EA-National Centes GANCRAOA

## THE ENVIRONMENT AGENCY'S RISK PORTFOLIO, ANNEX: REGISTER OF RISK ASSESSMENT TOOLS

Raquel Duarte-Davidson and Simon Pollard

Report No. 29

June 2000

	•			
Title: The Environment Agency's Risk		Report No. 2	9	
Portfolio, Annex: Register of Risk		i	ā	
		Version: 3.0	Final	
		Issue Date:		
Approval	Signatu	ire	Date	
J. Irwin	38	Drwin	June 2000	
Distribution:	Environment Agency	<u> </u>		
	Internal - Intranet			

ENVIRONMENT AGENCY

## ANNEX: Register of Risk Assessment Tools

The Register of Risk Assessment Tools provides a listing and description of tools (i.e. techniques models, or procedures) used or under development within the Environment Agency for risk assessment purposes. The register was initially developed based on interviews with personnel from each of the Agency's functions and more recently updated by telephone or fax. The register does not aim to cover all tools available, but rather to summarise those most frequently used. To help keep the register updated, please advise the National Centre for Risk Analysis and Options Appraisal of any tools currently not included in this Annex. The register is intended to inform the Agency as a whole, and the Directors of Environmental Strategy, Environmental Protection and water management in particular, on the current risk assessment capabilities of the Agency.

The tools are each described using standard proformas which specify their characteristics using key phrases. The proforma is explained below.

The order of the proformas is currently grouped according to the section of the Environment Agency from which the tool originated, (e.g. Water Resources). However, many of these tools are used by more than one function in the Agency. A reference is used to distinguish each tool, using a code structure of the initials of the Agency section plus a 3-digit number, e.g. WR012. The codes are as follows:

SR	Environmental Strategy
EIA	Environment Impact Assessment
PIR	Process Industries Regulation
RAS	Radioactive Substances Regulation
LQ	Land Quality
WQ	Water Quality
WMR	Waste Management and Regulation
FD	Flood Defence
CO	Fisheries and Conservation
ŔŇ	Recreation and Navigation
WR	Water Resources
OTH	Other tools not specific to any of the above

Table 1 of this Annex provides a brief explanation of the categories used to define the principal characteristics of those risk assessment-related tools used within the constituent parts of the Environment Agency. It is important to note that in many cases, risk assessment is an implicit rather than explicit use of the models and procedures recorded on the proformas. Table 2 lists all the tools included in this Annex and provides a brief description of the purpose of the technique, model or procedure. This is followed by, individual proformas.

Table 1: Proforma

Proforma	Contents	Description				
Section						
Number						
I.	Title	The title by which the technique, model or procedure is most commonly known				
	Acronym	The acronym by which the technique, model or procedure is most commonly known				
2.	Model Purpose	A brief description of the primary areas in which the tool is intended to be used.				
3.	Additional					
	information					
	Users	This records who the end users of the technique, model or procedure are.				
	Frequency	This section provides information on how often the model is used – i.e. whether the model is				
		used routinely, periodically (e.g. every few weeks) or as a specialist tool (e.g. used occases by experts)				
		by experts)				
	Development	This identifies the state of development of the tool: there may be no plans to revise/update the				
		model (none); the Agency may currently be discussing whether revisions are necessary				
		(arguing revision); or it may currently be undergoing revision (being revised).				
	License	This identifies the license conditions of the technique, model or procedure: whether it has been				
	conditions	developed commercially and requires license (licensed product) or whether it is freely				
	Constant	available; if it is a licensed product, how many license holders does the Agency hold?				
4.	General	This section provides an initial categorisation to identify those areas of the Environment Agency's remit to which the technique, model or procedure may be applicable.				
	Assessment  Media	The media to which the technique/model/procedure is, or may be, applied. Where it may be				
	меа <i>іа</i> 	applied to waste in addition to one of the three primary media, this is also identified.				
	Function	The core functions of the Environment Agency to which the technique tool may be applicable.				
	Function	This may reflect its current use or an area of potential use which would not require significant				
		development work.				
	Purpose	The modus operandi of the Environment Agency, within the functions identified above in which				
	1 u.pose	the model/procedure is most commonly used. Regulation includes the determination of				
i		authorisations, consents and licences. Operational includes routine environmental managemen				
		as well as enforcement issues. Planning relates primarily to the planning of the Environment				
Ris		Agency's activities. Prioritising relates primarily to identifying those issues which pose greates				
	_	risk to the environment.				
	Risk Assessment	This section identifies the risk assessment basis of the tool. This may be qualitative. semi-				
		quantitative or quantitative. It may contribute to the setting of the criteria by which the severity				
		of risks can be determined or it will be involved in the severity assessment itself. For those				
		models recorded, the basis may be deterministic (i.e. a single value is used for each input				
		parameter) or some may feature a stochastic (i.e. a range of values with a statistically				
		determined distribution) simulation capability (e.g. Montecarlo). Finally, the tool may be used				
	Further	for either <u>risk assessment</u> or determining <u>risk management</u> option.				
<i>5</i> .	Assessment	This section provides a further categorisation of the tool and in particular, focuses on the specific features provided.				
	Coverage	This records whether the technique/model/procedure is used on a site-specific basis, whether it				
	Coverage	can address issues across a catchment or region in one operation, or whether it can assess risk				
		across England and Wales in one operation.				
	Туре	This section records the form the technique/model/procedure takes. It will be either procedural				
	1,790	or mathematical, statistical, and it may cover a range of potential risks/effects from physical				
		issues such as flood water to chemical and radiochemical pollutants.				
	System Base	This sets out the form in which the tool is made available to the user. It also identifies whether				
	0,0002	the model/procedure has been developed in-house or with third party support.				
	Timescale	This sets out over what timescale those tools recorded can be applied.				
	Resolution	This covers the spatial resolution of the technique, model or procedure				
5.	Cross-Reference	, , , , , , , , , , , , , , , , , , ,				
<b></b>	Standards	This identifies the standards and targets against which the technique/model/procedure assesses				
		the severity of the risk being determined.				
	Databases	This identifies the databases required for the tool to operate effectively.				
6.	Comments	Here any additional comments may be added.				
<u> </u>	Contact	Provides a principal point of contact for further information on the use or further development				
	Comaci	of the technique/model/procedure. Many of the contacts noted have developed a particular				
	l .					

Table 2: Environment Agency Register of Risk Assessment Tools: Summary Table

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Environmental Impact	EIA 001	EIA	Agency technical guidance on scoping and detailed guidance notes for a
Assessment			comprehensive range of development types primarily assist external
			developers and their consultants on how to assess the environmental
			impact of projects and schemes, how to reduce risks to the environment
			from such schemes, and how best to develop mitigating measures. Also
19			for Agency staff and local Planning Authorities.
Environmental Impact	EIA 002	EIA/External	To establish minimum national standards for the environmental impact
Assessment, Works & Activities			assessment at an appropriate level of all Agency works and activities. To
			ensure the Agency meets the statutory requirements of European and UK
			EIA legislation and the Environment Act.
Strategic Risk Assessment	SR 001	SRAM	This methodology has been developed to enable comparative assessments
Methodology			of environmental impacts at the strategic level.
R&D Prioritisation spreadsheet	OTH 001	<del>                                     </del>	To provide a standard, consistent method for collating and prioritising
1			R&D proposals based on the Agency.
European Union system for the	OTH 002	EUSES	
Evaluation of Substances, version			
1.0.			

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Hull Acid Rain Model	PIR 001	HARM	This model is used for the calculation of the concentration and deposition
			of sulphur and nitrogen pollutants over the UK and creating deposition
			maps.
Meso and Regional Scale	PIR 002	NAME II	To calculate and forecast pollutant concentration and deposition. It is
Pollutant dispersion and			used for retrospective episodes of analysis of poor air quality.
Deposition Model		1.0	
United Kingdom Air Dispersion	PIR 003	UKADMS	Calculation of short-term - long-term ground level pollutant
Modelling System			concentrations for releases to air (air dispersions model).
AERMOD	PIR 004	AERMOD	Estimation of air pollutant concentrations (short-term and long-term) from
			paint source, line source and area source emissions
DISTAR	PIR 005	DISTAR	Estimates of air pollutant concentration based on RAI methodology
Operator and Pollution Risk	PIR 006	OPRA	OPRA assess several aspects of the performance of an operator to provide
Appraisal	4		an indication of probability of an occurrence of an undesirable event and
	11.5		the consequences of the event. These factors are combined to give an
			indication of comparative risks.
Uniform System for the	PIR 007	USES	USES is a tool that can be used for rapid quantitative assessments of the
Evaluation of Substances			general risks of substances. USES may be applied to risk assessment and
			to set priorities for new and existing substances.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Validity Analysis of Disposal	RAS 001	VANDAL	VANDAL is central to the Agency's quantitative risk assessment
Alternatives		A.	capability, providing estimates of risk to man, over long time scales, from
			radionuclide releases from radioactive waste disposal facilities.
WOLFNET	RAS 002	WOLFNET	WOLFNET is the flow sub-model in VANDAL and provides groundwater
			flow predictions for the transport sub-model in VANDAL.
DECOS-MG	RAS 003	DECOS-MG	Dynamic modelling of radionuclide migration within the surface
			environment.
TIME4	RAS 004	TIME4	This methodology is being developed to enable risk assessments for other
			techniques to be normalised in order to establish priorities across the remit
			of the Environment Agency.
Chemical Transport Adsorption	RAS 005	CHEMTARD	CHEMTARD is a coupled chemical transport code used to determine the
Redox and Delay Model			migration of radionuclides through the geosphere.
pH Redox Equilibrium Equations	RAS 006	PHREEQE	The PHREEQE computer program is designed to modelling geochemical
			reactions. Based on an ion pairing model, PHREEQE can calculate pH,
			redox potential, and mass transfer as a function of reaction progress.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Part IIA EPA 1990. Handbook, Guidance Notes and Supporting Manuals.	LQ 001		To describe the process to be adopted by the Agency when exercising regulatory control under the contaminated land provisions of Part IIA of the Environmental Protection Act 1990. The Handbook also provides links to associated Agency documentation (i.e. guidance notes and supporting
Model Procedures for the Management of Contaminated Land.	LQ 002		manuals).  To provide a structured framework and procedural guidance for the identification, treatment and monitoring of contaminated land.
Contaminated Land Exposure Assessment	LQ 003	CLEA	Estimating likely human exposure for contaminants in soils for the development of guideline values to indicate whether there are any unacceptable long-term risks to human health.
Short Term Risks	LQ 004		Development of model to assess short-term risks to human health.
Buildings Risk	LQ 005		Guidance on assessing and managing risks from contamination to building materials including specific regulatory guidance for Part IIA.
Ecosystem Risk from Contaminated Land	LQ 006	ECORCL	To assess the risks to ecosystems from contaminated sites.
Contaminated Land Exposure Assessment	LQ 007	ConSim	ConSim has been developed to help an assessor predict the impact of leaching of contaminants from land contamination on the quality of controlled waters (and GW in particular). ConSim uses Monte Carlo techniques to provide probabilistic output of predicted impact on water quality arising from the migration of contaminants. ConSim considers biological, physical and chemical process (and 1st order radioactive decay if applicable) acting to attenuate pollutants within the system.
Methodology for the derivation of remedial targets for soil and groundwater to protect water resources.	LQ 008		Guidance on risk management requirements for contaminated soils and groundwater to prevent pollution of the aquatic environment. This methodology compliments the ConSim software tool.
Validation of Analytical Techniques for Laboratory Analysis of Soil.	LQ 009		To provide Quality Assurance in Laboratory Analysis of Soil.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
River Quality Planning	WQ 001	RQP	A collection of stochastic programmes for predicting the impact of single discharges includes RQI and CONCLASS.
Simulation of Catchments	WQ 002	SIMCAT	The prime purpose is to calculate the effect of discharges and other types of pollution and abstractions on the statistical distributions of river water quality throughout a catchment. It is primarily used as a consent setting tool.
Temporal Overall Model for Catchments	WQ 003	TOMCAT	TOMCAT may be used as a tool for consent setting in order to achieve river quality standards and may also be used as a planning tool to model, for example, phosphate to assist targeting investment. It is an essential tool for calculating consent standard for effluent discharges in catchments where there might be several works affecting the river quality, or where it is important to predict dissolved oxygen levels.
Quality Simulation Along Rivers	WQ 004	QUASAR	QUASAR is a predictive model to assess the effect of developments and changes within the catchment (for example, drainage and sewerage changes - more stringent consents etc) on river quality. QUASAR may be used in both a dynamic and a planning capacity.
Estuarine (Contaminant) Shell	WQ 005	ECoS	ECoS is a shell or framework for modelling contaminants such as dangerous substances in estuaries.
MIKE - 1 Dimensional and 1 Layered	WQ 006	MIKEII	MIKE11 is an engineering software package for the simulation of flows, water quality and sediment transport in estuaries, rivers, irrigation systems, canals and other water bodies.
Quality of Estuaries Simulations	WQ 007	QUESTS	QUESTS models estuarine quality particularly with respect of discharges and how consent conditions may be determined to improve water quality and target investment.
TIDEWAY	WQ 008	TIDEWAY	2-D Vertical modelling in Estuaries.
Aggregated Dead Zone	WQ 009	ADZ	Assessing the time of arrival of a polluting discharge during an incident.
POLLUX	WQ 010	POLLUX	
Construction of Bunds for Oil Storage	WQ 011		To define cost effective storage protection facilities to reduce the risk of (oil) pollution of controlled waters.
Farm Activity and River Management System	WQ 012	FARMS I&II	FARMS I & II is a distributed catchment scale model to simulate the run- off of water and the transport of pollutants arising from farm wastes, into rivers. It is used for developing farm waste management plans.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Simulation of Catchments	WQ 013	SIMCAT	Stochastic modelling of water quality in catchments. It is used as a consent setting tool.
Temporal Overall Model for Catchments	WQ 014	TOMCAT	Stochastic modelling of water quality in catchments. It may be used as a tool for consent setting in order to achieve river quality standards and may also be used as a planning tool to model, for example, phosphate to assist targeting investment.
Incident Reaction Interface System	WQ 015	IRIS	IRIS is a time of travel calculation model for assessing the length of time taken for a pollutant to travel down a catchment to potable water intakes. The models primary function is for intake protection purposes.
Pollution Prevention Manual	WQ 016		To provide consistent guidance to all Environment Agency field officers on pollution prevention issues including site visits, risk assessment and risk management.
Pollution Prevention Site Visits	WQ 017		To assess and manage risk on wide ranging types of site to prevent pollution and improve water quality. All regions undertake some form of PP activity.
Works Notice Risk Assessment Forms	WQ 018		To provide a consistent basis for deciding whether a works notice should be served to prevent water pollution.
Prediction of Pesticide Pollution in the Environment	WQ 019	POPPIE	Prediction of Pesticide Pollution in the Environment.
FARM Pollution Prevention Visit Proforma	WQ 020		Consistent data collection of farm storage facilities and risk assessment of storage operations.
Pollution Risk from Accidental Influx to Rivers & Estuaries	WQ 021	PRAIRIE	To predict consequences of accidental releases of chemicals into water courses.
Urban Pollution Management Manual	WQ 022	UPM Manual	The UPM Manual is designed to deliver adequate environmental protection at least cost for intermittent discharges of urban sewage. This is achieved through the planning process and the use of specific tools developed for the purpose.
Decision Support Tool	WQ 023	DECIST	Make better decisions when deciding levels of data collection in urban pollution management studies.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Catchment Inventory system	WQ 024	CATCHIS	CATCHIS is a system for evaluating the risk of specific pesticides being
			present in specified surface water and groundwater locations.
Source Protection Zones models	WQ 025	SPZs	Source Protection Zones have been developed to define areas in which
& maps			activities could impact groundwater abstraction.
Groundwater Vulnerability Maps	WQ 026		Groundwater Vulnerability Maps have been produced to define the
			vulnerability of groundwater in any specific location regardless of use.
Rapid Risk Assessment	WQ 027		To provide consistent approach to risk assessment at industrial sites (non
Methodology			IPC sites).
Discharge Consent Manual	WQ 028		The discharge Consent Manual is a collection of Agency's policies for the
			determination of Consents for discharges. The Manual covers the legal &
			technical basics for ensuring the protection of WQ. The manual is a
			dynamic document subject to continual reviews & addition.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Landfill Simulation Model	WMR 001	LandSim	LandSim allows the assessor to predict the impact of pollutants in a
			landfill site on the quality of controlled waters (particularly groundwater).
		!	The model considers leachate chemistry, engineering performance of
			containment and leachate collection systems and processes acting in the
			unsaturated zone to attenuate pollutants before they reach the waterhole.
Operator and Pollution Risk	WMR 002	OPRA for	OPRA for Waste provides a straightforward characterisation of the overall
Appraisal for Waste		Waste	environmental risk from waste disposal or recovery operations by
			providing an indication of an occurrence of an undesirable event and the
			consequences of the event. These factors are combined to give an
			indication of comparative risks and are used to determine the frequency of
			inspections at sites.

