sealing of the system and collection of effluent. It should be remembered that the responsibility for avoiding water pollution rests with both the operator and the site occupier.

6. WATER POLLUTION AND WHAT IT COSTS

Pollution can render surface water and groundwater unsuitable for legitimate uses. When sources of pollution are found the NRA will take legal action if appropriate. Magistrates courts have the power to impose fines of up to £20,000 on conviction. In addition any costs incurred in remedying or mitigating the effects of pollution will be recovered by the NRA from the polluter.

7. REMEMBER

Effluent produced by pressure washing is a trade effluent and special precautions must be taken. The NRA will be pleased to offer advice on your particular application. If in doubt contact your nearest NRA office listed below.

For any further information, please contact your NRA Regional Office at:-

ANGLIAN REGION	NORTH WEST REGION	SOUTH WESTERN REGION
Peterborough 01733 371811	Warrington 01925 653999	Exeter 01392 444000
NORTHUMBRIA AND	SEVERN TRENT REGION	THAMES REGION
YORKSHIRE REGION	Solihull 0121 711 2324	Reading 01734 535000
Leeds 0113 237 1811	SOUTHERN REGION	WELSH REGION
Newcastle 0191 213 0266	Worthing 01903 820692	Cardiff 01222 770088

...or at all times in an emergency on Freefone 0800-807060

Head Office: Rivers House, Waterside Drive, Aztec West,
Almondsbury, Bristol, BS12 4UD
Telephone 01454 624400
Fax 01454 624409

recycled paper

PPG13
TH-8/94-9K-C-AKUH