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REVALUATION 2005

Pipeline Rating Forum

Meeting 4th December 2003

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The Valuation Office is an Executive Agency of the Inland Revenue

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Preface

The Valuation Office Agency is endeavouring to achieve more accurate and reliable rateable values, which will be beneficial to ratepayers as well the Agency.

More openness and transparency on the composition of valuations and ultimately, willingness to prior agree rating assessments will raise ratepayers' confidence in our valuations.

This confidence will give ratepayers more budgetary certainty and aid their cash flow. It should also reduce the need to appeal against their assessments.

The Valuation Office Agency will gain from reduced numbers of rating appeals. This will enable resources to be utilised in improving our performance and service.

The key to the success of this initiative is co-operation.

The correctness of our initial valuations depends on accurate market/cost information, which we require from ratepayers. As mentioned above, we are willing to discuss valuation issues prior to the valuations coming into force.

Ratepayer Forums

We hope to use the forums as an informal route to helping ratepayers develop a better understanding of our work and to increase their confidence in the rateable values we produce. This may change the appeals-based culture that we have now, and allow more effort to go into preparing for revaluations and agreeing bases of value.

We will be asking local forums to consider our valuation schemes so that we can gain their support for our approach to the valuation of particular types of properties in specific localities.

The forums can also be used by ratepayers to raise issues of concern to them.

- Encourage a better understanding of the rating valuation process
- Ensure that the rating valuation process is efficient and business ratepayer-friendly
- Encourage ratepayers to work with the VOA to effect changes to and increase confidence in rating valuations being acceptable first time
- Inform and advise the VOA and anticipate problems
- Encourage ratepayers to provide information requested by the VOA, making clear the reasons for the request and the benefits to the ratepayers of responding
- Promote the benefits of transparency in information exchange
- Help to define and refine the presentation of understandable summary valuations
- Assist in ensuring that the VOA's requests for information are clear and business ratepayer-friendly and that the reasons for them are understood

Revaluation 2005 - Pipelines

1. Introduction.

The 2000 Rating Valuation Scale was agreed with Keith Norman, of Gerald Eve, on behalf of a consortium of rating agents and was successfully accepted and applied to the valuation of pipelines. A similar approach is envisaged for the 2005 Revaluation, but with more input from the Industry.

The Pipeline Rating Forum.

In February 2003 the United Kingdom Onshore Pipeline Operators' Association (UKOPA) was approached by the Specialist Valuation Unit (SVU) to form the Pipeline Rating Forum.

The first meeting of the Pipeline Rating Forum took place on 9 June 2003. Huge Morris of BPA represented UKOPA with Keith Norman of Gerald Eve being their rating advisor. The meeting allowed for an explanation of the rating and revaluation processes, an opportunity to see the type of valuation that would be produced, details of the timetable envisaged, and the opportunity to discuss and exchange information.

With Pipelines being valued by reference to the Contractors basis of valuation it was emphasized that this relied on the collection and analysis of cost evidence from the construction of new pipelines built in the last few years. The meeting was informed that the Valuation Office had obtained building cost information from Transco concerning 24 pipelines. Although this information was confidential, Transco had indicated that they would consider an approach from UKOPA for the disclosure of the details. Transco is a member of UKOPA and it was agreed that UKOPA would look into this.

The "First Draft Valuation Scale" was presented to the Forum for their consideration and it was left for them to make representations and exchange information with the SVU. Mr. Morris was to report back to the members of UKOPA.

In June 2003 UKOPA wrote to the SVU informing them that they had agreed to appoint agents to manage the revaluation and these agents would work through the Forum with Keith Norman as their focal point.

2. Collection of Cost Evidence.

It was evident from " Pipes & Pipelines International " magazine for the past few years that the new pipelines built recently are mainly for Transco. Transco's five year published plan identifies new pipelines for the National Transmission System and for the Local Distribution Zones, but others have also have been built. "Utilityweek" is also a source of information. Information has also been obtained from pipe manufacturers, specialist pipe coating companies, contractors, and their internet web sites.

Other information on costs has been available from the Valuation Officer's own files, the Valuation Office Regional Building Surveyor and details supplied by the Scottish Assessors.

Transco has supplied cost information relating to 24 pipelines built in 2000, 2001, and 2002. More detailed cost information has been received from the contractors involved with these schemes. Other information has also been obtained.

All the information collected is "Confidential" and can- not be disclosed to a third party, although discussions are continuing on this point. Some of the cost information is already in the public domain, by way of press releases or details contained on Transco's and the contractor's internet web sites.

It is this information that forms part of this report.

3. Analysis of Cost Evidence / preparation of proposed Valuation Scales.

All the current available information that the Valuation Office has obtained has been analysed in order to determine the relevant price elements, which make up the Valuation Scales.

A "Revised Valuation Scale" has been produced and this is outlined later in this report.

Details of 24 Pipelines from Transco

List of headings of addition information supplied by Transco

Copies of letters / e-mails exchanged with Transco.