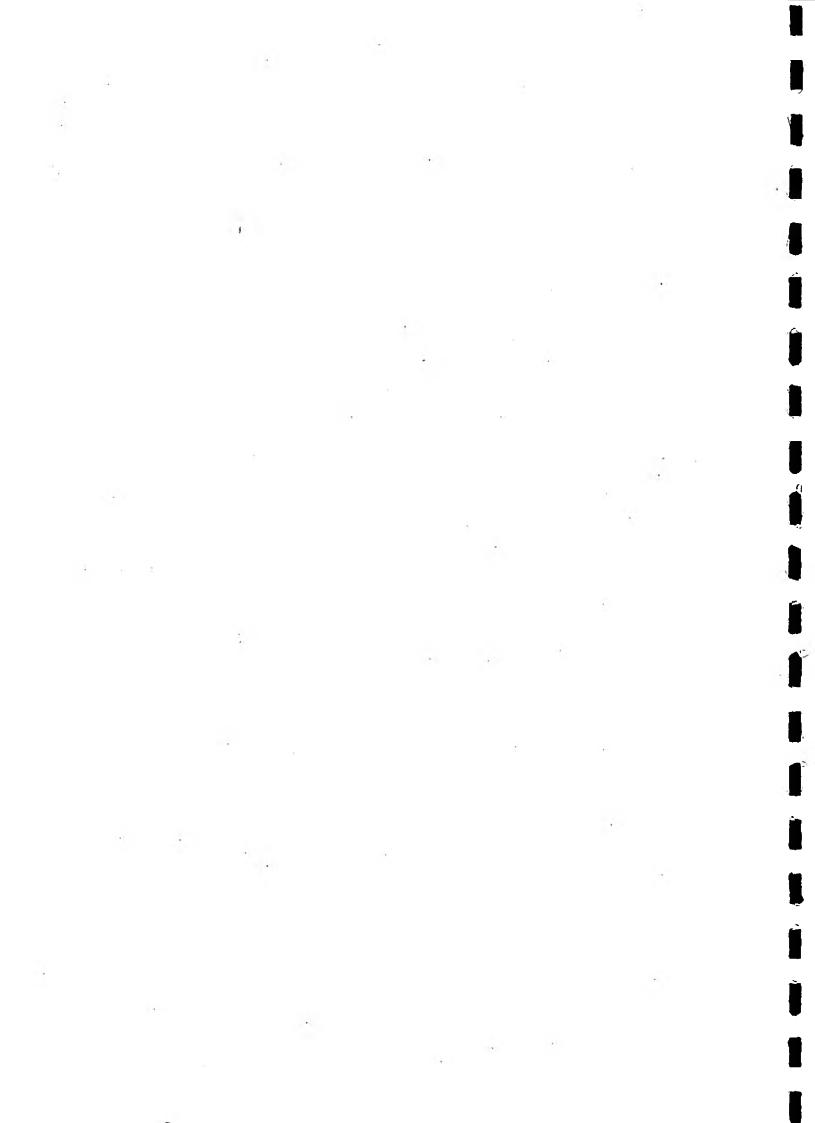
	FORM REF.	ACRONYM	MODEL PURPOSE
TITLE			
Flood Defence Management	FD 001	FDMS	The main purpose is to identify the need for capital/revenue expenditure
System			and to determine the prioritisation and justification of that expenditure.
Flood Studies Report (PC Based)	FD 002	MICROFSR	FSR is used for estimation of design flows for ungauged catchments.
			Flows are estimated at one point in the catchment only.
Frequency Simulation (of Flood	FD 003	FRQSIM	FSR is used for estimation of design flows for ungauged catchments.
Flows)			Flows are estimated at one point in the catchment only.
Regional Flow-Forecasting	FD 004	1	The Regional Flow-Forecasting System relies on output from one of three
system			models (Isolated Event Model/Thames Conceptual Model/Probability
	l	<u> </u>	Model) to forecast flood events in river catchment zones.
ISIS	FD 005	ISIS	ISIS has been developed from ONDA and SALMON and it models flow,
			water quality and sediment transport in complex river and channel
			networks.
Hydrological Engineering Centre	FD 006	HEC-RAS	HEC 2 is a backwater model for ascertaining water levels along a reach of
Risk Analysis System			river or open channel for a steady flow rate.
Backwater Programs (Generic)	FD 007		Backwater programs are used to estimate water levels given in-channel
			geometry and roughness and a steady flow.
MIKE – 2 Dimensional and 1	FD 008	MIKE21	MIKE21 is a comprehensive modelling system for 2D free surface flows
Layered		}	and is applicable to hydraulic and related phenomena in lakes, estuaries,
			bays and coastal areas.
NAM (Hydrological Model)	FD 009	NAM	NAM is a deterministic conceptual lumped model representing the land
'			phase of the hydrological cycle. It is based on physical and semi empirical
			formulations.
Forecasting Rain Optimised using	FD 010	FRONTIERS	FRONTIERS is a model that provides high-resolution quantitative rainfall
New Techniques of Interactively			forecasts for flow prediction.
Enhanced Radar and Satellite			A/
Data.			
Local Rainfall Forecasting System	FD 011		The Local Rainfall Forecasting System is an advection model that models
			the speed and direction of rainfall and can forecast up to two hours ahead.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
Generating Advanced Non-Casts for Deployment in Operational Land-surface Flood-Forecasting	FD 012	GANDALF	GANDALF is an operational thunderstorm warning procedure for use with river flood forecasting systems.
Risk Assessment for Sea and Tidal Defences	FD 013		This methodology has been developed to provide a detailed quantitative risk assessment procedure including probabilistic failure analysis and assessment of areas of flooding. This methodology is designed to compliment the SPACE Methodology and act as a second tier detailed assessment.
Indicative Floodplain Maps	FD 014	IFM	Show areas within which may be vulnerable to flooding from rivers or the sea
Flood Estimation Handbook	FD 015	FEH	FEH is used for estimation of design flows for ungauged sites. It is a development of the flood studies report.
Database of Erosion Deposition and Flooding	FD 016		Database of 1500 reported flooding and erosion events in Britain from 1770 to present. Developed by DETR to inform planning guidance.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
River Habitat Survey	CO 001	RHS	To determine River habitat quality in the context of river type and level of physical modification.
River Corridor Survey	CO 002	RCS	To provide information on the plant communities and land use along watercourses.
Landscape Assessment	CO 003		To provide information on landscape character of river corridors.
Habitats Directive Review	CO 004		To review all consents / activities affecting Habitats and Birds Directive sites
Planning applications screening process	CO 005		To prioritise planning applications for consultation with conservation staff.

TITLE	FORM REF.	ACRONYM	MODEL PURPOSE
FLOWPATH	WR 001	FLOWPATH	Flowpath is a propriatory model which is applied in the determination of
			Groundwater Protection Zones. The model may also be applied in
			groundwater pollution incident investigation. It is a 2D steady state
			numerical groundwater flow model.
MODFLOW/MODPATH	WR 002	MODFLOW	MODFLOW is a finite difference groundwater model for modelling time
			variant flow in anisotropic, heterogeneous, layered aquified systems.
			These models are 2D/3D Steady State/Time Variant Groundwater flow
			and particle backing models.
RESPLAN	WR 003		Least cost economic prioritisation of resource
			Development scheduling / resource allocation modelling
Finite Difference Code	WR 004	BU	BU is a finite difference groundwater model for modelling time/variant
			flow in anisotropic, heterogeneous, layered aquifer systems. These
			models are 2D/3D steady state/time variant groundwater flow and particle
			tracking method.
Integrated Catchment	WR 005	ICMM	This is a finite difference groundwater model for modelling transit flow in
Management Model		1.41	anisotropic, heterogeneous layered aquifer systems.
Single Layer Finite Difference	WR 006	SLAY	This is a finite groundwater model for modelling transient flow in
Code.			anisotropic, heterogeneous, single layered, aquifer systems.
MIKE - System Hydrologique	WR 007	MIKE SHE	MIKE SHE is a dynamic modelling tool for the analysis planning and
Europeane		!	management of water resources and environmental problems related to
			surface water and groundwater, in particular to assess potential impact of
	1117 000	77777	human activities.
Well Head Protection Area	WR 008	WHPA	The Well Head Protection Area Model is utilised for derivation of
			Groundwater Protection Zones. The model is a 2D steady state numerical
	WD 000	CWALD	groundwater flow model.
Surface Water Abstraction	WR 009	SWALP	The determination of surface water abstraction licence applications
Licensing Procedure	1	(4)	**
		<u> </u>	

Micro Low Flows V21	WR 010		Used to estimate natural and artificial infiltrated flow statistics at ungauged river sites.
Water Resources Model	WR 011	WRM	Water Resources Planning. WRM helps evaluate the capability of existing and proposed WR Development toward meeting target levels of service of consumption given existing and forecast demands against known hydrologic performance.
Thames Catchment Model River Flow Generation	WR 012	3.00	To generate sequences of possible future river flows for different rainfall scenarios used in conjunction with the Thames WR model (for reservoirs).  River Flows + reservoirs = Drought Management Model.
Drought Management System	WR 013	DMS	Operational planning and management of water resources. Provides a broad assessment of risk of resource/supply failure given statistical likelihood of different rainfall scenarios given actual reservoir storage and run off at that time.
Bursts and Background Estimates	WR 014	BABE	To estimate the level of leakage of water from distribution system.
Demand Forecasting Model	WR 015	DFM	To forecast public water supply demands for the future.



1. Title	Environmental Impact Ass	essment (External developers)	Form Ref EIA001
2. Model	Purpose	1.5	Acronym ElA/External
		and detailed guidance notes for a comp	
		nd their consultants on how to assess the	
	y staff and local Planning A		best to develop mitigating measures. Also
Users:		planning liaison staff. Mainly used b industry, although it applies to Agenc	
	when considering a develo	· · · · · · · · · · · · · · · · · · ·	
_			- 7 -
Frequenc	y 🔨	Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasiona	lly	Being revised	Free
3. Genera	al Assessment	Under development	
Media		Function	Risk Assessment
Air		Water Quality	Qualitative <b>J</b>
and		Water Resources	Semi-Quantitative
Vater	7	Flood Defence	Quantitative
Waste		Fisheries	Criteria
		Rec & Nav Conservation	Assessment
Purpose Regulation		Conservation PIR	Deterministic Stochastic
Operations	<del></del>	Radioactivity	Risk Assessment
lanning		Waste Policy	Risk Management
rioritising	3	Land Quality	
. Furthe	r Assessment		
Coverage		Туре	System Base
lite Specif		Procedural  Mathematical	Paper /
.aconment Regional	<del>                                   </del>	Statistical	PC - DOS PC - Windows
Vational		Chemical	UNIX/Mainframe
	\$ 10 D. C.	Physical	
imescale		Biological	In-House
esolution		Radioactivity	Third Party
. Links t	o Standards, Targets and I	Patabases (Cross-reference)	2.0
ا بناد المساور	DETR legislation + Guidan	nei other good	
	practice guidance.	ce; other good Databases	1
	<u> </u>		
. Comme	ents		
Guidance o	documents are currently being	g updated and are due to be completed in	the autum of 2000.
Ponto-t	Andrew Brookes or	Location: NCRAOA	T.I. 210 (220
	Environmental Developmen		Tel: 710 6828
	Officer.	·	

. .

1. Title Enviror	nmental Impact Ass	essment, Works & Activi	ties	Form Ref EIA002	
2. Model Purpose	:			Acronym ElA/Ext	ernal
		rds for the environmental			
	s. To ensure the A	gency meets the statutory	requirements of Euro	pean and UK EIA legisl	ation and the
Environment Act.			<del></del> -		
Users: Agency	EIA staff and proj	ect managers Consultants			
100					
Frequency		Development		License	
Routine		None	<del></del> 1	Licensed	
Periodic		Arguing revision		If so, number	
Occasionally		Being revised	<u> </u>	Free	7
3. General Assess	ment				
Media		Function		Risk Assessment	
Air		Water Quality	<del></del>	Qualitative	
Land		Water Resources	7	Semi-Quantitative	<del></del>
Water		Flood Defence		Quantitative	
Waste	1	Fisheries	7	Criteria	
		Rec & Nav	7	Assessment	
Purpose	_	Conservation	7	Probabilistic/Determ	a 🗸
Regulation		PIR		Monte-Carlo	
Operational		Radioactivity	<b> </b>	Risk Assessment	
Planning	<u> </u>	Waste Policy		Risk Management	
Prioritising		Land Quality			
4. Further Assess	ment				
Coverage		Туре		System Base	
Site Specific		Procedural		Paper	
Catchment	<del>                                      </del>	Mathematical		PC - DOS	
Regional		Statistical		PC - Windows	
National		Chemical	<b>—</b>	UNIX/Mainframe	
		Physical	<u> </u>		
Timescale		Biological	<b>—</b>	In-House	
Resolution		Radioactivity		Third Party	
5. Links to Stand	ards, Targets and	Databases (Cross-refere	nce)		
Standards DETR Guidan	Legislation and Coc, Agency Nationa	Guidance, MAFF al Handbook and	Databases		
6. Comments					
National Handboo	k (1998) due to be	updated - timescales to be	agreed.		

I. Title Strate	gic Risk Assessmen	Form Ref SR001	
2. Model Purpo	se	Acronym SRAM	
This methodolog	y has been develope	d to enable comparative assessment	s of environmental impacts at the strategic level.
Users: Potent	ial prioritisation of	LEAPS	
requency		Development	License
Routine		None	Licensed N/A
Periodic		Arguing revision	If so, number
Occasionally		Being revised	Free
,		Under development	
. General Asse	ssment		<del></del>
Media		Function	Risk Assessment
\ir		Water Quality	Qualitative
and	<b>├</b>	Water Resources	Semi-Quantitative
Vater	· · · ·	Flood Defence	Quantitative
Valei Vaste	<b>├</b>	Fisheries	Criteria
V 451C		Rec & Nav	Assessment
urpose		Conservation ✓	
Regulation		PIR ✓	Stochastic
Operational	<del></del>	Radioactivity -	Risk Assessment
Planning	<del>                                     </del>	Waste Policy	Risk Management
rioritising	<b>-</b>	Land Quality	
. Further Asses	sment		4
Coverage		Туре	System Base
lite Specific		Procedural 🗸	Paper
Catchment		Mathematical ✓	PC-DOS
Regional	7	Statistical	PC - Windows
National	7	Chemical	UNIX/Main frame
		Physical -	
Timescale		Biological /	In-House
Resolution		Radioactivity	Third Party
. Links to Stand	lards, Targets and	Databases (Cross-reference)	
tandards Depen	dent upon the type uence.	of intention an Databa	ases Dependent upon the type of intention an consequences.
. Comments			
	is currently under Environment Repo	=	of concept stage and been piloted on LEAPS an

1. Title R&D	Prioritisation spread	sheet	Form RefOTH 001
2. Model Purpo	se		Acronym
Fo provide a stan	dard, consistent met	thod for collating and prioritising F	&D proposals based on the Agency.
		3	(2)
Users: R&D	Programme Officers	& Topic Leaders	
 Frequency	<u>-</u>	Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised	Free
3. General Asse	ssment	Under development	
Media	Ť.	Function	Risk Assessment
Air		Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water	7	Flood Defence	Quantitative
Waste	7	Fisheries 🗸	Criteria
_		Rec & Nav Conservation	Assessment Deterministic
Purpose Regulation		Conservation ✓ PIR ✓	
Operational	<del></del>	Radioactivity	Risk Assessment
Planning	1111	Waste Policy	Risk Management
Prioritising		Land Quality	
4. Further Asse	ssment	181	
Coverage		Туре	System Base
Site Specific		Procedural \(	Paper
Catchment		Mathematical	PC - DOS
Regional		Statistical	PC - Windows
National		Chemical Physical	UNIX/Mainframe
Timescale	<u> </u>	Biological	In-House
Resolution		Radioactivity	Third Party
5. Links to Star	ndards, Targets and	Databases (Cross-reference)	
Standards	15.	Datab	vases R&D MIS
L	10		
6. Comments		4	

1. Title European Unic	on system for the Evaluation of Su	bstances, version	Form Ref	OTH002
2. Model Purpose			Acronym	EUSES
*				
Users:				
Frequency	Development		License	
Routine Periodic Occasionally	None Arguing revisio Being revised Under developm	1	Licensed If so, number Free	
3. General Assessment			150	
Media	Function		Risk Assessment	
Water Waste	Water Quality Water Resource Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity	s /	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment	<i>y y y</i>
Planning Prioritising	Waste Policy Land Quality	1	Risk Management	<u> </u>
Coverage	Туре		System Base	*
Site Specific Catchment tegional Vational Cimescale Resolution	Mathematical	1	Paper PC - DOS PC - Windows UNIX/Mainframe In-House Third Party	<b>/</b>
. Links to Standards, Ta	argets and Databases (Cross-refe	rence)		
Standards PEC/PNEC ratio	o of l	Databases None	required.	
. Comments				
cale for a generic environs	predicted environmental concentrations, and to compare these with proff to continuous. The model was o	redicted no effect conce	entrations (PNECs). A variet	y of release scenarios
		<del></del>	<del></del>	

I. Title Hull A	cid Rain Model		Form Ref PIR001
2. Model Purpos	e		Acronym HARM
		of the concentration and deposition of s	sulphur and nitrogen pollutants over the UK
nd creating depo	sition maps.		
Users: Under	contract by Head C	ffice	]
requency		Development	License
Coutine		None	Licensed N/A
Periodic		Arguing revision	If so, number
Occasionally	1	Being revised	Free
		Under development	
6. General Asses	sment		
Media		Function	Risk Assessment
Air		Water Quality	Oualitative
and	<del></del>	Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative 🗸
Vaste		Fisheries	Criteria
		Rec & Nav	Assessment
orpose -		Conservation	Deterministic
Regulation		PIR 🗸	Stochastic
Operational	<u> </u>	Radioactivity	Risk Assessment
Planning	<del>-</del>	Waste Policy	Risk Management
Prioritising		Land Quality	
l. Further Assess	sment		
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment		Mathematical .	PC - DOS
Regional	7	Statistical	PC - Windows
Vational		Chemical	UNIX/Mainframe
		Physical	
l'imescale	Annual	Biological	In-House
Resolution	10km	Radioactivity	Third Party
5. Links to Stand	ards, Targets and	Databases (Cross-reference)	
	ality standards for st rogen oxides and cr		Land cover databases, altitude, and rainfall
6. Comments			
l'his model is a de Environment Qual		vell Trajectory Model. This model is cur	rently used by the DETR, Air and

I. Title Meso Mode	and Regional Scale  1.	Form Ref PIR002			
2. Model Purpo	se			Acronym NAMI	E 11
To calculate and ur quality.	forecast pollutant co	ncentration and deposition	n. It is used for ret	trospective episodes of an	alysis of poor
	nal PIR Officers				
requency		Davelopment		13	
requency		Development		License	
Coutine		None		Licensed	N/A
eriodic		Arguing revision		If so, number	
Occasionally	<b>—</b>	Being revised		Free	<del>                                     </del>
		Under developmen	ıt		·
. General Asse	ssment				
1edia		Function		Risk Assessment	
ir		Water Quality		Qualitative	
and		Water Resources		Semi-Quantitative	
/ater		Flood Defence		Quantitative	
/ast <b>e</b>		Fisheries		Criteria	
		Rec & Nav		Assessment	7
игроѕе		Conservation		Deterministic	
egulation		PIR	7	Stochastic	
perational		Radioactivity		Risk Assessment	
lanning		Waste Policy		Risk Management	
rioritising		Land Quality		_	
Further Asses	sment				
overage		Туре		System Base	
te Specific		Procedural	<del></del>	<b>.</b>	
atchment		Mathematical	<del>  </del>	Paper	
egional	<del>  _  </del>	Statistical	<b>—</b>	PC - DOS	0
ational	Global	Chemical	<del>  </del>	PC - Windows	
ational	Giovai	Physical	<del></del>	UNIX/Mainframe	<b>✓</b>
mescale		Biological	<b>—</b> ——	T 17	
esolution	$\vdash$	Radioactivity		In-House	<b>-</b>
	<b>—</b> ———————————————————————————————————	·	L	Third Party	
Links to Stand	ards, Targets and I	Databases (Cross-referen	ce)		
andards AQS: S	ulphur and Nitrogen	t Critical Loads	Databases Basec	d on the global forecasting	model and
				on global and European	
			datab	· · · · · · · · · · · · · · · · · · ·	
Comments			<u></u>		
e Agency pays f	or the use of this mo	del on a contract basis.			

1. Title United Kingdom Ai	Form Ref PIR003	
2. Model Purpose	Acronym UKADMS	
Calculation of short-term - lon	g-term ground level pollutant concentration	ns for releases to air (air dispersions model).
TI DID MED - 1		<del></del>
Users: PIR/RSR and waste	coneagues	
Frequency	Development	License
Routine -	None	Licensed 🗸
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free
	Under development	
3. General Assessment		
Media	Function	Risk Assessment
	1 " 0 "	
Air 🗸	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative 🗸
Waste	Fisheries	Criteria
	Rec & Nav	Assessment ✓
Purpose	Conservation	Deterministic ✓
Regulation	PIR 🗸	Stochastic
Operational	Radioactivity -	Risk Assessment
Planning 🗸	Waste Policy	Risk Management
Prioritising	Land Quality	]
4. Further Assessment		
Coverage	Туре	System Base
Site Specific 🗸 _	Procedural	Paper
Catchment	Mathematical ✓	PC - DOS
Regional 🗸	Statistical /	PC - Windows
National	Chemical	UNIX/Mainframe
<u></u>	Physical -	]
Timescale year	Biological	In-House
Resolution	Radioactivity 🗸	Third Party
5. Links to Standards, Targe	ets and Databases (Cross-reference)	
Standards All relevant a standards and target	• •	es METDATA from met office and OS Data
6. Comments		
Model was developed with a	view to giving a more accurate picture of di	ispersion and to deal with complex
topography.		• • • • • • • • • • • • • • • • • • • •

ı

ı

ł

l

١

ì

ı

2. Model Purpose  Estimation of air pollutant concentration in the pollutant concentration in	Development  None Arguing revision Being revised Under development  Function  Water Quality Water Resources	Acronym AERMOD  It source, line source and area source  License  Licensed  If so, number  Free  Risk Assessment  Qualitative
PIR/RSR and waste function  Frequency  Routine Periodic Decasionally  3. General Assessment  Media	Development  None Arguing revision Being revised Under development  Function  Water Quality	License  Licensed If so, number Free  Risk Assessment
Frequency  Routine Periodic Decessionally  B. General Assessment Media	Development  None Arguing revision Being revised Under development  Function  Water Quality	Licensed If so, number Free  Risk Assessment
Routine Periodic Decasionally  3. General Assessment Media	None Arguing revision Being revised Under development  Function  Water Quality	Licensed If so, number Free  Risk Assessment
Periodic Decasionally  3. General Assessment Media	Arguing revision Being revised Under development  Function  Water Quality	If so, number Free  Risk Assessment
Occasionally  B. General Assessment  Media	Being revised Under development  Function  Water Quality	Risk Assessment
3. General Assessment	Under development  Function  Water Quality	Risk Assessment
Media	Function  Water Quality	10 X
Media	Water Quality	10 X
	Water Quality	10 X
\ir \		Qualitative
	Water Resources	
and	Flord Defense	Semi-Quantitative
Water Waste	Flood Defence Fisheries	Quantitative Criteria
vaste	Rec & Nav	Assessment
urpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Prerational	Radioactivity 🗸	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	
. Further Assessment	3	
Coverage	Туре	System Base
lite Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional 🗸	Statistical	PC - Windows
Vational	Chemical	UNIX/Mainframe
	Physical	
imescale hours to year	Biological	In-House
Lesolution	Radioactivity	Third Party
. Links to Standards, Targets and Da	atabases (Cross-reference)	
tandards Air Quality Standards	Databases Me	teorological area and OS area.
Comments	<u> </u>	
. Commence		
Contact Betty Ng	Location: Cardiff	Tel: 7 26 2299

1. Title DISTAR		Form Ref PIR005
2. Model Purpose		Acronym DISTAR
Estimates of air pollutant con	centration based on RAI methodology.	
Users: PIR/RAS colleagu	es	
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free
3. General Assessment	Under development	]
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries Rec & Nav	Criteria Assessment
ъ.	Conservation	Deterministic
Purpose	PIR	Stochastic
Regulation		Risk Assessment
Operational	Radioactivity Waste Policy	Risk Management
Planning Prioritising	Land Quality	rdsk Management
Triottising		
4. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical 🗸	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
	Physical 🗸	
Timescale 1 Hour	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Targ	ets and Databases (Cross-reference)	
Standards Air Quality Standa	ards Databas	es
Les .		
6. Comments		

1. Title Operato	r and Pollution R	isk Appraisal	Form Ref PIR006
2. Model Purpose		-	Acronym OPRA
OPRA assess seven	al aspects of the p	erformance of an operator to provide a	in indication of probability of an occurrence
of an undersirable e comparative risks.	vent and the cons	sequences of the event. These factors a	re combined to give an indication of
Users: Pollution	Officers		
osers. Foliation	Officers		
Frequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally	<u> </u>	Being revised Under development	Free
i. General Assessn	nent	onder development	_
Media		Function	Risk Assessment
\ir		Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
Vater	<b>—</b>	Flood Defence	Quantitative
Vaste		Fisheries	Criteria
urpose		Rec & Nav Conservation	Assessment
legulation		PIR	Deterministic Stochastic
perational	7	Radioactivity	Risk Assessment
lanning		Waste Policy	Risk Management
rioritising	1	Land Quality	
. Further Assessm	ent		
Coverage		Туре	System Base
ite Specific	1	Procedural	Paper
atchment		Mathematical	PC - DOS
egional lational		Statistical	PC - Windows
I ALIUII AI		Chemical Physical	UNIX/Mainframe
imescale		Biological	In-House
esolution		Radioactivity	Third Party
. Links to Standar	ds, Targets and	Databases (Cross-reference)	1
tandards Target. T	arget on function	use operational Databases	
-	ice measure (OPN	f) OPRA as a	
tool Comments			
			al and the Pollution Hazard Appraisal

1. Title Uniform System f	or the Evaluation of Substances	Form Ref PIR007
2. Model Purpose		Acronym USES
	ed for rapid quantitative assessments of the gene d to set priorities for new and existing substance	
Users:		
Frequency	Development	License
Routine Periodic Occasionally	None Arguing revision Being revised	Licensed If so, number Free
3. General Assessment	Under development	
Media	Function	Risk Assessment
Air Jand Water Waste	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment
Purpose Regulation Operational Planning Prioritising	Conservation PIR Radioactivity Waste Policy Land Quality	Deterministic Stochastic Risk Assessment Risk Management
3. Further Assessment		
Coverage	Туре	System Base
Site Specific Catchment Regional National  Fimescale Resolution	Procedural Mathematical Statistical Chemical Physical Biological Radioactivity	Paper PC - DOS PC - Windows UNIX/Mainframe  In-House Third Party
5. Links to Standards, Targ	ets and Databases (Cross-reference)	-1
Standards	Databases	
6. Comments		

-5

. Title Validity Analysis of Disposa	1 Alternatives	Form Ref RAS001
. Model Purpose		Acronym VANDAL
-		
	gency's quantitative risk assessment cap adionuclide releases from radioactive wa	pability, providing estimates of risk to man
uver folig amoosates,		iste disposar inclinics.
Users: Risk Section, NCRAOA		<u> </u>
USETS: INISA DEGROID, 1-0-2 1-2-1		ē.
Frequency	Development	License
Routine	None ✓	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
3. General Assessment	Olider development	
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Waste	Flood Defence Fisheries	Quantitative
Waste	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR Radioactivity	Stochastic  Risk Assessment
Operational Planning	Radioactivity Waste Policy	Risk Management
Prioritising	Land Quality	
4. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical Statistical	PC - DOS PC - Windows
Regional National	Statistical Chemical	PC - Windows UNIX/Mainframe
	Physical 🗸	- 3
Timescale Resolution	Biological Radioactivity	In-House  Third Party
		i niro rariy
5. Links to Standards, Targets and Da		-
Standards Risk target of 1x10 <sup>-6</sup> set guidance	in regulator Databases	
6. Comments		
. This methodology is currently	y under development	
		1

I. Title WOLFNET		Form Ref RAS002
2. Model Purpose		Acronym WOLFNET
WOLFNET is the flow sub-m	odel in VANDAL and provides groundwater	flow predictions for the transport sub-model in
Users: Risk Section, NCR	AOA.	
Frequency	Development	License
Routine	None 🗸	Licensed
Periodic	Arguing revision	lf so, number
Occasionally /	Being revised	Free
6. General Assessment	Under development	J
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Water -	Flood Defence	Quantitative
Vaste	Fisheries	Criteria 🗸
	Rec & Nav	Assessment
urpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity Wasta Policy	Risk Assessment
Planning Prioritising	Waste Policy Land Quality	Risk Management
95	Land Quality	_
5. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical 🗸	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical Physical ✓	UNIX/Mainframe
Timescale	Physical Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Targ	ets and Databases (Cross-reference)	<del></del>
Standards As VANDAL	Database	es
5. Comments		
Sub-model of VANDAL		
SUO-INDUCTOR VANDAL		

ľ

I. Title DECOS-MG		Form Ref RAS003
2. Model Purpose		Acronym DECOS-MG
Dynamic modelling of radion	uclide migration within the surface environmen	nt.
Users: NCRAOS - Risk S	ection	]
Frequency	Development	License
Routine	None 7	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
3. General Assessment		_
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Water 🗸	Flood Defence	Quantitative
Waste	Fisheries	Criteria
	Rec & Nav	Assessment
Ригрозе	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity 🗸	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	
l. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical 🗸	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
	Physical	
Timescale	Biological 🗸	In-House
Resolution	Radioactivity	Third Party
i. Links to Standards, Targe	ts and Databases (Cross-reference)	
Standards As VANDAL	Databases	SECOS - dose conversion factors
. Comments		9
		- 534 N

1. Title TIME4		Form Ref RAS004
2. Model Purpose	· · · · · · · · · · · · · · · · · · ·	Acronym TIME4
	so the remit of the Environment Agency.	echniques to be normalised in
		+
Users: NCRAOA - Risk Sec	ction	
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
3. General Assessment		1
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
	Rec & Nav	Assessment ✓
Purpose	Conservation	Deterministic /
Regulation	PIR	Stochastic
Operational	Radioactivity -	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	
4. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical Physical	UNIX/Mainframe
Timescale	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Target	s and Databases (Cross-reference)	
Standards As VANDAL	Databases	
6. Comments	ė	<del></del>

3--

1. Title Chemical Transport Ads	orption Redox and Delay Model	Form Ref RAS005
2. Model Purpose		Acronym CHEMTARD
CHEMTARD is a coupled chemical geosphere.	transport code used to determine the n	nigration of radionuclides through the
Users: NCRAOA - Risk Section		
requency	Development	License
Coutine	None	Licensed
Periodic /	Arguing revision	If so, number
Occasionally	Being revised	Free -
	Under development	-  ····
. General Assessment		_
1edia	Function	Risk Assessment
	W. 6 W	
sir .	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Vater	Flood Defence	Quantitative
Vaste	Fisheries	Criteria
	Rec & Nav	Assessment
urpose	Conservation	Deterministic
egulation	PIR	Stochastic
perational	Radioactivity	Risk Assessment
lanning	Waste Policy	Risk Management
rioritising	Land Quality	
Further Assessment		
overage	Туре	System Base
ite Specific	Procedural	7 Panes
atchment	Mathematical	Paper PC - DOS
egional	Statistical	PC - DOS PC - Windows
ational	Chemical	UNIX/Mainframe
<u> </u>	Physical	OLATAMARITE AND A STATE OF THE
imescale	Biological	In-House
esolution	Radioactivity	Third Party
Links to Standards, Targets and	Databases (Cross-reference)	
andards None	Databases	CHEMVAL - thermodynamic database
1		
Comments		
UENTADD has been weed as a con-	as hash Jahannan and Committee	
HEMIAKO has been used to model	at both laboratory and field scale train	nsport of radionuclides and, more generally
avy metals in a contaminated aquifer		

I. Title pH Redox Equi	ibrium Equations	Form Ref RAS006
2. Model Purpose		Acronym PHREEQE
	orogram is designed to modelling geochemical react.  If, redox potential, and mass transfer as a function o	
		Tradition progress.
Users: NCRAOA - Ris	k Section	
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
3. General Assessment		
Media	Function	Risk Assessment
Air -	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
<del></del>	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	
4. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical ✓	UNIX/Mainframe
	Physical	
Timescale	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Ta	argets and Databases (Cross-reference)	
Standards	Databases	
6. Comments		
- -		<del></del>

Part IIA EPA 1990. Manuals.	Handbook, Guidance Notes and Supporting	Form RefLQ001
. Model Purpose		Acronym
o describe the process to be a	lopted by the Agency when exercising regulatory	control under the contaminated land
rovisions of Part IIA of the En	vironmental Protection Act 1990. The Handbook	k also provides links to associated
gency documentation (ie guid	ance notes and supporting manuals).	
sers: Agency staff and ma	de available externally (eg local authorities)	
requency	Development	License
outine -	None T	Lineaged
eriodic	Arguing revision	Licensed If so, number
ccasionally	Being revised	Free
-	Under development	
General Assessment		4
edia .	Function	Risk Assessment
ır 💮	Water Quality	Qualitative
and /	Water Resources	Semi-Quantitative
ater 7	Flood Defence	Quantitative
astc	Fisheries	Criteria
	Rec & Nav	Assessment
irpose	Conservation	Deterministic
egulation /	PIR	Stochastic
anning	Radioactivity Waste Policy	Risk Assessment
ioritising	Land Quality	Risk Management
¥ .		
Further Assessment		
verage	Туре	System Base
e Specific	Procedural	Paper
tchment	Mathematical	PC - DOS
gional	Statistical	PC - Windows
tional	Chemical Physical	UNIX/Mainframe
mescale	Biological	In-House
solution	Radioactivity	Third Party
Links to Standards, Targets	and Databases (Cross-reference)	
		av n. a a tau .
undards		to CLEA CONSIM/LANSIM &
*	legisl	model procedure tools hand
<u> </u>	105131	
Comments	6	
agency staff but externals ma	y incur costs.	
5 IIIU	<b>,</b>	

Title Model Procedures for t	he Management of Contaminated Land.	Form Ref LQ002
Model Purpose		Acronym
provide a structured framework	and procedural guidance for the identification	on, treatment and monitoring of
sers: Widespread use		
requency	Development	License
outine	None	Licensed
riodic	Arguing revision	If so, number
ccasionally	Being revised	Free
General Assessment	Under development	
edia	Function	Risk Assessment
ir —	Water Quality	Qualitative
and 7	Water Resources	Semi-Quantitative
ater	Flood Defence	Quantitative
aste	Fisheries	Criteria 🗾 🗸
	Rec & Nav	Assessment
ırpose	Conservation	Deterministic
gulation	PIR	Stochastic
perational anning	Radioactivity Waste Policy	Risk Assessment Risk Management
ioritising	Land Quality	Kisk Management
Further Assessment		*
overage	Туре	System Base
te Specific	Procedural	Paper
atchment	Mathematical	PC - DOS
egional .	Statistical	PC - Windows
ational	Chemical	UNIX/Mainframe
	Physical	
mescale N/A esolution	Biological Radioactivity	In-House  Third Party
Links to Standards, Targets a	nd Databases (Cross-reference)	
andards Other EQOs and QA St	n dode	islanto CLEA Consine The Internal
andards Johner EQUS and QA St		inks to CLEA, Consim, The Integrated lethodology, etc
Comments		
ompleted but with DETR for pub	lication (date not known). No licence require	ed but must pay cost of buying.

1. Title	Contaminated Land E	xposure Assessment	Form Ref LQ003
2. Model P	urpose		Acronym CLEA
Estimating I	ikely human exposure	for contaminants in soils for the develop	pment of guideline values to indicate whether there
	lone		<del></del>
			_
Frequency		Development	License
Routine		None	Licensed N/A
Periodic		Arguing revision	If so, number
Occasionally	- 1	Being revised	Free
3. General a	Assessment	Under development	
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
Land	<b>-</b>	Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative
Waste		Fisheries	Criteria 🗸
D		Rec & Nav	Assessment
Purpose		Conservation	Deterministic /
Regulation	<b>⊢</b>	PIR	Stochastic
Operational	<del></del>	Radioactivity	Risk Assessment
Planning Prioritising	<u> </u>	Waste Policy	Risk Management
Thornising	<b></b>	Land Quality	1
l. Further A	ssessment		
Coverage		Туре	System Base
ite Specific		Procedural	Paper
atchment	.0-	Mathematical	PC - DOS
Regional		Statistical 🗸	PC - Windows
lational		Chemical	UNIX/Mainframe
		Physical	
imescale		Biological	In-House
tesolution		Radioactivity	Third Party
. Links to S	tandards, Targets ai	nd Databases (Cross-reference)	of the second se
	ed to derive site-spe		Links to SVI model toxicological data
. Comments			
	<u>-</u>		
he model has l	been specifically develop	ped with UK parameters and application for ge	meric and site specific uses. The model has
ompetitors from	n overseas (HESP and A	ERIS Canadian soil models). It incorporates (	features from both models.

1. Title Short - Term i	₹isks	Form Ref LQ004
2. Model Purpose		Acronym
Development of model to	assess short-term risks to human health.	(4)
Users:		
Frequency	Development	License
Routine	None	Licensed N/A
Periodic	✓ Arguing revision	If so, number
Occasionally	Being revised Under development ✓	Free
3. General Assessment		<u> </u>
Media	Function	Risk Assessment
Air 🗀	Water Quality	Qualitative
	✓ Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria 🗸
	Rec & Nav	Assessment ✓
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	
4. Further Assessment		
Coverage	Туре	System Base
Site Specific	✓ Procedural ✓	Paper
Catchment	Mathematical .	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
	Physical	
Timescale	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, T	argets and Databases (Cross-reference)	
Standards Model procedu Handbook	res Part IIA Regulations Databas	ses Interface with CLEA.
6. Comments		

1. Title Buildings Risk		Form Ref LQ005
2. Model Purpose		Acronym
Guidance on assessing and managi guidance for Part IIA.	ng risks from contamination to building	materials including specific regulatory
Users: Widespread use including	ng regulators.	
Frequency	Development	License
Routine	None	Licensed N/A
Periodic 🗸	Arguing revision	If so, number
Occasionally	Being revised	Free
	Under development	]
B. General Assessment	<del></del>	
Media	Function	Risk Assessment
Air '	Water Quality	Qualitative
and 🗸	Water Resources	Semi-Quantitative
Vater	Flood Defence	Quantitative
Waste	Fisheries	Criteria
	Rec & Nav	Assessment
urpose	Conservation	Deterministic
Regulation	PIR	Stochastic .
Operational	Radioactivity	Risk Assessment
Planning Prioritising	Waste Policy	Risk Management
Tiornising	Land Quality	
. Further Assessment		
Coverage	Туре	System Base
ite Specific	Procedural ✓	Paper
atchment	Mathematical	PC - DOS
egional	Statistical	PC - Windows
lational	Chemical	UNIX/Mainframe
imescale	Physical Piological	In Ha
esolution	Biological Radioactivity	In-House Third Party
Links to Standards, Targets and		
	- 7-	
tandards Part IIA Handbook Mode	l Procedures Databases	-
	l	
. Comments		

t. Title Ecosystem Risks from	Contaminated Land	Form Ref LQ006
2. Model Purpose		Acronym ECORCL
To assess the risks to ecosystems	from contaminated sites	
Users: Land Quality Staff, Ex	ternal Users	**
Frequency	Development	License ,
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free /
	Under development	† ····
3. General Assessment		J
Media	Function	Risk Assessment
Air -	Water Quality	Qualitative
Land -	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste /	Fisheries	Criteria
Waste	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity -	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	Table Mailing Ciliforn
4. Further Assessment		4)
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical ✓	UNIX/Mainframe
	Physical	1:1
Timescale	Biological 🗸	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Targets a	nd Databases (Cross-reference)	
Standards Various reference leve	ls' available Databases	Various ecotox databases
6. Comments		let.

E C	ninated Impact or dethod.	Groundwater; Simulation by Mon	Form Ref LQ007
2. Model Purpose	•		Acronym ConSim
ConSim has been o	developed to help a	n assessor predict the impact of leaching	ng of contaminants from land contamination
on the quality of co output of predicted	ontrolled waters (and impact on water qu	d GW in particular). ConSim uses Mo uality arising from the migration of cor	onte Carlo techniques to provide probabilistic itaminants. ConSim considers biological, acting to attenuate pollutants within the
Users: WQ/LQ	operational staff.	Consultants	
Frequency		Development	License
Routine		None	Licensed
Periodic	7	Arguing revision	If so, number
Occasionally		Being revised Under development	Free
i. General Assessi	ment		
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
Vater		Flood Defence	Quantitative -
Waste		Fisheries	Criteria
···		Rec & Nav	Assessment
'urpose Legulation		Conservation PIR	Deterministic
Operational		Radioactivity	Stochastic
lanning	<del>                                      </del>	Waste Policy	Risk Assessment
rioritising	1	Land Quality	Risk Management
J			
Further Assessn	nent		
overage		Туре	System Base
ite Specific	1	Procedural	Paper
atchment		Mathematical	PC - DOS
egional ational	<b>——</b>	Statistical Characteristical	PC - Windows
ananai		Chemical /	UNIX/Mainframe
imescale		Biological	In-House
esolution		Radioactivity	Third Party
Links to Standa	rds, Targets and D	atabases (Cross-reference)	····/ L
tandards WQ stand	lards	Databases	
. Comments		<u></u>	
gency owned tool.			

I. Title	Methodology for groundwater to		ion of remedial targets r resources.	for soil and	Form RefLQ008	
. Mode	l Purpose				Астопут	
			nents for contaminated liments the ConSim sof		r to prevent pollution of	the aquatic
Jsers:			ional, Planning staff an licers, Consultants,	d		
requenc	су		Development		License	
Routine Periodic Occasions			None Arguing revision Being revised Under developmen	at	Licensed If so, number Free	/
3. Gener Media	al Assessment		Function		Risk Assessment	
Air  And  Vater  Vaste  Purpose  Regulation  Operation  Planning  Trioritisin	g d		Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity Waste Policy Land Quality		Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment Risk Management	7
	er Assessment					
Coverage Lite Speci Catchmen Legional Jational Limescale Lesolution	fic		Type  Procedural Mathematical Statistical Chemical Physical Biological Radioactivity	<i>y</i>	Paper PC - DOS PC - Windows UNIX/Mainframe In-House Third Party	<b>Y</b>
Links	to Standards, Tai	rgets and Da	ntabases (Cross-refere	nce)	i	× =
tandards	WQS			Databases Compli	ments The ConSim Sof	tware tool.
. Comm	ents			4		

	Validation of Analytica Analysis of Soil.	Techniques for Laboratory	Form Ref LQ009
. Model I	Purpose		Acronym
o provide	Quality Assurance in L	aboratory Analysis of Soil.	
sers:			]
requency		Development -	License
outine		None	Licensed N/A
riodic ccasionall	,	Arguing revision  Being revised	If so, number Free
ceasionan	, L	Under development	- '' <sup>**</sup>
General	Assessment		_
edia		Function	Risk Assessment
r		Water Quality	Qualitative
nd 		Water Resources Flood Defence	Semi-Quantitative
ater aste		Fisheries	Quantitative Criteria
2510		Rec & Nav	Assessment
rpose	G <u>)</u>	Conservation	Deterministic
gulation		PIR	Stochastic
perational anning		Radioactivity Waste Policy	Risk Assessment Risk Management
ioritising		Land Quality	Nisk Management
Further .	Assessment		
verage		Туре	System Base
e Specific	· []	Procedural	Paper -
tchment		Mathematical	PC - DOS
gional tional		Statistical Chemical	PC - Windows
atonai		Physical J.	UNIX/Mainframe
nescale	N/A	Biological	In-House
solution	N/A	Radioactivity	Third Party
Links to	Standards, Targets and	Databases (Cross-reference)	
ındards Sı	upport Guideline Values	Databases	
М	lodel Procedures & Part andboo		
Commen	te		
		n valid analytical measurements.	
os iciaies	to Holk Loike by D11 of	The state of the s	

1. Title River Quality Pla	nning	Form Ref WQ001
2. Model Purpose		Acronym RQP
A collection of stochastic pro	ogrammes for predicting the impact of single d	lischarges includes RQI, and CONCLASS.
Users: All regions		]
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free
	Under development	] ——
3. General Assessment		
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	+
Waste	Fisheries	Quantitative Criteria
	Rec & Nav	
Purpose	Conservation	Assessment Deterministic
Regulation /	PIR	Carabana
Operational	Radioactivity	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	, rusk Management
4. Further Assessment		19.0
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical /	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
	Physical	
Timescale	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Tars	ets and Databases (Cross-reference)	
		nuo
Standards EQS' River Ecosy General Quality As		WQ Archives
6. Comments		
		<del></del>

1. Title Simu	lation of Catchment	s	_	Form Ref WQ00	)2
2. Model Purpo	se			Acronym SIMC.	AT
The prime purpo distributions of r	se is to calculate the iver water quality the	effect of discharges and other roughout a catchment. It is pri	types of pollu marily used as	tion and abstractions on the a consent setting tool.	he statistical
Users: Angli	an, Midlands, Than	es, Southern, North West.			
Frequency		Development		License	
Routine		None		Licensed	
P <del>e</del> riodic		Arguing revision		If so, number	
Occasionally		Being revised Under development	<b>✓</b>	Free	1
3. General Asses	ssment	Chool development			
Media	•	Function		Risk Assessment	
Air					
		Water Quality	<b>_</b>	Qualitative	
Land	<b>———</b>	Water Resources		Semi-Quantitative	
Water	<b>├</b>	Flood Defence		Quantitative	<b>/</b>
Waste		Fisheries		Criteria	
<b>.</b>		Rec & Nav		Assessment	
Purpose		Conservation		Deterministic	
Regulation		PIR		Stochastic	<b>✓</b>
Operational	<del></del>	Radioactivity		Risk Assessment	
Planning Prioritising		Waste Policy Land Quality		Risk Management	
. Further Asses.	sment	de d			
Coverage		Tune		Surata B	
-Over age		Туре		System Base	
lite Specific	<b>4</b>	Procedural		Paper	
Catchment		Mathematical	1	PC - DOS	
Regional		Statistical	1	PC - Windows	
Vational		Chemical	1	UNIX/Mainframe	
		Physical	<b>✓</b>		
	Nin 5	_		95.0	
imescate Resolution	Mzx 5 100m	Biological Radioactivity		In-House Third Party	
. Links to Stand	ards, Targets and	Databases (Cross-reference)			
tandards River	standards (expresse	d as means an Da	tabases SIMCA	AT relies on river specific data	a files for flo
percent	iles) and site specifi		and qu archive	sality data and also uses d	ata from W
. Comments			•	<u></u>	
	aulibusina and sh	erefore very quick to set up.	SIMCAT an	laulatus de 11 de	

	ment Agency of Risk Assessment To	ols: Part 1 - Models and Procedu	ures
. Title	Temporal Overall Model for	or Catchments	Form Ref WQ003
. Model	Purpose		Acronym TOMCAT
	TOMOAT may be used as	tool for consent setting in order to achi	eve river quality standards and may also be
	used as a planning tool to m	odel, for example, phosphate to assist ta	argetting investment. It is an essential tool for
	calculating consent standard	for effluent discharges in catchments v	where there might be several works affecting
	the river quality, or where i	t is important to predict dissolved oxyge	en levels.
sers:	North East, Thames, Souther	rm, North West	]
requency	,	Development	License
Coutine		None	Licensed
Periodic		Arguing revision	If so, number
Occasional	lly	Being revised	Free
		Under development	
. Genera	l Assessment		
1edia		Function	Risk Assessment
Lir		Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
⊿ater	1	Flood Defence	Quantitative
√aste		Fisheries	Criteria
		Rec & Nav	Assessment
urpose		Conservation	Deterministic
Legulation	1	PIR .	Stochastic
perationa	al .	Radioactivity	Risk Assessment
lanning	1	Waste Policy	Risk Management
rioritising	;	Land Quality	- () -
Further	r Assessment		
overage		Туре	System Base
ite Specif	ic 🗾	Procedural	Paper
atchment		Mathematical	PC - DOS
egional		Statistical	PC - Windows
iational		Chemical	UNIX/Mainframe
		Physical	
		Biological	
Timescale	Max 3 yr	Radioactivity	In-House
Resolution			Third Party
		Databases (Cross-reference)	
, Links	U Standards, Targets and A		
Standards		Databases	MARIGOLD has been written to convert raw data in distributions for TOMCAT. TOMCAT also has a front end called TOMFRONT
. Comm	ents	31	
	TOMCAT is undergoing f	urther developments to deal with the eff	ects of algae in water resources. Currently
	there are three different ver	sions available.	
Contact	Richard Freestone	Location: Leeds	Tel: 728 4671
	Julianne Struve	Reading	725 5341

1. Title Quality Simulation	Along Rivers	Form Ref WQ004
2. Model Purpose		Acronym QUASAR
QUASAR is a predictive mode drainage and sewerage changes	to assess the effect of developments and ch - more stringent consents etc) on river quali	nanges within the catchment (for example, ity. QUASAR may be used in both a dynamic
and a planning capacity.		
Users: South West		7
requency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number 8
Occasionally	Being revised Under development	Free
. General Assessment		
1edia	Function	Risk Assessment
.ir	Water Quality	Qualitative
and •	Water Resources	Semi-Quantitative
Vater	Flood Defence	Quantitative /
Vaste	Fisheries	Criteria
urpose	Rec & Nav Conservation	Assessment
egulation 🗸	PIR	Deterministic Stochastic
perational	Radioactivity	Stochastic Risk Assessment
lanning /	Waste Policy	Risk Management
rioritising	Land Quality	
Further Assessment		
overage	Туре	System Base
te Specific	Procedural	Paper
atchment	Mathematical 🗸	PC - DOS
egional ational	Statistical	PC - Windows
ational	Chemical Physical	UNIX/Mainframe
	Biological /	In-House
mescale days		
esolution 500m reaches	Radioactivity	Third Party
Links to Standards, Targets	and Databases (Cross-reference)	
andards	Databases	QUASAR relies on raw data from both th
-	Daubases	Water Quality and Quantity archieves.
Comments		
is software was developed by the Ins	titute of Hydrology and is currently being fundamen	ntally revised as part of the LOIS Project. The ne
sion will be called QUESTOR which	will be more widely available.	

1. Title Estuar	rine (Contaminant)	Shell	Form Ref WQ005
2. Model Purpo	se		AcronymECoS
ECoS is a shell of	r framework for mo	delling contaminants such as dangero	ous substances in estuaries.
		<del></del>	
Users: South	West, West, South	em 	
Frequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised Under development	Free
3. General Asse	ssment		_
Media		Function	Risk Assessment
Аіг		Water Quality	Qualitative 🗸
Land		Water Resources	Semi-Quantitative
Water	<b>_</b>	Flood Defence	Quantitative
Waste		Fisheries	Criteria
D.,		Rec & Nav Conservation	Assessment / Deterministic
Purpose Regulation		PIR	Stochastic
Operational	<del>  •</del>	Radioactivity	Risk Assessment
Planning	<del>  _    </del>	Waste Policy	Risk Management
Prioritising	<b>-</b>	Land Quality	
4. Further Asses	ssment	(3)	
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment		Mathematical 🗸	PC - DOS
Regional		Statistical	PC - Windows
National	LJ	Chemical /	UNIX/Mainframe
	innestep ta	———	<del></del>
Timescale	days	Biological	In-House
Resolution	lkm reaches	Radioactivity	Third Party
5. Links to Stan	dards, Targets an	d Databases (Cross-reference)	
Standards EQSs	& Informal Region	al Targets Database	es Raw data from Water Quality Archive.
6. Comments			
The use of this softw	are has been modest to	late further development is being understant.	o include the sanitory suite of determinants. The
		lesign sampling programmes.	are surrory same or determinants. The

I. Title MIKE - 1 I	Dimensional and 1 Layered	Form Ref WQ006
2. Model Purpose		Acronym MIKE!!
	ring software package for the simulation of	f flows, water quality and sediment transport in
Users: Regions		+ 1
	(+*)	
Frequency	Development	License
Routine	None	Licensed
Periodic	✓ Arguing revision	If so, number 16
Occasionally	Being revised Under development	Free
l. General Assessmen	ıt .	
Media	Function	Risk Assessment
Air ·	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Vater	✓ Flood Defence	✓ Quantitative ✓
Vaste	Fisheries	Criteria
	Rec & Nav	Assessment
urpose	Conservation	Deterministic
Regulation	✓ PIR	Stochastic
Operational	Radioactivity	Risk Assessment
lanning	✓ Waste Policy	Risk Management
rioritising	Land Quality	
. Further Assessmen	t	9
Coverage	Туре	System Base
ite Specific	Procedural	Paper
atchment	✓ Mathematical	PC - DOS
egional	Statistical	PC - Windows
ational	Chemical	✓ UNIX/Mainframe ✓
_	Physical	7
imescale	Biological	In-House
esolution	Radioactivity	Third Party
. Links to Standards,	Targets and Databases (Cross-reference	
tandards		Databases
. Comments		
MKF11 is a moduler of	stem which includes a GIS interface. De-1	uced by DHI and supported in the UK by WS
ment is a mountal sy thing. It is need in the	IPM methodology for the most completed	ituations. Future developments likely but may not b
ia WS Atkine It is nee	I periodically by water quality and occasion	nuations. Future developments likely but may not b
	- F Steam J. o	, o, nood detence.

1. Title Quality	y of Estuaries Simul	ations		Form Ref WQ00	7
2. Model Purpos	e	_	<del></del>	Acronym QUES	TS
		ticularly with respect of nd target investment.	discharges and ho	w consent conditions may	y be
Users: North 1	East, Anglian, Midla	nds			<u></u> .:
Frequency	. 14	Development	<del>-</del>	License	
Routine Periodic Occasionally	1	None Arguing revision Being revised Under developme	nt ·	Licensed If so, number Free	3 or 4
3. General Asses	sment				
Media		Function		Risk Assessment	
Air Land Water Waste	✓ ·	Water Quality Water Resources Flood Defence Fisheries Rec & Nav		Qualitative Semi-Quantitative Quantitative Criteria Assessment	<b>/</b>
Purpose Regulation Operational Planning Prioritising	1	Conservation PIR Radioactivity Waste Policy Land Quality		Deterministic Stochastic Risk Assessment Risk Management	1
i. Further Assess	sment				
Coverage		Туре		System Base	
Site Specific Catchment Regional National	4	Procedural Mathematical Statistical Chemical Physical	<i>J J J</i>	Paper PC - DOS PC - Windows UNIX/Mainframe	1
Fimescale Resolution	1 hour timestep 2km reaches	Biological Radioactivity		In-House Third Party	7
5. Links to Stand	ards, Targets and I	)atabases (Cross-refer	ence)		
Standards EQSs &	Informal Regional	Targets		data from Water Qua	lity Archive
6. Comments			-21	Service in the service is a service in the service	
This software has	been developed by	WRc and is used widely	within the Agency	under licence. Use for	non stratifie

1. Title TIDEWA	Y	9		Form Ref WQ008	8
2. Model Purpose	· -	4.		Acronym TIDEW	/AY_
2-D Vertical modellin	ig in Estuaries.	_			
		<del></del>			
Users: NE, THA	MES, NORTH V	VEST		**	
Frequency		Development		License	
Routine		None		Licensed	
Periodic	1	Arguing revision		If so, number	3
Occasionally		Being revised Under developmen		Free	
		Onder developmen	" <b></b>		4
3. General Assessme	nt	7.0			
Media		Function		Risk Assessment	
Air		Water Quality	1	Qualitative	
and		Water Resources	7	Semi-Quantitative	
Vater Vaste	<b>✓</b>	Flood Defence Fisheries		Quantitative Criteria	
vasic		Rec & Nav		Assessment	
игрозе		Conservation		Deterministic	
legulation	_ ✓	PIR		Stochastic	
perational lanning		Radioactivity Waste Policy		Risk Assessment Risk Management	
rioritising	<b>✓</b>	Land Quality		rease management	
. Further Assessme	nt				
Coverage		Туре		Careton Dans	
_		Турс		System Base	
ite Specific	<b>/</b>	Procedural		Paper	
Catchment Legional		Mathematical Statistical	<b>-</b>	PC - DOS PC - Windows	
lational		Chemical		UNIX/Mainframe	<del></del>
_		Physical	1		
imescale desolution		Biological Radioactivity	<i></i>	In-House Third Party	1
. Links to Standard:	s, Targets and D	atabases (Cross-refere	nce)		
tandards EQS, Estua	ry Standards		Databases		-
Comments			<u>L</u>		
. Comments					
IR Wallingford softwa	are - used for stra	tified estuaries eg Tees,	Tyne.		

1. Title Aggreg	ated Dead Zone		Form Ref WQ009
2. Model Purpos	<u> </u>		Acronym ADZ
Assessing the time	of arrival of a pol	uting discharge during an incident.	
Users: North I	East, Thames? Ang	lian?	
Frequency	(4)	Development	License
Routine	×	None	Licensed
Periodic		Arguing revision	If so, number 3
Occasionally		Being revised Under development	Free
3. General Assess	sment		
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative
Waste		Fisheries	Criteria
_		Rec & Nav	Assessment
Purpose Banulation	<del></del>	Conservation PIR	Deterministic Stochastic
Regulation Operational	7	Radioactivity	Risk Assessment
Planning	7	Waste Policy	Risk Management
Prioritising		Land Quality	·
4. Further Assess	sment		
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment		Mathematical -	PC - DOS
Regional		Statistical	PC - Windows
National		Chemical Physical	UNIX/Mainframe
Timescale	<del></del>	Biological	In-House
Resolution		Radioactivity	Third Party
5. Links to Stand	lards, Targets and	Databases (Cross-reference)	
Standards		Databases	
6. Comments			
		ire package, and to a more generic metho- ing on the amount of data available in a ca	

1. Title POLLUX		Form Ref WQ010
2. Model Purpose		Acronym POLLUX
Users: North East, (via l	Lyonnaise des Eaux)	
Frequency	Development	License
Routine	None	Licensed
Periodic 🗸	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
3. General Assessment		
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
Purpose .	Rec & Nav Conservation	Assessment Deterministic
Regulation	PIR	Stochastic
Operational 🗸	Radioactivity	Risk Assessment
Planning	Waste Policy	Risk Management
Prioritising	Land Quality	
1. Further Assessment	-	
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical Physical	UNIX/Main frame
Timescale	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Targ	ets and Databases (Cross-reference)	Y 82
Standards	Databases	
. Comments		
Inder discussion, currently no	ot validated	

. Title Construction of B	unds for Oil Storage	Form Ref WQ011
. Model Purpose		Acronym
To define cost effective storage	ge protection facilities to reduce the risk of (oi	l) pollution of controlled waters.
Jsers: Agency EPOS, Str & oil industry.	uctural Engineers, Construction companies	
requency	Development	License
Coutine	None 🗸	Licensed
eriodic	Arguing revision	If so, number
ccasionally	Being revised	Free
	Under development	
. General Assessment		
1edia	Function	Risk Assessment
Air	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Vater	Flood Defence	Quantitative
Vaste	Fisheries	Criteria
	Rec & Nav	Assessment
'urpose	Conservation	Deterministic
tegulation	PIR	Stochastic
perational	Radioactivity	Risk Assessment
lanning	Waste Policy	Risk Management
rioritising	Land Quality	] —
. Further Assessment		
Coverage	Туре	System Base
ite Specific	Procedural	Paper /
Catchment	Mathematical	PC - DOS
Regional	Statistical	PC - Windows
lational	Chemical	UNIX/Mainframe
	Physical 🗸	
imescale	Biological	In-House
Resolution	Radioactivity	Third Party
. Links to Standards, Targ	ets and Databases (Cross-reference)	
itandards	Databases	s None
<u> </u>		
6. Comments	•	
R&D Project managed by CIF	IA undertaken by AOAs	

1. Title Farm	Activity and River	Management System	Form Ref WQ012
2. Model Purpo	se		Acronym FARMS I&II
FARMS I & II is	a distributed catchin	nent scale model to simulate the run-of	f of water and the transport of pollutants
arising from farm	wastes, into rivers.	It is used for developing farm waste n	nanagement plans.
Users:			]
Frequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised	Free
	V. 1-1	Under development	] ———
3. General Asses	sment		
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
Land	1	Water Resources	Semi-Quantitative
Water	7	Flood Defence	Quantitative
Waste	1111	Fisheries	Criteria
		Rec & Nav	Assessment
Purpose		Conscrvation	Determinisitie /
Regulation	<del></del>	PIR	Stochastic
Operational Planning		Radioactivity	Risk Assessment
rioritising	7	Waste Policy  Land Quality	Risk Management
_		Cana Quanty	l
l. Further Assess	ment		
Coverage		Туре	System Base
lite Specific		Procedural	Paper
Catchment		Mathematical	PC - DOS
Regional	<del></del>	Statistical	PC - Windows
lational .		Chemical	UNIX/Mainframe
im <b>e</b> scale	Weeks	Physical V	
linescale Resolution	Field	Biological  Radioactivity	In-House Third Party
	<u> </u>	Databases (Cross-reference)	Tund ranty
. Links to Stand	atus, rangeis and r	valabases (Cross-reference)	
tandards EQSs a	nd River Quality Ob	jectives Databases	Dependent on a cost database fo
L			information on disposal options.
. Comments		- ¥ -	
18340		· · · · · · · · · · · · · · · · · · ·	
AKMS has been 1	ested on the Cledda	u catchement in South West Wales an WRc.	d is now available for wider use within th

1. Title Simu	lation of Catchments		Form Ref WQ013
2. Model Purp	ose		AcronymSIMCAT
Stochastic mode	lling of water quality in	catchments. It is used as a consent se	tting tool.
		. W M. B. D. G	
Users: Angli West	· ·	st, West Midlands, Southern, South	
Frequency		Development	License
Routine	1	None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised Under development	Free
. General Asse	essment	Chair development	J
Media		Function	Risk Assessment
Nir		Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
Vater	1	Flood Defence	Quantitative
Vaste	100	Fisheries	Criteria
	•	Rec & Nav	Assessment
urpose		Conservation	Deterministic
Regulation		PIR	Stochastic <b>J</b>
Operational		Radioactivity	Risk Assessment
lanning		Waste Policy	Risk Management
rioritising		Land Quality	
. Further Asse	ssment		
Coverage		Туре	System Base
lite Specific	1	Procedural	Paper
Catchment	<b>4</b>	Mathematical	PC -Windows 95/DOS
tegional		Statistical /	PC - Windows
lational		Chemical	UNIX/Mainframe
h		Physical	
imescale Resolution	min3, max5 100 m	Biological Radioactivity	In-House
CSOILLION	100 m	Radioactivity	Third Party
. Links to Stan	dards, Targets and Da	tabases (Cross-reference)	
tandards River	standards (expressed as	mean and Databases	SIMCAT relies on river specific data files
	tiles) & site specific tar		for flow and quality data and also uses dat
	- 60		from WQ archives.
. Comments			
IMCAT is auto	calibrating and very on	ck to set up. It automatically coloular	s the statistical confidence limits for each
	ents required to meet Ri		s are statistical confluence limits for each
	7-3	<u></u>	<del></del>

. Title	Temporal Overall Model	for Catchments	Form Ref WQ014
2. Model	Purpose	;	Acronym TOMCAT
stochastic quality sta	modelling of water quality andards and may also be use	in catchments. It may be used as a tool for it is a planning tool to model, for example	or consent setting in order to achieve river le, phosphate to assist targeting investment.
Users:	North East, Thames, South	тет	
requency	y	Development	License
Routine Periodic Occasional	lly	None Arguing revision Being revised	Licensed If so, number Free
. Genera	l Assessment	Under development	
1edia		Function	Risk Assessment
and Vater Vaste  urpose egulation perational lanning rioritising  Further overage atchment egional	Assessment	Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity Waste Policy Land Quality  Type  Procedural Mathematical Statistical	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment Risk Management  System Base  Paper PC - DOS PC - Windows
ational imescale esolution	min 1 yr, max 1 yr 500 a reaches  Standards, Targets and I	Chemical Physical Biological Radioactivity  Databases (Cross-reference)	In-House Third Party
andards Commer		Databases	18.0

•

1. Title Incident Reaction In	terface System	Form Ref WQ015
2. Model Purpose		Acronym
	ion model for assessing the length of nodels primary function is for intake	time taken for a pollutant to travel down a catchment
Users: Field staff modellers	& water companies.	
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free
	Under development	
3. General Assessment		
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
Land	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
<u> </u>	Rec & Nav	Assessment
Purpose	Conservation	Deterministic /
Regulation	] PIR	Stochastic
Operational	Radioactivity	Risk Assessment
Planning	Waste Policy	Risk Management .
Prioritising	Land Quality	
4. Further Assessment		
	<b>T</b>	6.4. 8
Coverage	Туре	System Base
Site Specific	7 Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional ✓	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
-	Physical	
Timescale in seconds	] Biological	In-House
Resolution 1km reaches	Biological Radioactivity	Third Party
VC2010t1011		Initiarity
5. Links to Standards, Target	s and Databases (Cross-reference)	
Standards	Da	atabases Lotus Spreadsheet contamining time of
L		travel raw data. Linked to ADZ.
6. Comments		
		d

ı

ı

ı

ı

. Title Pollution Preventi	on Manual	Form Ref WQ016
. Model Purpose		Acronym
o provide consistant guidand sits, risk assessment and risl	ce to all Environment Agency field officers or	a pollution prevention issues including site
sers: Area EP staff, Reg	gional and Head Office Staff	144
requency	Development	License
outine	None	Licensed
riodic	Arguing revision	If so, number
casionally	Being revised	Free
	Under development	7 ——
General Assessment		_
edia	Function	Risk Assessment
	Water Quality	7 0 Harton
nd —	Water Resources	Qualitative
ater	Flood Defence	Semi-Quantitative Quantitative
aste /	Fisheries	Quantitative Criteria
	Rec & Nav	Assessment
rpose	Conservation	Assessment Deterministic
gulation	PIR	Stochastic
perational	Radioactivity	Risk Assessment
arming	Waste Policy	Risk Management
ioritising	Land Quality	
Further Assessment		
overage	Туре	System Base
66.	¬ ",, ——	-,
e Specific tchment	Procedural  Mathematical	Paper
gional -	Mathematical Statistical	PC - DOS
tional	Chemical	PC - Windows
Hotta	Physical	UNIX/Mainframe
nescale	Biological	In-House
solution	Radioactivity	Third Party
<u></u>	ts and Databases (Cross-reference)	
	IS and Daimoases (Cross-reference)	
andards	Databases	
Comments		
	1	
nere appropriate Wastes Reg inual:	gulatory/Disposal issues are addressed in any	new or revised guidance that goes into th

1.4

1. Title	Pollution Prevention S	ite Visits	Form Ref WQ017
2. Model P	urpose	<u> </u>	Acronym
	nd manage risk on wic ome form of PP activi	le ranging types of site to prevent pollution aty.	and improve water quality. All regions
Users:	Area EP Staff		]
Frequency		Development	License
Routine Periodic		None Arguing revision	Licensed If so, number
Occasionall	y	Being revised Under development	Free
3. General	Assessment	Citati do religiment	
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
Land	<b>—</b> —	Water Resources Flood Defence	Semi-Quantitative
Water Waste	<u> </u>	Fisheries	Quantitative Criteria
W asic	L	Rec & Nav	Assessment
Purpose		Conservation	Deterministic /
Regulation		PIR	Stochastic
Operational	7	Radioactivity	Risk Assessment
Planning		Waste Policy	Risk Management
Prioritising		Land Quality	
l. Further	Assessment		
Coverage		Туре	System Base
Site Specific		Procedural	Paper 🗸
Catchment	<b>7</b>	Mathematical	PC - DOS
Regional		Statistical	PC - Windows
National	<u> </u>	Chemical Physical	UNIX/Mainframe
Timescale	<del></del>	Biological	In-House
Resolution		Radioactivity	Third Party
5. Links to	Standards, Targets :	and Databases (Cross-reference)	46
Standards		Databases	PP site database under development/roll ou
L 5. Commer	nts		to regions.
		e visits cross-functional wherever possible	The number of cita visits for proventing
		e visits cross-functional wherever possible kedly of late because of insufficient resource	

ı

ł

. Title Works Notice	Risk Assessment Forms	Form Ref WQ018
. Model Purpose		Астопут
o provide a consistent ba	sis for deciding whether a works notice should	be served to prevent water pollution.
sers: Area EP Staff		
sers: Area EP Staff		*
requency	Development	License
outine	None	Licensed
riodic	Arguing revision	If so, number
ccasionally	Being revised	Free
General Assessment	Under development	
ledia	Function	Risk Assessment
. <del></del> -		
und	Water Quality	Qualitative
ater	Water Resources	Semi-Quantitative
aste	Flood Defence Fisheries	Quantitative
asic	Rec & Nav	Criteria
ırpose	Conservation	Assessment
gulation	PIR	Deterministic Stochastic
perational	Radioactivity	Risk Assessment
anning	Waste Policy	Risk Management
ioritising	Land Quality	
Further Assessment		
overage	Туре	System Base
e Specific	Procedural	Paper
tchment	Mathematical	PC - DOS
gional	Statistical	PC - Windows
tional	Chemical	UNIX/Mainframe
	Physical	
nescale	Biological	In-House
solution	Radioactivity	Third Party
Links to Standards, Tai	rgets and Databases (Cross-reference)	
ndards	Database	Provision made within new ground wate regulations database.
Comments		· B · · · · · · · · · · · · · · · · · ·
ce April 1999 The Environment form within the	nument Agency has been able to serve Works No guidance provides the basis for doing this cons.	otices to prevent pollution. The Risk

1. Title Prediction of Pesticide	Pollution in the Environment.	Form Ref WQ019
2. Model Purpose		Acronym POPPIE
Prediction of Pesticide Pollution in	the Environment.	
Users: To be implemented in I for Agency use only.	Regions and National Centres. This model i	
Frequency	Development	License
Routine	None	Licensed
Periodic /	Arguing revision	If so, number
Occasionally	Being revised  Under development	Free
3. General Assessment	1.0	-
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity Waste Policy	Risk Assessment
Prioritising	Land Quality	Risk Management
Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paner -
Site Specific	Mathematical	Paper PC - DOS
Regional	Statistical	PC - Windows
Vational	Chemical	UNIX/Mainframe
	Physical /	1 <u> </u>
imescale Few days-mnuai	Biological	In-House
Resolution 10 km 2	Radioactivity	Third Party
i. Links to Standards, Targets a	nd Databases (Cross-reference)	
Standards EQSs and Drinking Wa	ter Standards Databases	Many/GIS Layers
5. Comments		
		<del></del>

.

....

1. Title FAR?	M Pollution Prevent	ion Visit Proforma	Form Ref WQ020
2. Model Purpo	se		Асголут
Consistent data c	ollection on farm st	orage facilities and risk assessment of	f storage operations.
Users: Area l	EP Staff		
Frequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised	Free
,		Under development	-
General Asses	ssment	· L	<b>_</b>
Media		Function	Risk Assessment
\ir		Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
Vater		Flood Defence	Quantitative
Vaste		Fisheries	Criteria
. —	<u> </u>	Rec & Nav	Assessment
urpose		Conservation	Deterministic
Legulation		PIR	Stochastic
perational		Radioactivity	Risk Assessment
lanning		Waste Policy	Risk Management
rioritising		Land Quality	- And the state of
. Further Assess	sment		
Coverage		Туре	System Base
·		- · · · <del></del>	
ite Specific		Procedural	Paper
atchment	<b>-</b>	Mathematical	PC - DOS
egional ational	<b></b>	Statistical	PC - Windows
ational		Chemical J	UNIX/Mainframe
imacosta		Physical Pielogical	
imescale esolution	$\vdash$	Biological	In-House
ezoinnon		Radioactivity	Third Party
Links to Stand	ards, Targets and	Databases (Cross-reference)	
tandards		Database	s NVZ database transferred from MAFF.
<u></u>			
Comments			
enerally farm vie	its have reduced eig	milicantly in recent years but Garden	nment Agency has new responsibilities unde
	e to visit farms in N	VZs to ensure compliance.	mem Agency has new responsibilities unde
e Nitrate Directiv	- 10 11511 1-11115 MI 1		
ontact David C		Location: Bristol	

1. Title Pollut	tion Risk from Acci-	dental Influx to Rivers & Estuaries	Form Rel WQ021
2. Model Purpo	ose		Acronym PRAIRIE
To predict conse	quences of accident	al releases of chemicals into water cour	rses.
		v	
Users: Envir	onment Protection &	Poliution Prevention Staff	
Frequency		Development	License
Routine	*	None	Licensed
Periodic	$\vdash$	Arguing revision	If so, number 20
Occasionally		Being revised Under development	Free
3. General Asse	ssment		1
Media		Function	Risk Assessment
Air	<del></del>	Water Quality	Qualitative
Land	<b>}</b>	Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative
Waste		Fisheries	Criteria
W ASIC		Rec & Nav	Assessment
Dumnasa		Conservation	
Purpose Regulation		PIR	Deterministic Stochastic
Operational	-	Radioactivity	Risk Assessment
Planning	<u> </u>	Waste Policy	Risk Management
Prioritising	<b>├</b>	Land Quality	icisk ividilagement
4. Further Asse	ssment		
	ssmem	T	0.4
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment	1	Mathematical /	PC - DOS
Regional		Statistical	PC - Windows
National		Chemical	UNIX/Mainframe
		Physical	
Timescale		Biological	In-House
Resolution		Radioactivity	Third Party
5. Links to Star	dards, Targets and	Databases (Cross-reference)	
Standards Conta	ins toxicity informa	tion Databases	Integral
6. Comments			
Developed to sur	port Dee Protection	Zone.	
	se varies between re		

ı

ł

1. Title Urban Pollution	Management Manual	Form Ref WQ022
2. Model Purpose		Acronym UPM Manual
The UPM Manual is design urban sewage. This is achi	ed to deliver adequate environmental protection eved through the planning process and the use of	n at least cost for intermittent discharges of of specific tools developed for the purpose.
Jsers:		
requency	Development	License
Coutine Ceriodic Cocasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
. General Assessment	onder development	_1
ledia .	Function	Risk Assessment
ir and /ater /aste	Water Quality Water Resources Flood Defence Fisheries	Qualitative Semi-Quantitative Quantitative Criteria
urpose egulation perational anning	Rec & Nav Conservation PIR Radioactivity Waste Policy	Assessment Deterministic Stochastic Risk Assessment Risk Management
rioritising	Land Quality	Addit Management
Further Assessment		
overage	Туре	System Base
te Specific atchment egional	Procedural  Mathematical  Statistical	Paper PC - DOS
ational	Chemical	PC - Windows UNIX/Mainframe
mescale esolution	Physical Biological Radioactivity	In-House Third Party
Links to Standards, Tar	gets and Databases (Cross-reference)	
andards Intermittent Stand Classification.	ards and UPM, EQSs, R Databases	Specific to application.
Comments		5.0

1. Title Decision Support	Tool	Form Ref WQ023
2. Model Purpose		Acronym DECIST
Make better decisions when d	eciding levels of data collection in urban pol	lution management studies.
	<del></del>	
Users: Water Quality Plan	iners	J
Frequency	Development	License
Routine	None V	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
3. General Assessment	· • • • • • • • • • • • • • • • • • • •	
Media	Function	Risk Assessment
\ir	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Vater 7	Flood Defence	Quantitative
Vaste	Fisheries	Criteria
	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational /	Radioactivity	Risk Assessment
lanning	Waste Policy	Risk Management
Prioritising	Land Quality	]
. Further Assessment		
Coverage	Туре	System Base
lite Specific	Procedural	Paper
Catchment	Mathematical ✓	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
	Physical	
Timescale 2 monthly	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Targ	ets and Databases (Cross-reference)	
Standards Water Quality Inter	mittent (UPM) Database	es
5. Comments		h
ikely to be used in only 2 or	3 regions (North West & Severn Trent)	

1. Title	Catchment Inventory System			Form Ref WQ02	4
2. Model P	urpose			Acronym CATC	HIS
CATCHIS is	s a system for evaluating the relacations.	isk of specific pesticide	s being present in	specified surface water	and
Users:					-
Frequency		Development		License	
Routine		None		Licensed	
Periodic		Arguing revision		If so, number	
Occasionally	,	Being revised		Free	
	•	Under development			
3. General	Assessment				
Media		Function		Risk Assessment	
Air		Water Quality		Qualitative	
Land	7	Water Resources		Semi-Quantitative	
Water	<del>                                     </del>	Flood Defence	<del></del>	Quantitative	<del></del>
	- <del> </del>	Fisheries	-	Criteria	-
Waste		Rec & Nav	<b> </b>	Assessment	
D		Conservation		Deterministic	<del></del>
Purpose		PIR	<del></del>	Stochastic	
Regulation	<u> </u>		<b>  </b>	Risk Assessment	
Operational	<b>-</b>	Radioactivity	<b></b>		<b> </b>
Planning	<b>├</b> र्-	Waste Policy	$\vdash$	Risk Management	·
Prioritising		Land Quality		100	
4. Further	Assessment				
Coverage		Туре		System Base	
Site Specific		Procedural		Paper	
Catchment	7	Mathematical	<b>√</b>	PC - DOS	
Regional	<del></del>	Statistical		PC - Windows	
National		Chemical		UNIX/Mainframe	
	<u> </u>	Physical			
Timescale		Biological		In-House	
Resolution		Radioactivity		Third Party	1
5. Links to	Standards, Targets and Data	bases (Cross-referenc	:e)		
			Databasa Dana	ndent on SSLRC databas	e on soil
Standards				cteriactics and on pesticion	
L				mation.	
6. Commen	ts				
CATCHIS h	as been developed by SSLRC	with Severn Trent Wate	er Plc.		

t. Title	Source Protection	Zones models & maps		Form Ref WQ02:	5
				Acronym SPZs	
	Purpose				
Source Pr	otection Zones have	been developed to define areas in	which activities co	ald impact groundwater	abstraction.
Users:	Regions + Areas.				
Frequenc	у	Development	F)	License	
Routine	7	None	7	Licensed	
Períodic Occasions		Arguing revision Being revised		If so, number Free	<del></del>
o cousion.	,	Under developmen	t	- 1	<u> </u>
3. Gener	al Assessment				
Media		Function		Risk Assessment	
Air	r	Water Quality		Qualitative	
Land	7	Water Resources	<del></del>	Semi-Quantitative	$\vdash$
Water	7	Flood Defence		Quantitative	
Waste		Fisheries		Criteria	
	<del> </del>	Rec & Nav		Assessment	
Purpose		Conservation		Deterministic	<b>7</b>
Regulation	n <u>"</u> ✓	IPC		Stochastic	
Operation	al 🗸	Radioactivity		Risk Assessment	
Planning	<b>√</b>	Waste Disposal		Risk Management	<b>/</b>
Prioritisin	g	Cont. Land			
4. Furthe	r Assessment		1.		
Coverage		Type		System Base	
Site Speci		Procedural	<b>——</b>	Paper	<b>—</b>
Catchmen	'	Mathematical	<u> </u>	PC - DOS	<b>-</b>
Regional	<b> </b>	Statistical	$\vdash$	PC - Windows UNIX/Mainframe	<b>-</b>
National	<u></u>	Chemical Physical	<del>   </del>	ONLAMMINITAME	
	SU days		<b>├</b> — <b>ॅ</b> —		
Timescale	400days	+ Biological		In-House	
Resolution	1. 25,00	o Radioactivity		Third Party	
5. Links	to Standards, Targ	ets and Databases (Cross-refere	ice)		
Ctonds-d-	Links to Groundw	ater T	Databases Pate (	k maps held in regional of	offices and
ocandards	Protection Policy	atc.		z maps neid in regional d al digital databases - also	
	- roucdon's oney				
6. Comm	ients				
		tion Report which is the paper cop		and to dominate the	

ı

ı

I

1. Title Groundwater	Vulnerability Maps	Form Ref WQ026
2. Model Purpose		Асголуш
Groundwater Vulnerabilit	y Maps have been produced to define the vulnerab	bility of groundwater in any specific location
regardless of use		
Users:		3
3. Additional Informatio	מנ	
Frequency	Development	License
Routine	None	Licensed
Periodic Occasionally	Arguing revision	If so, number
Occasionally	Being revised Under development	Free
4. General Assessment	g.	-
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
	Water Resources	Semi-Quantitative
	Flood Defence	Quantitative
Waste	Fisheries Rec & Nav	Criteria
Purpose	Rec & Nav Conservation	Assessment Deterministic
	Conservation	Deterministic Stochastic
	Radioactivity	Risk Assessment
· —	Waste Disposal	Risk Management
Prioritising	Cont. Land	
5. Further Assessment		
Coverage	Туре	System Base
Site Specific	December 1	, (
Catchment	Procedural  Mathematical	Paper PC - DOS
Regional		PC - DOS PC - Windows
Vational		UNIX/Mainframe
	Physical	
Timescale	Biological	In-House
Resolution 1 10	Radioactivity	Third Party
. Links to Standards, Ta	rgets and Databases (Cross-reference)	*
		24.0
Standards		Production of Maps relies on SSLRC and BGS databases. The maps are available in
	ľ	digital form.
. Comments		

. Title Rapid Risk Assess	nent Methodology	Form Ref WQ027
. Model Purpose		Acronym
o provide consistent approac	h to risk assessment at industrial sites (non	IPC sites).
Jsers: Environment Plann	ing and Protection Officers	
. Additional Information		
requency	Development	License
Coutine	None	Licensed
Periodic	Arguing revision Being revised	If so, number
Occasionally	Under development	- rice
. General Assessment		_
Aedia	Function	Risk Assessment
Air T	Water Quality ✓	Qualitative
and	Water Resources	Semi-Quantitative
Vater <b>✓</b>	Flood Defence	Quantitative
Vaste	Fisheries	Criteria
urpose	Rec & Nav Conservation	Assessment Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity	Risk Assessment
lanning	Waste Policy	Risk Management
Prioritising	Land Quality	
. Further Assessment	•	
Coverage	Туре	System Base
lite Specific	Procedural /	Paper 🗸
Catchment	Mathematical	PC · DOS
Regional	Statistical	PC - Windows
lational	Chemical Physical	UNIX/Mainframe
imescale	Biological	In-House
Resolution	Radioactivity	Third Party
. I de la constante Tene	- Constant	
	ets and Databases (Cross-reference)	<u></u>
Standards	Databası	es
7. Comments		
Pollution Prevention Manual,	Vol 026 Part 1 Chapter 6	
Version 1.2, 19/97	voi ozo, i ait i, Chapter o	

consent Manual is a consent Manual is a consent Manual is a consent service addition.  Consent Manual is a consention.  Consent Manual is a consention is a consent service addition.	sics for ensuring the protection of WC	Acronym  termination of Consents for discharges. The The manual is a dynamic document subject
ne legal & technical batiews & addition.  Constant Area Consenting to the property of the prop	sics for ensuring the protection of WC	termination of Consents for discharges. The
nal Dischargers	eams	7
nformation		
	Development	License
	None Arguing revision Being revised Under development	Licensed If so, number. Free It is a controlled Document
zsment	<del></del>	_
	Function	Risk Assessment
1	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment
<del></del>	PIR Radioactivity Waste Policy Land Quality	Deterministic  Stochastic  Risk Assessment  Risk Management
ssment		
	Туре	System Base
	Procedural  Mathematical  Statistical  Chemical  Physical  Biological  Radioactivity	Paper PC - DOS PC - Windows UNIX/Mainframe  In-House Third Party
derde Tarrett and I	hatabases (Cross-reference)	
s, EC Directives,	Water Qualit Database	s Water Quality Archive Charging for discharges
Risk Assessment is im	plicit within Consent Determination.	The Manual covers policy, procedures,
	s, EC Directives, etives, RR classification is not intrinsic within Risk Assessment is im	Under development  Function  Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity Waste Policy Land Quality  Type  Procedural Mathematical Statistical Chemical Physical Biological Radioactivity Adards, Targets and Databases (Cross-reference)

+

1. Title Landfill	Simulation Model		Form Ref WMR001
2. Model Purpose			Acronym LandSim
(particularly ground leachate collection s	water). The mode	I considers leachate chemistry, engine	site on the quality of controlled waters eering performance of containment and attenuate pollutants before they reach the
waterhole.			
Users: Waste an Industry	d Groundwater st	aff (technical support), consultants ar	nd :
3. Additional Infor	mation		
Frequency		Development	License
Routine Periodic		None Arguing revision	Licensed If so, number
Occasionally	1	Being revised Under development	Free
4. General Assessπ	ient		<b>_</b> -1
Media	÷	Function	Risk Assessment
Air		Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water	1	Flood Defence	Quantitative
Waste	<b>_</b>	Fisheries	Criteria
		Rec & Nav	Assessment
Purpose		Conservation	Deterministic
Regulation		PIR	Stochastic
Operational	<b>!</b>	Radioactivity	Risk Assessment
Planning Prioritising	<del></del>	Waste Policy	Risk Management
-		Land Quality	
5. Further Assessm	ent		
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment		Mathematical	PC - DOS
Regional		Statistical	PC - Windows
National		Chemical	UNIX/Mainframe
Timesas!-		Physical	to Thomas
Timescale Resolution		Biological Radioactivity	In-House Third Party
6. Links to Standar	ds, Targets and	Databases (Cross-reference)	
Standards Water Qu		Database	s N/A
Waste Mr	anagement Operat of leachate)	ional Practice	
		<del></del>	
(eg head of			
(eg head of the control of the contr		h the planning stage in support of a Wiber of tools that may be adopted.	Vaste Management License (Reg 15

1. Title Operat	tor and Pollution Risk		Form Ref WMR	002	
2. Model Purpos	ie		Acronym OPRA for Waste		
recovery operation	ns by providing an inc ors are combined to gi	ward characterisation of dication of an occurrenc ve an indication of com	e of an undesirable ev	ent and the consequen	ces of the
Users: Enviro	nment Protection Off	icers			
3. Additional Inf	ormation				
Frequency		Development		License	
Routine Periodic Occasionally	/	None Arguing revision Being revised as pa of DETR consultati Under developmen	ion	Licensed If so, number Free	1
4. General Assess	sment	Onder developmen			
Media	9	Function		Risk Assessment	
Air Land Water Waste	<b>/</b>	Water Quality Water Resources Flood Defence Fisheries Rec & Nav		Qualitative Semi-Quantitative Quantitative Criteria Assessment	J Inspir
Purpose Regulation Operational Planning Prioritising	Prioritisatic system for licance rev On site w Planned	PIR Radioactivity	<b>✓</b>	Deterministic Stochastic Risk Assessment Risk Management	Site sy basis i give i curpur of Age à ope
5. Further Assess	ment				highing
Coverage		Туре		System Base	
Site Specific Catchment Regional National	7	Procedural Mathematical Statistical Chemical Physical	Contains procedural elements in inspection methodolog	UNIX/Mainframe	<i>Y</i>
Fimescale Resolution		Biological Radioactivity		In-House Third Party	
5. Links to Stands	ards, Targets and Da	tabases (Cross-referen	ce)		
Standards Ongoing	g Assessment	3.0	Databases REGIS		
7. Comments					
	<del></del>		<del></del> -	<del> </del>	

1. Title Flood Defence Mana	gement System	Form Ref FD001
2. Model Purpose	v	Acronym FDMS
The main purpose is to identify of that expenditure.	the need for capital/revenue expenditure and	d to determine the priorisation and justification
Users: All Regions		(4)
Frequency	Development	License
Routine Periodic Occasionally	None Arguing revision Being revised	Licensed ?  If so, number  Free
3. General Assessment	Under development	-
Media	Function	Risk Assessment
Air Land Water Waste  Purpose Regulation Operational	Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment
Planning Prioritising  4. Further Assessment	Waste Policy Land Quality	Risk Management
Coverage	Туре	System Base
Site Specific  Catchment  Regional  National	Procedural  Mathematical  Statistical  Chemical  Physical	Paper PC - DOS PC - Windows UNIX/Mainframe
Timescale Resolution	Biological Radioactivity	In-House Third Party
5. Links to Standards, Targets	and Databases (Cross-reference)	
Standards Standards of Servic for Prioritisation, Flo	•	s
6. Comments		
Developed in-house. Has a GIS	front end.	

1. Title Flood Stud	lies Report (PC B	ased)	Form Ref FD002
2. Model Purpose			Acronym MICROFSR
FSR is used for estimated only.	ition of design flo	ws for ungauged catchments. Flows	are estimated at one point in the catchment
Users:			7
Users:			•
Frequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised	Free
,		Under development	
3. General Assessme	nt		_
Media	•	Function	Risk Assessment
Air [		Water Quality	7 Oradination
Air Land		Water Resources	Qualitative Semi-Quantitative
Water		Flood Defence	<b>- </b>
Waste	<del></del>	Fisheries	Quantitative Criteria
T asic L		Rec & Nav	Assessment
Purpose		Conservation	Deterministic
Regulation [		PIR	Stochastic
Operational	1	Radioactivity	Risk Assessment
Planning	<b>✓</b>	Waste Policy	Risk Management
Prioritising		Land Quality	]
4. Further Assessmen	at	Ų.	
Coverage		Туре	System Base
on oiea [		Procedural	1 5
Site Specific Catchment		14.1	Paper PC - DOS
Regional	——	Statistical /	PC - DUS PC - Windows
Regional National	—	Chemical J	PC - Windows UNIX/Mainframe
L		Physical	OTTIVINAILE LINE
Timescale	5-72 hrs	Biological	In-House
Resolution		Radioactivity	Third Party
5. Links to Standards	s, Targets and D	atabases (Cross-reference)	•
Standards Standard of	Service	Databases	
<u> </u>			
6. Comments			14.
Originally developed to superseded by Microflo		Hydrology - flood estimation proce-	dures are continuing to be revised. May b

1. Title Freque	ency Simulation (of F	Form Ref FD003	
2. Model Purpos	e	<i>30</i> 0.	Acronym FRQSIM
FSR is used for es only.	timation of design fl	ows for ungauged catchments. Flows a	ue estimated at one point in the catchment
	<u> </u>		<del></del>
Users: At pres	ent it is mainly used	within Thames Region.	
		<u> </u>	3.44
Frequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally	<del>                                     </del>	Being revised	Free
	L	Under development	····
3. General Asses:	sment		J
Media		Function	Risk Assessment
Air	<b></b>	Water Quality	Qualitative
Land	<u> </u>	. Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative /
Waste	<u></u> i	Fisheries	Criteria
_		Rec & Nav	Assessment
Purpose	15	Conservation	Deterministic
Regulation		PIR	Stochastic
Operational		Radioactivity	Risk Assessment
Planning	<del></del>	Waste Policy Land Quality	Risk Management
Prioritising		Land Quarity	
4. Further Assess	sment		
Coverage		Туре	System Base
Site Specific	<u> </u>	Procedural	Paper
Catchment		Mathematical /	PC - DOS
Regional	<del>                                     </del>	Statistical /	PC - Windows
National	<del>                                     </del>	Chemical	UNIX/Mainframe
		Physical	
Timescale	5-72 hrs	Biological	In-House
Resolution		Radioactivity	Third Party
5. Links to Stand	ards, Targets and D	atabases (Cross-reference)	
	<del> </del>		<u> </u>
Standards Standar	ds of Service	Databases	
6. Comments			1)
	15	79.67	
FRQSIM was origi	inally developed by t	he GLC and has since been extensively	modified.

I

ı

ı

ı

ı

1. Title Regional Flow-Fore	Form Ref FD004	
2. Modet Purpose	3	Acronym
	System relies on output from one of three mo Model) to forecast flood events in river catchin	
Users:		7
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free
6. General Assessment	Under development	_
Media	Function	Risk Assessment
		KDK ASSESSMENT
Air	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Vater	Flood Defence	Quantitative
Vaste	Fisheries	Criteria
	Rec & Nav	Assessment
urpose	Conservation	Deterministic /
Regulation	PIR	Stochastic
Operational 🗸	Radioactivity	Risk Assessment
Planning	Waste Policy	Risk Management
rioritising	Land Quality	
. Further Assessment		
Coverage	Туре	System Base
ite Specific	Procedural	Paper
Estchment 🗸	Mathematical 🗸	PC - DOS
egional	Statistical	PC - Windows
lational	Chemical	UNIX/Mainframe
	Physical <b>/</b>	<u> </u>
imescale 13m to 12h ahea		In-House
esolution 2km grid	Radioactivity	Third Party
. Links to Standards, Targets	and Databases (Cross-reference)	
tandards	Databases	Relies on output from Isolated Even
<u> </u>		Model/ Thames Catchment Model/
Comments		18
		<del></del>

. Title ISIS				Form RefFD005	
2. Model Purpose				AcronymISIS	
SIS has been develope		SALMON and it mo	dels flow, water quality	and sediment transpo	ort in
complex river and char	inel networks.				
Users: Flood Defer	ce and Water Quali	ty staff.			
Frequency		Development		License	
Routine	<del></del>	None		Licensed	
Periodic		Arguing revision	<del>  </del>	If so, number	10
Occasionally	<del></del>	Being revised	7	Free	
· _		Under developmen			
. General Assessmer	t		<del></del>		
1edia		Function		Risk Assessment	
λir Γ	<del></del>	Water Quality		Qualitative	
Land		Water Resources	-	Semi-Quantitative	<del>  </del>
Vater -	<del>,  </del>	Flood Defence	<del>                                     </del>	Quantitative	
Vaste	<del></del>	Fisheries	<del>                                     </del>	Criteria	
_		Rec & Nav	<u> </u>	Assessment	1
urpose		Conservation		Deterministic	
Regulation		PIR		Stochastic	
Operational	7	Radioactivity		Risk Assessment	
Planning	<b>√</b>	Waste Policy		Risk Management	
Prioritising		Land Quality			
l. Further Assessmen	t		**		
Coverage		Туре		System Base	
Site Specific		Procedural		Paper	$\overline{}$
Catchment	<del></del>	Mathematical		PC - DOS	<b>  </b>
Regional	<u> </u>	Statistical		PC - Windows	7
Vational		Chemical		UNIX/Mainframe	<del>-</del>
_		Physical	1		
Timescale U	to 24 h-yrs	Biological		In-House	
Resolution	lm	Radioactivity		Third Party	1
5. Links to Standards	, Targets and Data	bases (Cross-refere	nce)		
Standards		<del></del>	Databases	<del></del>	
<u></u>					
5. Comments	-4				
SIS supersedes ONDA	, SALMON and var	ious other models. It	is used routinely by flo	od defence for model	flow and
	by water quality st		·-, -,	, <del></del> -	

2. Model Purpo		stem	Form Ref FD006		
2. Wiodel I di po	se		-	Acronym HEC-R	AS
HEC 2 is a backw	ater model for ascer	taining water levels along a	reach of river or op	en channel for a steady	flow rate.
,,,					
Users:					
Frequency		Development		License	
Routine		None		Licensed	
Periodic		Arguing revision		If so, number	
Occasionally		Being revised	<del></del>	Free	<del></del>
•	<del></del>	Under development			<u> </u>
3. General Asses	sment				
Media		Function		Risk Assessment	
Air		Water Quality		Qualitative	
Land	111	Water Resources			
Water		Flood Defence	<del></del>	Semi-Quantitative	
Waste		Fisheries	<del></del>	Quantitative	<b>-</b>
w asic		Rec & Nav	<b></b>	Criteria	
1000				Assessment	
Purpose		Conservation	<b>—</b>	Deterministic	1
Regulation	<b>-</b>	PIR	10-10	Stochastic	
Operational		Radioactivity		Risk Assessment	<b>1</b>
Planning		Waste Policy	<u></u>	Kisk Management	<u> </u>
Prioritising	1	Land Quality	<u></u>		
1. Further Asses:	sment				
Coverage		Туре		System Base	
Site Specific		Procedural :	<u> </u>	Paper	
Catchment		Mathematical	1	PC - DOS	1
Regional		Statistical		PC · Windows	- <del></del>
National		Chemical		UNIX/Mainframe	
		Physical	<del>-</del> /-		<b></b>
Timescale	Steady state	Biological	<del></del> -	In-House	
Resolution	50-200mm	Radioactivity		Third Party	
5. Links to Stand	ards, Targets and D	ratabases (Cross-reference	<del></del>		
	2	- +			
Standards			Databases		
6. Comments			<del></del>	-	
	oped originally by the sed this way at present	ne US Corps of Engineers	and could be used	more formally in risk	assessmen

1. Title Backwater Programs (C	Generic)	Form Ref FD007
2. Model Purpose		Acronym
Backwater programs are used to es	stimate water levels given in-channel geome	etry and roughness and a steady flow.
Users: All Regions		
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	'Free
-	Under development	
3. General Assessment		
Media	Function	Risk Assessment
Air —	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
<del></del> -	Rec & Nav	Assessment
Purpose	Conservation	Deterministic 🗸
Regulation	PIR	Stochastic
Operational	Radioactivity	Risk Assessment
Planning Prioritising	Waste Policy Land Quality	Risk Management
monusing	Land Quarty	
f. Further Assessment		
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical /	PC - DOS
Regional	Statistical	PC - Windows
National	Chemical	UNIX/Mainframe
	Physical 🗸	A .
l'imescale	Biological	In-House
Resolution	Radioactivity	Third Party
5. Links to Standards, Targets a	nd Databases (Cross-reference)	4
Standards of Service	Databases	
	J	
6. Comments		
Backwater programs are used in m	ost Regions and exist in many different for	ms.
carrier programs are ac-a min	g	

ı

ı

ı

ı

ŀ

1. Title MIKE - 2 Dimen	sional and I Layered	Form Ref FD008
2. Model Purpose		Acronym MIKE21
MIKE21 is a comprehensive phenomena in lakes, estuario	modelling system for 2D free surface flows an	d is applicable to hydraulic and related
	£	
Users:		_
Frequency	Development	License
Routine	None	Licensed
Periodic	Arguing revision	If so, number
Occasionally	Being revised	Free
	Under development	┪ ——
B. General Assessment		
Media	Function	Risk Assessment
Air T	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Vater /	Flood Defence	Quantitative
Vaste	Fisheries	Criteria
	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational	Radioactivity	Risk Assessment
lanning /	Waste Policy	Risk Management
rioritising	Land Quality	
. Further Assessment		
Coverage	Туре	System Base
ite Specific	Procedural	Paper
Catchment	Mathematical /	PC - DOS
egional /	Statistical	PC - Windows
lational	Chemical	UNIX/Mainframe
····	Physical	
imescale	Biological	In-House
esolution	Radioactivity	Third Party
. Links to Standards, Targ	ets and Databases (Cross-reference)	
tandards	Databases	
. Comments		
IIKE21 is a modular system	which includes advection/dispersion, water qua	ality, eutrophication, heavy metals, sedimen
ocesses, and long/short wave	e modelling. Supported in the UK by WS Atkins	S.

1. Title	NAM (Hydrological Mo	del)	Form Ref FD009
2. Model	Purpose		Acronym NAM
	deterministic conceptual nd semi empirical formul		ase of the hydrological cycle. It is based on
Users:			
osers.			
Frequenc	Y	Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasiona		Being revised	Free
	···	Under development	
3. Genera	l Assessment		_
Media		Function	Risk Assessment
Аіг		Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water	<del></del>	Flood Defence	Quantitative
Waste	<b>├</b> ──	Fisheries	Criteria
		Rec & Nav	Assessment
Purpose		Conservation	Deterministic /
Regulation		PIR	Stochastic
Operation		Radioactivity	Risk Assessment
Planning		Waste Policy	Risk Management
Prioritisin		Land Quality	
4. Furthe	r Assessment		
Coverage		Туре	System Base
Site Speci	lic /	Procedural	Paper
Catchmen		Mathematical 🗸	PC · DOS
Regional	·	Statistical /	PC - Windows
National	<del>  </del>	Chemical	UNIX/Mainframe
	<u> </u>	Physical	-
Timescale		Biological	In-House
Resolution		Radioactivity	Third Party
5. Links	to Standards, Targets an	d Databases (Cross-reference)	
Standards		Database	22
6. Comm	ents		
NAM inc	ludes snow storage, surfa	ce storage, lower zone storage, and gro	oundwater storage. DHI software supported i
the LIK by	WS Atkins.		

ķ.

.

ı

ı

ı

	ain Optimised usi dar and Satellite D	y Form RefFD	Form Ref FD010	
2. Model Purpose			Acronym FR(	ONTIERS
FRONTIERS is a model	that provides high	-resolution quantitative rainfall fo	recasts for flow prediction.	
Jsers:				*
Frequency	ra f	Development	License	
Routine Periodic Decasionally		None Arguing revision Being revised	Licensed If so, number Free	
3. General Assessment		Under development		
Media		Function	Risk Assessmen	nt
Air Land Water Waste	/	Fisheries	Qualitative Semi-Quantitati Quantitative Criteria	vc /
Purpose Regulation Operational Planning Prioritising	/	Rec & Nav Conservation PIR Radioactivity Waste Policy Land Quality	Assessment Deterministic Stochastic Risk Assessmen Risk Managemen	
. Further Assessment		4,	4	
Coverage		Туре	System Base	
Regional .	up to 6 is ahead)	Procedural Mathematical Statistical Chemical Physical Biological Radioactivity	PC - Windows UNIX/Mainframe	<i>y</i>
. Links to Standards, T	argets and Datab	ases (Cross-reference)		
tandards		Datab	pases Dependent on radar data radar.	from Chenie
Comments				
ystem being developed fi	orther at present.	<del></del>	<u> </u>	

Local R	ainfall Forecasting	System	Form Ref FD011
2. Model Purpose	•		Acronym
		is an advection model that models the	speed and direction of rainfall and can
orecast up to two	nours aneau.	<del></del>	
Jsers:			
requency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised Under development	Free
6. General Assess	ment		·
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
Water	1	Flood Defence	Quantitative /
Waste		Fisheries	Criteria
		Rec & Nav	Assessment
Purpose	<del></del>	Conservation	Deterministic /
Regulation Operational		PIR Radioactivity	Stochastic Risk Assessment
Planning		Waste Policy	Risk Assessment Risk Management
Prioritising		Land Quality	
4. Further Assess	ment		
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment	<b>1</b>	Mathematical /	PC - DOS
Regional	1	Statistical	PC - Windows
National		Chemical	UNIX/Mainframe
Timescale		Physical  Biological	In-House
Resolution	2km grid	Radioactivity	Third Party
S. Links to Stand	ards, Targets and I	Databases (Cross-reference)	
· · · · · · · · · · · · · · · · · · ·		Databassa	Dependent on radar data from Chenie
Standards			radar.
6. Comments			
The Local Rainfal	Radar System was	originally developed by the Institute of I	Hydrology.

	erating Advanced Non- d-surface Flood-Forecas	Casts for Deployment in Operational ting	Form Ref FD012
. Model Purp	oose		Acronym GANDALF
ANDALF is	an operational thundersto	orm warning procedure for use with r	iver flood forecasting systems.
sers:	3 - E		]
requency		Development	License
outine		None	Licensed
eriodic		Arguing revision	If so, number
ccasionally		Being revised	Free
		Under development	]
General Ass	essment		
ledia		Function	Risk Assessment
ir		Water Quality	Qualitative
 und		Water Resources	Semi-Quantitative
ater		Flood Defence	Quantitative
'aste	121	Fisheries	Criteria
		Rec & Nav	Assessment
urpose		Conservation	Deterministic 🗸
egulation		PIR	Stochastic
perational	<u> </u>	Radioactivity	Risk Assessment
anning	<u> </u>	Waste Policy	Kisk Management
ioritising	<u>.                                    </u>	Land Quality	
Further Ass	essment		*
overage		Туре	System Base
te Specific		Procedural	Paper
atchment	<del>                                     </del>	Mathematical	PC - DOS
gional		Statistical	PC - Windows
ational		Chemical	UNIX/Mainframe
		Physical /	
mescale	5mins-15mins	Biological	In-House
solution	2km grid	Radioactivity	Third Party
Links to Star	ndards, Targets and Da	tabases (Cross-reference)	
andards		Databases	
Comments			
	<del></del>		<del></del>

orobabilistic failure at Methodology and act Users:  Staff at N	analysis and asses t as a second tier	I to provide a detailed quantitative risk a sment of areas of flooding. This method detailed assessment.	
orobabilistic failure at Methodology and act Users:  Staff at N	analysis and asses t as a second tier	sment of areas of flooding. This method	
Methodology and actual Users: Staff at N	as a second tier		
-1-		detailed assessment.	lology is designed to compliment the Space
	CRAOA		
Fraguency			
riequency		Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasionally		Being revised	Free
•		Under development	
3. General Assessm	ent		
Media		Function	Risk Assessment
Air		Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative
Waste		Fisheries	Criteria
		Rec & Nav	· Assessment
Purpose		Conservation	Deterministic
Regulation		PIR	Stochastic '
Operational		Radioactivity	Risk Assessment
Planning Prioritising		Waste Policy Land Quality	Risk Management
rnonusing	1	Land Quanty	
4. Further Assessm	ent	*	
Coverage		Туре	System Base
Site Specific		Procedural	Paper ✓
Catchment		Mathematical	PC - DOS
Regional		Statistical	PC - Windows
National		Chemical	UNIX/Mainframe
		Physical	
Timescale	<b></b>	Biological Radioactivity	In-House Third Party
Resolution		Radioactivity	I mird Party
5. Links to Standar	rds, Targets and	Databases (Cross-reference)	
Standards Standard	s of Service	Databases	
6. Comments		_	<del></del>

1. Title Indicative Floodplain	Maps	Form Ref FD014
2. Model Purpose		Acronym IFM
Show areas within which may be	vulnerable to flooding from the rivers of	r the sea.
Users:		
Frequency	Development	License
Routine	None 🗸	Licensed
Periodic	Arguing revision	lf so, number
Occasionally	Being revised Under development	Free
3. General Assessment		
Media	Function	Risk Assessment
Air	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
Water	Flood Defence	Quantitative
Waste	Fisheries	Criteria
	Rec & Nav	Assessment
Purpose	Conservation	Deterministic
Regulation	PIR	Stochastic
Operational Vanning	Radioactivity Waste Policy	Risk Assessment
rioritising	Land Quality	Risk Management
. Further Assessment	Jan 1	
Coverage	Туре	System Base
Site Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
tegional	Statistical	PC - Windows
lational /	Chemical	UNIX/Mainframe
	Physical /	
imescale	Biological	In-House 🗸
Resolution	Radioactivity	Third Party
. Links to Standards, Targets ar	d Databases (Cross-reference)	
tandards	Database	es Institute of Hydrology Flooded Area
		database.
. Comments	2.0	ŕ
haded indicative flood - prone area	as shown on 1:10000 man scale	
manufacture in the second promoting	and the second state second	

. Title Flood Estimation Han	dbook	Form Ref FD015
2. Model Purpose		Acronym FEH
EH is used for estimation of des	ign flows for ungauged sites. It is a devel	opment of the flood studies report.
Users:		7
Frequency	Development	License
Routine Periodic Decasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
3. General Assessment		
Media	Function	Risk Assessment
Air Land Water Waste	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment
Purpose  Regulation Operational Planning Prioritising	Conservation PIR Radioactivity Waste Policy Land Quality	Deterministic  Stochastic  Risk Assessment  Risk Management
4. Further Assessment		
Coverage	Туре	System Base
Site Specific Catchment Regional National	Procedural Mathematical Statistical Chemical Physical	Paper PC - DOS PC - Windows UNIX/Mainframe
Timescale Resolution	Biological Radioactivity	In-House Third Party
5. Links to Standards, Targets	and Databases (Cross-reference)	
Standards of Service	Database	es
6. Comments		

ı

ı

ı

ı

ı

ı

٠

1. Title Database of	Erosion Deposition and Flooding	Form Ref FD016
2. Model Purpose		Астопут
Database of 1500 reports planning guidance.	ed flooding and erosion events in Britain from 177	0 to present. Developed by DETR to inform
Users: I. Meadowcro	oft	7
Frequency	Development	License
Routine Periodic Occasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
3. General Assessment	onder development	
Media	Function	Risk Assessment
Air Land Water Waste Purpose Regulation	Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic
Planning Prioritising	Radioactivity  Waste Policy  Land Quality	Risk Assessment Risk Management
. Further Assessment		
Coverage	Туре	System Base
ite Specific Catchment Regional Vational	Procedural Mathematical Statistical Chemical Physical Biological	Paper PC - DOS PC - Windows UNIX/Mainframe
tesolution	Radioactivity	Third Party
. Links to Standards, T	argets and Databases (Cross-reference)	
tandards	Databases	
. Comments		
nformation on location, co	ourse severity	

E

	ment Agency of Risk Assessment	Tools: Part 1 - Models as	nd Procedures	i.	
1. Title	River Habitat Surve	y		Form Ref CO001	
2. Model	Purpose			Acronym RHS	
	To determine river h	abitat quality in the context	of river type an	d level of physical modifica	tion.
Users:		on Staff; LEAPS planners, figures, external environmenta	*		
	onal Information				
Frequency	у	Development		License	
Routine Periodic Occasiona	ally	None Arguing revision Being revised Under developme	ent	Licensed If so, number Free	-
4. Genera	al Assessment	•			
Media		Function		Risk Assessment	
Air Land Water Waste Purpose Regulation Operations		Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity Waste Policy	<i>J J J J J J J J J J</i>	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment Risk Management	<i>J J J</i>
Prioritising	g	Land Quality		Not management	
5. Furthe	er Assessment				
Coverage	:	Туре		System Base	
Site Speci Catchmen Regional National Timescale		Procedural Mathematical Statistical Chemical Physical Biological		Paper PC - DOS PC - Windows UNIX/Mainframe In-House	<i>J J</i>
Resolution		Radioactivity		Third Party	
6. Links	to Standards, Target:	s and Databases (Cross-ref	erence)		
Standards			Databases R	HS database in Microsoft ac	cess.
7. Comm	nents				1
		exists, as well as individual			ough IS.
	Further remement.				
Contact	Marc Naura	Location: Warring	gton, NW	Tel: 721 245	4

ı

ı

ı

	ent Agency of Risk Assessment Tools:	Part 1 - Models and	Procedures		
1. Title	River Corridor Survey			Form Ref CO002	
2. Model l	Purpose			Acronym RCS	
	To provide information on t	he plant communities a	nd land use along w	atercourses.	
Users:	Conservation, flood defence environmental organisations		external		
3. Additio	nal Information				
Frequency		Development		License	
Routine Periodic Occasional	y	None Arguing revision Being revised Under development	/	Licensed If so, number Free	<b>-</b>
I. General	Assessment	_			
Media		Function		Risk Assessment	
Air Land Water Waste	7	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	7	Qualitative Semi-Quantitative Quantitative Criteria Assessment	/
Purpose Regulation Operational Planning Prioritising	7	Conservation PIR Radioactivity Waste Policy Land Quality		Deterministic Stochastic Risk Assessment Risk Management	
. Further	Assessment				
Coverage	•	Туре		System Base	
Site Specific Catchment Regional Vational Fimescale Resolution		Procedural Mathematical Statistical Chemical Physical Biological Radioactivity	<b>/</b>	Paper PC - DOS PC - Windows UNIX/Mainframe In-House Third Party	<i>'</i>
5. Links to	Standards, Targets and Da	tabases (Cross-referer	ice)		
Standards	<b>.</b> □	D	atabases		
. Commer	nts				
F	Regional usage varies - Than	nes carry out RCS on a	olling programme h	agis approp all nateb	iente 1
Ĺ	regional usage varies - 1 Ban	es cary out NCS on a	oums brostamme D	asis across all catchm	ients.
Contact	Fran Bayley	Location: Frimley		Tel: 725 4501	

Title Landscape Asse	sment	Form Ref CO003
		_
Model Purpose		Acronym
To provide info	mation on landscape character of river corri	dors.
Sers: Conservation		1
Additional Information		
requency	Development	License
outine	None 7	Licensed
eriodic	Arguing revision	If so, number
ccasionally	Being revised	Free
	Under development	1
General Assessment	-	_
ledia	Function	Risk Assessment
ir —	Water Quality	Qualitative
and	Water Resources	Semi-Quantitative
/ater	Flood Defence ( 1	Quantitative
/aste	Fisheries	Criteria
asie	Rec & Nav	Assessment
·	Conservation	Deterministic
urpose	PIR	Stochastic
egulation		
perational	Radioactivity	Risk Assessment
lanning	Waste Policy	Risk Management
rioritising	Land Quality	_
. Further Assessment		
Coverage	Туре	System Base
ite Specific	Procedural	Paper
Catchment	Mathematical	PC - DOS
Regional	Statistical	PC - Windows
Vational	Chemical	UNIX/Mainframe
Vational	Physical	
		In-House
l'imescale	Biological	Third Party
Resolution	Radioactivity	1 Initiaratty
5. Links to Standards, Ta	rgets and Databases (Cross-reference)	
Standards	Databases	-
7. Comments		
Use of landscap	e assessment varies between regions. Thame	es probably commission the most.
L		
Contact Richard Copas	Location: Reading	Tel: 725 5565

•

Environment Agency					-
Register of Risk Asses.	sment Tools: Par	t 1 - Models and	d Procedures		
1. Title Habitats Dire	ctive Review			Form Ref CO004	
2. Model Purpose			<u>-</u>	Acronym [	
To review all	consents / activities	affecting Habitats	and Birds Directive	sites.	-
Users: All functions	and English Nature				
3. Additional Information	on				
Frequency		velopment	7	License	
Routine	✓ No	ne	<del></del>	Licensed	
Periodic		guing revision	1	If so, number	
Occasionally		ng revised der development		Free	<b>1</b>
4. General Assessment		L. doveropinant			
Media	Fu	nction		Risk Assessment	
Air	<b>√</b> Wa	ter Quality	<del></del>	Qualitative	
<u> </u>		ter Resources	1	Semi-Quantitative	<del></del>
Water	<b>√</b> Flo	od Defence	7	Quantitative	7
Waste	<b>√</b> Fish	neries	✓	Criteria	7
		& Nav	<b>✓</b>	Assessment	<b>-</b>
Purpose		servation	<del></del>	Deterministic	
	PIR	_	<del>-</del>	Stochastic	
Operational Planning		ioactivity ,	1	Risk Assessment Risk Management	<b>—</b>
Prioritising		d Quality	7	KISK Management	
5. Further Assessment					
Coverage	Тур	e		System Base	
Site Specific	Proc	edural		Paper	
Catchment		hematical		PC - DOS	
Regional	Stati	istical		PC - Windows	7
National		mical		UNIX/Mainframe	
Timescale	Phy:	ogical	<del> </del>	In-House	
Resolution		ioactivity		Third Party	7
6. Links to Standards, Ta	argets and Database	es (Cross-referenc	ce)		
Standards		D	atabases		<del></del>
<u> </u>					
7. Comments					
This is a nation	nal "must - do" to cor	nply with Europea	n legislation.	·	
Contact Pam Nolan	Loca	ation: Homebased		Tel: 01925 65	2 798
		i			0.7.

•

\*\*

Environment Agency Register of Risk Assessment Too	ols: Part I - Models and Procedures	
1. Title Planning applications sc	reening process	Form Ref CO005
2. Model Purpose		Acronym
To prioritise planning ap	pplications for consultation with conservati	ion staff.
Users: Conservation and planni	ng staff	
3. Additional Information Frequency	Development	License
Routine Periodic Occasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
4. General Assessment  Media	Function	Risk Assessment
Air Land Water Waste  Purpose Regulation Operational Planning Prioritising	Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity Waste Policy Land Quality	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment Risk Management
5. Further Assessment		
Coverage	Туре	System Base
Site Specific Catchment Regional National	Procedural Mathematical Statistical Chemical Physical	Paper PC - DOS PC - Windows UNIX/Mainframe
Timescale Resolution	Biological Radioactivity	In-House Third Party
6. Links to Standards, Targets and	d Databases (Cross-reference)	
Standards	Databases	
7. Comments		
Other regions have simil	ar systems, but some have no filter mechan	ism.
Contact Alaster Driver	Location: Reading	Tel: 725 5563

1. Title FLOWPATH		Form Ref WR001
2. Model Purpose		Acronym FLOWPATH
FLOWPATH is a propriatory mod model may also be applied in grous groundwater flow model.	el which is applied in the determination ndwater pollution incident investigation	of Groundwater Protection Zones. The n. It is a 2D steady state numerical
Users:		
requency	Development	License
Coutine Periodic Occasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
. General Assessment	· <u>.                                    </u>	
/ledia	Function	Risk Assessment
and Vater Vaste  urpose egulation perational danning rioritising	Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity Waste Policy Land Quality	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment Risk Management
Further Assessment	, ,	-
очетаде	Туре	System Base
atchment degional ational	Procedural Mathematical Statistical Chemical Physical	Paper PC - DOS PC - Windows UNIX/Mainframe
Days - Months	Biological	In-House
esolution grid	Radioactivity	Third Party
Links to Standards, Targets an		
andards	Databases	
Comments		
LOWPATH was developed by Wa	aterloo University, Canada. Input data Groundwater Protection Zones.	is specific to application. Flowpath is th

.

1. Title MO	DFLOW/MODPATH		Form RefWR002
2. Model Purp	iose		Acronym MODFLOW
			iant flow in anisotropic, heterogeneous, it Groundwater flow and particle backing
Users: Regi	ons		
Frequency		Development	License
Routine Periodic Occasionally	1	None Arguing revision Being revised Under development	Licensed If so, number Free
3. General Ass	essment		
Media		Function	Risk Assessment
Air Land Water Waste	<i>d</i>	Env Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment
Purpose Regulation Operational Planning Prioritising		Conservation IPC Radioactivity Waste Disposal Cont. Land	Deterministic Stochastic Risk Assessment Risk Management
l. Further Ass	essment		
Coverage		Туре	System Base
Site Specific Catchment Regional National Fimescale Resolution	Days - Decades Down to <50m	Procedural Mathematical Statistical Chemical Physical Biological Radioactivity	Paper PC - DOS PC - Windows UNIX/Mainframe  In-House Third Party
5. Links to Sta	ndards, Targets and D	atabases (Cross-reference)	
Standards		Databases	
6. Comments			
FLOWPATH is	generally preferred over	er MODFLOW for derivation at Groun	dwater Protection Zones.

I. Title RI	ESPLAN		Form Ref WR003
2. Model Pu	rpose		Acronym RESPLAN
	onomic prioritisation of r		L•1
Development	scheduling / resource al	location modelling	*
Users: Ni	igel Hepworth / Clair Rig	§g	
3. Additiona	I Information		
Frequency		Development	License
Routine		None	Licensed
Periodic	<b>_</b>	Arguing revision	If so, number
Occasionally	LJ	Being revised Under development	Free
4. General A	ssessment		_
Media		Function	Risk Assessment
Air	<del></del>	Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water	1	Flood Defence	Quantitative
Waste		Fisheries	Criteria
		Rec & Nav	Assessment
Purpose		Conservation	Deterministic
Regulation	<b></b>	PIR Padioactivity	Stochastic
Operational Planning	<del></del>	Radioactivity Waste Policy	Risk Assessment
Prioritising		Land Quality	Risk Management
			_
5. Further As	isessment	4	
Coverage		Туре	System Base
Site Specific		Procedural	Paper
Catchment		Mathematical	PC - DOS
Regional	<b>7</b>	Statistical	PC - Windows
National		Chemical	UNIX/Mainframe
		Physical Piological	4
Timescale Resolution	<b>——</b>	Biological Radioactivity	In-House
	<b></b>	<del></del>	Third Party
6. Links to St	andards, Targets and I	Databases (Cross-reference)	
Standards Wa Pla	nter Resources ns and Strategies	Databases	
7. Comments	)		
			*
	-		

. .

1. Title Finite Difference C	ode	Form Ref WR004
2. Model Purpose	110	AcronymBU
	dwater model for modelling time/variant fl s are 2D/3D steady state/time variant groun	
Users: Regions		
Frequency	Development	License
Routine Periodic Decasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
3. General Assessment		<del>-</del>
Media	Function	Risk Assessment
Air Land Water Waste	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment
Purpose Regulation Operational Planning Prioritising	Conservation PIR Radioactivity Waste Policy Land Quality	Deterministic Stochastic Risk Assessment Risk Management
4. Further Assessment		
Coverage	Туре	System Base
Site Specific Catchment Regional National	Procedural Mathematical Statistical Chemical Physical	Paper PC - DOS PC - Windows UNIX/Mainframe
Timescale decades  Resolution Less than 50	Biological Radioactivity	In-House Third Party
<u> </u>	ets and Databases (Cross-reference)	
Standards	Databas	ses
6. Comments		
Developed by Birmingham Ur	iversity	

ı

ı

I

ı

ı

ı

ı

ı

i

1. Title Into	egrated Catchment M	anagement Model	Form Ref WR005
2. Model Pur	pose	÷	Acronym ICMM
This is a finite systems.	difference groundwa	ter model for modelling transient flow	v in anisotropic, heterogeneous layered aquifer
Users: Res	gions		7
			•
Frequency		Development	License
Routine		None	Licensed
Periodi <b>c</b>		Arguing revision	If so, number
Occasionally	1	Being revised Under development	Free
3. General As	sessment		
Media		Function	Risk Assessment
4ir		Water Quality ?	Occations .
and		Water Resources	Qualitative Semi-Quantitative
Water		Flood Defence	<b>→</b>
Waste	- <del>*</del>	Fisheries	Quantitative Criteria
	<u> </u>	Rec & Nav	Assessment
Purpose		Conservation	Deterministic
Regulation		PIR	Stochastic
Operational	1	Radioactivity	Risk Assessment
Planning		Waste Policy	Risk Management
rioritising		Land Quality	]
. Further Ass	essment	100	1.0
Coverage		Туре	System Base
ite Specific		Procedural	Paper
Catchment		Mathematical /	PC - DOS
Regional		Statistical	PC - Windows
lational		Chemical ?	UNIX/Mainframe
		Physical	1
imescale	decades	Biological	In-House
esolution	Down to less	Radioactivity	† ~ <del>   </del>
·	than 50m		Inird Party
. Links to Sta	ndards, Targets and	Databases (Cross-reference)	,
tandards		Databases	Associated database - incorporated into model code.
. Comments		·	
fott MacDonal	d - Commercial Code	<del></del>	

1. Title Single Layer Finite Difference Code			Form Ref WR006	5	
Model Purpose		Acronym SLAY			
his is a finite ground	vater model fo	modelling transient flow in	anisotropic, he	terogeneous, single layer	ed, aquifer
sers: Regions	<u>.</u>				
requency		Development		License	
outine	4.	None	<b>✓</b>	Licensed	
eriodic		Arguing revision		If so, number	
ccasionally	1	<ul> <li>Being revised</li> <li>Under development</li> </ul>		Free	
. General Assessme	nt	onder development			
	•••	2 1			
ledia		Function		Risk Assessment	
ir	1	Water Quality	7	Qualitative	
and	1	Water Resources	1	Semi-Quantitative	
/ater	1	Flood Defence		Quantitative	1
/aste [		Fisheries		Criteria	
_		Rec & Nav		Assessment	1
urpose		Conservation		Deterministic	<b>1</b>
egulation [		PIR		Stochastic	
perational	<b>√</b>	Radioactivity		Risk Assessment	<b></b>
lanning		Waste Policy		Risk Management	<b>/</b>
rioritising		Land Quality			
. Further Assessme	nt				
Coverage		Туре		System Base	
ite Specific	7	Procedural		Paper	
Catchment	<u> </u>	Mathematical	1	PC - DOS	<b>1</b>
egional		Statistical	- 1	PC - Windows	
lational		Chemical		UNIX/Mainframe	1
*		Physical			
	Dayi to lecades	Biological	-	In-House	
<b>.</b>	Down to	Radioactivity	<del></del>	Third Party	
	50m	, _		•	الــــــــــــــــــــــــــــــــــــ
. Links to Standard	s, Targets and	Databases (Cross-reference	·)		
Standards		<del></del>	Databases	- S	<del></del>
, andards		·*·			
6. Comments					
Developed by Birmin	gham Universit	y and Halcrow.			

1. Title MIKE - System Hy	Form Ref WR007	
2. Model Purpose		Acronym MIKE SHE
MIKE SHE is a dynamic mode	lling tool for the analysis planning and manaer and groundwater, in particular to assess p	agement of water resources and environmental
Users: Regions		otomas impact of numan activities.
Frequency	Development	License
Routine Periodic Occasionally	None Arguing revision Being revised Under development	Licensed If so, number Free
3. General Assessment		
Media	Function	Risk Assessment
Air Land Water Waste	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment
Purpose Regulation Operational Planning Prioritising	Conservation PIR Radioactivity Waste Policy Land Quality	Deterministic Stochastic Risk Assessment Risk Management
. Further Assessment	4	
Coverage	Туре	System Base
ite Specific Catchment Regional Itational	Procedural Mathematical Statistical Chemical Physical Biological	Paper PC - DOS PC - Windows UNIX/Mainframe
tesolution	Radioactivity	Third Party
. Links to Standards, Targets	and Databases (Cross-reference)	
tandards	Databases	
Comments		
perseded by CONSIM		

. Title Well Head Pro	tection Area	3.		Form Ref WR008	
	<u> </u>			Acronym WHPA	
. Model Purpose					
he Well Head Protection teady state numerical gro			of Groundwater Prote	ection Zones. The mode	el is a 2D
Jsers:		***			
1		<del></del> _			
requency	3.11	Development		License	. 8
Routine		None	<b>7</b>	Licensed	
Periodic		Arguing revision		If so, number	
Occasionally	<b>✓</b>	Being revised Under developmen	,	Free	
. General Assessment		-			
Media		Function		Risk Assessment	
Air 🗀		Env Quality		Qualitative	
and	7	Water Resources	1	Semi-Quantitative	
Vater	1	Flood Defence		Quantitative	<b>—</b>
Waste		Fisheries		Criteria	
		Rec & Nav		Assessment	
Purpose		Conservation		Deterministic	
Regulation	<del>/</del>	IPC -		Stochastic Risk Assessment	$\vdash$
Operational Planning	<del>-</del>	Radioactivity Waste Disposal	<del></del>	Risk Management	<b>-</b>
Prioritising		Cont. Land		Mak Management	
Tiothismig .		Jona 22.3		11-11	
1. Further Assessment					
Coverage		Туре		System Base	
Site Specific	<b>✓</b>	Procedural		Paper	
Catchment	1	Mathematical	1	PC - DOS	7
Regional		Statistical	<b></b>	PC - Windows	
National		Chemical Physical	7	UNIX/Mainframe	
1 mileseale	- Months	Biological		In-House	
Resolution Dow	n to <1 m	Radioactivity		Third Party	
5. Links to Standards,	Fargets and Dat	abases (Cross-refere	ence)	- 2	
Standards		,* L	Databases		
6. Comments					
Flowpath is generally pre	ferred over WHF	A which has develor	ed by the US EPA.		<del></del>
I towpaut is gonerally pro					

ŀ

ł

ł

I

l

1. Title	Surface Water Abstr Licensing Procedure		Form Ref WR009
2. Model	Purpose	Acronym SWALP	
The determ	nination of surface wa	ter abstraction licence applications.	
Users:	Water Resources sta	ĭ	]
3. Additic	onal Information		
Frequency	y	Development	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasional	lly	Being revised	Free
. Genera	l Assessment	Under development	
Media		Function	Risk Assessment
Air	<u> </u>	Water Quality	Qualitative
and		Water Resources	Semi-Quantitative
Vater	1	Flood Defence	Quantitative
Waste		Fisheries	Criteria
		Rec & Nav	Assessment
Purpose Regulation		Conservation PIR	Deterministic /
Operationa		Radioactivity	Stochastic Risk Assessment
lanning		Waste Policy	Risk Management
rioritising		Land Quality	
. Further	Assessment		
Coverage		Туре	System Base
ite Specifi	c 🔽	Procedural	Paper
Catchment	7	Mathematical 🗸	PC - DOS
Regional		Statistical	PC - Windows
Vational		Chemical	UNIX/Mainframe
imescale		Physical Biological	
esolution		Radioactivity	In-House Third Party
. Links to	Standards, Targets	and Databases (Cross-reference)	
tandards [	Statute	Databases	Hydrolog
L			Naid
. Comme	nts		
n process o	of review following go	vernment directions.	

Environn	nent Agency				
Register o	of Risk Assessment	Tools: Part 1 - Models a	nd Procedur	res	
3 371.1	F-27 7 F1 17			7 P. (WPO)	
1. Title	Micro Low Flows V	21	ō	Form Ref WR010	,
				J	
2. Model 1	Purpose			Acronym	1
	-1-				
	Used to estimate nat	ural and artificially infiltrat	ed flow statist	tics at ungauged river sites.	
				<del></del>	
Users:	Water Resources sta	ff (hydrogeological) and W	ater Quality	1	
	Staff.				
				}	i i
3. Additio	nal Information				
Frequency		. Development		License	
				-	
Routine		None		Licensed	1
Periodic Occasional	u,   - <del>  </del>	Arguing revision Being revised		If so, number Free	up to 20
Occasional		·Under developme	ent 🗸 .	1	
4. Genera	Assessment	•		J	
N4-4:- ·		Function		Risk Assessment	
Media		runction		RISK Assessment	
Air		Water Quality	1	Qualitative	
Land		Water Resources	<b>-</b>	Semi-Quantitative	
Water		Flood Defence		Quantitative	
Waste		Fisheries Rec & Nav		Criteria	<del></del>
Purpose		Conservation		Assessment Deterministic	<del>                                     </del>
Regulation		PIR		Stochastic	<b> </b>
Operationa		Radioactivity		Risk Assessment	1
Planning		Waste Policy		Risk Management	
Prioritising	;	<ul> <li>Land Quality</li> </ul>			
5 Further	r Assessment			**	
J. Further	ressessment				
Coverage		Type		System Base	
Site Specif	fic 7	Procedural	,	Paper	
Catchment		Mathematical	<del></del>	PC - DOS	<del></del>
Regional		Statistical	1	PC - Windows	v 30
National		Chemical		UNIX/Mainframe	
		Physical	1		_
Timescale	<u> </u>	Biological		In-House	<b>—</b>
Resolution	<u></u>	Radioactivity		Third Party	
6. Links	io Standards, Target	s and Databases (Cross-re	ference)	4	
Standards			Databases	Rainfall, artificial infiltration	and
				abstraction.	
				· -	
7. Comm	ents				
	System developed b	v IM within 7 of the 8 Agen	cy Regions, N	New version V31 due to be rele	eased. From
		nplemented nationally.	,		
				,	
Contact	Robert Grew	Location: Exeter		Tel: 724 207	12
	1			1	ı

	nent Agency of Risk Assessment To	ols: Part I - Models and Proce	dures
1. Title	Water Resources Mode	:1	Form Ref WR011
2. Model l	Purpose	-	Асголут WRM
		evels of service for consumption gi	y of existing and proposed WR Development ven existing and forecast demands against
Users:			
3. Addition Frequency	nal Information	) Development	License
Routine Periodic Occasionall 4. General	Assessment	None Arguing revision Being revised Under development	Licensed If so, number Free
Media		Function	Risk Assessment
Air Land Water Waste Purpose	7	Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic
Regulation Operational Planning Prioritising	<b>/</b>	PIR Radioactivity Waste Policy Land Quality	Stochastic Risk Assessment Risk Management
5. Further	Assessment		
Coverage Site Specific Catchment Regional National	c	Procedural Mathematical Statistical Chemical	Paper PC - DOS PC - Windows UNIX/Mainframe
Timescale Resolution		Physical Biological Radioactivity	In-House /
6. Links to	Standards, Targets and	d Databases (Cross-reference)	
Standards [	DGI-IV	Database	s Regional hydrometry water demands an forecasts.
7. Commer	nts	+	
ſ			
Contact [1	Dave Elford	Location: Reading	Tel: 725 5386

.

	nent Agency of Risk Assessment	Tools: Part 1 - Models and Procedu	res
1. Title	Thames Catchment N	Model River Flow Generation	Form Ref WR012
2. Model l	Purpose		Acronym
		es of possible future river flows for differe model (for reservoirs). River Flows + res	
Users:			
		(¥)	
3. Additio Frequency	nal Information /	Development	License
Routine Periodic Occasional	lly	None Arguing revision Being revised Under development	Licensed If so, number Free
4. Genera	l Assessment	1	•
Media		Function	Risk Assessment
Air Land Water Waste Purpose Regulation Operationa		Water Quality Water Resources Flood Defence Fisheries Rec & Nav Conservation PIR Radioactivity	Qualitative Semi-Quantitative Quantitative Criteria Assessment Deterministic Stochastic Risk Assessment
Planning Prioritising	3	Waste Policy Land Quality	Risk Management
	r Assessment	_	_
Site Specif Catchment Regional National		Procedural Mathematical Statistical Chemical	Paper PC - DOS PC - Windows UNIX/Mainframe
Timescale Resolution		Physical Biological Radioactivity	In-House Third Party
6. Links t	to Standards, Targets	and Databases (Cross-reference)	
Standards		Databases	Daily rainfall and River Flow databases.
7. Comm	ents		
	May be calibrated for	or any river site where real flow data is avai	ilable.
Contact	Brian Greenfield	Location: Reading	Tel: 725 5320

Environ	ment Agency		E = +
		ols: Part 1 - Models and Procedur	res
1. Title	Drought Management	System	Form Ref WR013
	Diodgin Management		Form Ket WK013
2. Model	Purpose		Acronym DMS
	Operational planning a	nd management of water resources. Progressiven statistical likelihood of different	ovides a broad assessment of risk of rainfall scenarios given actual reservoir
	storage, and run off at t	hat time.	Talifian scenarios given actual reservoir
Users:			
030.3.			
	-		
	onal Information		
Frequency	у	Dévelopment	License
Routine		None	Licensed
Periodic		Arguing revision	If so, number
Occasional	lly	Being revised	Free
4. Genera	l Assessment	Under development	- <del></del>
Media	ō	P	
MICOIN		Function	Risk Assessment
Аіг		Water Quality	Qualitative
Land		Water Resources	Semi-Quantitative
Water		Flood Defence	Quantitative
Waste		Fisheries	Criteria
Purpose		Rec & Nav Conservation	Assessment
rurpose Regulation		PIR	Deterministic
Operational		Radioactivity	Stochastic Risk Assessment
Planning	· -	Waste Policy	Risk Assessment Risk Management
Prioritising		Land Quality	Mak Management
_		` .	
. Further	- Assessment	4	
Coverage		Туре	System Base
Site Specifi	ic	Procedural	Paper
Catchment		Mathematical	PC - DOS
Regional		Statistical	PC - Windows
Vational		Chemical	UNIX/Mainframe
		Physical /	
Timescale Resolution	<b>—</b>	Biological Radioactivity	In-House Third Party
. Links to	Standards, Targets and	Databases (Cross-reference)	
_			
tandards	DGI-IV	Databases Ra	ainfall data
. Comme	nts		
ſ			
1		<del></del>	
Contact	Dave Elford	Location: Reading	Tel: 725 5386
Į			A

Environment Agency									
Register of Risk Assessment Tools: Part 1 - Models and Procedures									
1. Title	Bursts and Backgrou	ınd Estimates	Form 1	Form Ref WR014					
2. Model I	Purpose	***	Acron	Acronym BABE					
	•								
	To estimate the level of leakage of water from distribution system.								
Users:	Water Resources Planning staff National Water Analysts and Resources Planners								
3. Additional Information									
Frequency		Develop	nent	License	•				
Routine		None	T	License	:d				
Periodic	7	Arguing r		If so, m	umber				
Occasional	у	Being rev Under der		Free					
Under development  4. General Assessment									
Media		Function		Risk A	ssessment				
Air		Water Qu	ality	Qualita	tive				
Land	(4)	Water Re		Semi-Q	uantitative				
Water		Flood De	ience	Quantit					
Waste		Fisheries Rec & Na	—	Criteria Assessr		ļ			
Purpose		Conserva		Determ		· -			
Regulation		PIR.		Stochas					
Operational	÷	Radioacti	vity	Risk As	sessment				
Planning		Waste Po	licy	Risk Ma	anagement				
Prioritising		Land Qua	lity						
5. Further	Assessment		A						
Coverage	- 5	Турс		System	Base				
Site Specifi	с	Procedura	ıl 🗸	Paper					
Catchment		Mathema		PC - DO					
Regional	<b>4</b>	Statistical		PC - Wi					
National		Chemical Physical	-	— UNIX/N	Mainframe	L			
Timescale	r a	Biologica		In-Hou	se	<del></del>			
Resolution		Radioacti		Third F					
6. Links to Standards, Targets and Databases (Cross-reference)									
Standards Applies principles of "Managing Databases Supply/Infrastructure data customer base									
	Leakage" information Water Industry accepted standard								
7. Comments									
Set of 9 reports (WRC contractor) covering key areas of leakage assessment and management used to									
	create the estimation software (ACCESS).								
Contact	David Howarth	Location:	NWDMC-Worthi	ing Tel:	723 2127				

ı

ı

Environment Agency								
Register	of Risk Assessment	Tools: Part 1 - Models and Procedu	res					
1. Title	Demand Forecasting	Model	Form Ref WR015					
2. Model	Purpose		Acronym DFM					
	To forecast public wa	ater supply demands for the future.						
1	- 1							
Users:	National Water Analysts and Water Resources Planners Regional Water Resources Planning staff							
3. Additio	onal Information							
Frequency	y	Development	License					
Routine Periodic Occasional	lly	None Arguing revision Being revised Under development	Licensed If so, number Free					
4. Genera	l Assessment	Onder development	ı					
Media		Function	Risk Assessment					
Air Land Water Waste	7	Water Quality Water Resources Flood Defence Fisheries Rec & Nav	Qualitative Semi-Quantitative Quantitative Criteria Assessment					
Purpose Regulation Operationa Planning Prioritising		Conservation PIR Radioactivity Waste Policy Land Quality	Deterministic Stochastic Risk Assessment Risk Management					
5. Further Assessment								
Coverage		Туре	System Base					
Site Specifi Catchment Regional National Timescale Resolution	Yearly	Procedural Mathematical Statistical Chemical Physical Biological Radioactivity	Paper PC - DOS PC - Windows UNIX/Mainframe  In-House Third Party					
6. Links to	Standards, Targets a	and Databases (Cross-reference)						
Standards	tandards Water Industry Standard Method Databases Census data Supply and demand data							
7. Comme	nts		. #					
ĺ	Product of joint NRA/	UKWIR R&D project. Contractor was N	ERA.					
Contact	David Howarth	Location: NWDMC-Worthing	Tel: 723 2127					