Transco Pipelines

VO Ref.	Pipeline	Diameter mm	Diameter inches	Length km	Year Commissioned	Steel Grade	Line Pipe Coating	Contractor	County
1	Cambridge/Matching Green	1220	48	46.0	2002	X80	FBE	Murphy	Cambridgeshire
2	St Fergus/Aberdeen	1220	48	71.5	2001	X80	FBE	NACAP Lawrence JV	Aberdeenshire
3	Hatton/Silk Willoughby	1220	48	40.5	2001	X80	FBE	Laing	Lincolnshire
4	Hadlow/High Halden	1220	48	37.0	2001	X65	FBE	McAlpine PPS JV	Kent
5	Easton Grey/Minety	1220	48	15.5	2001	X65	FBE	Entrepose	Wiltshire
6	Nailsea/St Georges	1220	48	12.5	2001	X65	FBE	Entrepose	Somerset
7	Drointon/Sutton-on-the-Hill	1220	48	25.5	2000	X80	FBE	Murphy	Staffs/Derbyshire
8	Betchworth/Rowbook	1220	48	23.0	2000	X65	FBE	Entrepose	Surrey
9	West Hull (Wawne to Elerton)	1050	41	17.5	2002	X65	FBE	AMEC Spie	Yorkshire
10	Mawdesley/Warrington	1050	41	40.0	2001	X65	FBE	McAlpine PPS JV	Lancashire
11	Willington/Steppingley	900	36	22.0	2002	X65	FBE	Murphy	Bedfordshire
12	Newbury Reinforcement (Ipsden to Newbury)	900	36	25.5	2001	X60	FBE	McConnell Dowell	Oxfordshire
13	Huntingdon/Willington	900	36	22.6	2001	X65	FBE	Murphy	Cambs/Beds
14	Maudlin/Indian Queens	900	36	20.0	2001	X60	FBE	Walter Lawrence	Cornwall
15	Birch Heath/Mickle Trafford	900	36	14.3	2001	X60	FBE	AMEC Spie	Cheshire
16	Wormington/Tirley	900	36	27.0	2000	X60	FBE	McNicholas/Aasleff/Freytag	Gloucestershire
17	Newbold Pacey/Honeybourne	900	36	26.5	2000	X60	FBE	McNicholas/Aasleff/Freytag	Worcestershire
18	Bridge Farm/Birch Heath	900	36	21.0	2000	X60	FBE	Fire Johnson Stubbs	Cheshire
19	Carnforth/Nether Kellet	900	36	2.0	2000	X60	FBE	Walter Lawrence	Lancashire
20	Shorne/Farningham	750	30	17.0	2000	X52	FBE	Entrepose	Kent
21	Peterstow/Llanvetherine/Gilwern	600	24	43.0	2001	X60	FBE	NACAP Lawrence JV	Monmouthshire
22	Silk Willough/Stuythorpe	600	24	38.5	2001	X60	FBE	AMEC Utilities	Lincolnshire
23	Horndean/Newells Lane	450	18	14.0	2001	X52	FBE	AMEC Utilities	Hampshire
24	Somerton Farm to Knights Cross Isle of Wight	300	12	8.0	2000	X52	FBE	Walter Lawrence	Isle of Wight

Cost Information supplied to VO by Transco for 24 pipelines

1 Background Notes covering delivery process

2 Intermediate Block Values

3 Land and Associated Cost £ million

4 Steel Line Pipe Costs £ million

5 Design / Construction Costs £ million

6 Inspection Costs £ million

7 Management and Misc. Costs £ million

8 Adjusted Out Turn Cost £ million

9 Final Adjusted Cost / km.

10 Cathodic Protection Costs generally

11 Breif Commentary on each scheme

12 Location / Route Maps

Miller, Chris L

From: Northall, George [George.Northall@ngtgroup.com]
Sent: 03 October 2003 16:14
To: Miller, Chris L
Cc: Perkins, David; Kelley, Tony; Wong, Tom; Colin Parsons (E-mail)
Subject: Newly Constructed Pipelines

Chris,

Thank you for your letter of 29th September and apologies for not responding to your letter of 14th August. I firmly believed I'd e-mailed the reply but now find that I didn't!

I discussed your request to disclose information to UKOPA with David Perkins. We would not be happy for this to happen as you will realise the information is often commercially sensitive. We understand that you have approached some of the contractors who worked for Transco on pipeline construction details. David has left it up to contractors to decide whether they wish to disclose their own commercially sensitive information.

Where someone in UKOPA wants to approach Transco directly then we will deal with this on an ad-hoc basis. My name was given as a contact to that Group but as yet no one has made contact.

Best regards

George

George Northall
Group Tax Manager Employment & Indirect Taxes
National Grid Transco plc
Phone: 0207 004 3488
Fax: 0207 004 3483
Mobile: 07778 356198
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Switchboard 0113 214 0500
Direct Line 0113 214 0508
Fax 0113 214 0599
E-mail chris.l.miller@voa.gsi.gov.uk
Your Reference :
Our Reference : CLM/ Pipes
Please ask for : Chris Miller

Date : 14 August 2003

G E Northall
Group Tax Manager
National Grid Transco
130 Jermyn Street
London
SW1Y 4UR

Dear George

Newly Constructed Pipelines.
Notices Requesting Supply of Information for Non Domestic Rating.

I thank you for your letter of 21 July 2003 with completed form VO 6051 with attached signed spreadsheet.

For your information, I can confirm that a Pipeline Rating Forum has been established to consider valuation matters for the rating revaluation of existing separately assessed pipelines in England and Wales. These valuations are by reference to the Contractors Basis of Valuation, to arrive at the estimated replacement cost of a pipeline, and rely on the collection and analysis of cost evidence from the construction of new pipelines.

A meeting was recently held with representatives of United Kingdom Onshore Pipeline Operators' Association (UKOPA) to open discussions in an attempt to agree a basis for these valuations. Mr Hugh Morris of BPA and K Norman of Gerald Eve Chartered Surveyors represented UKOPA. It was made clear to the meeting that construction cost information currently available related mainly to Transco new pipelines, but this information was confidential and could not be made available to the Forum.

The representatives indicated that they would therefore be approaching Transco to see if they could obtain the information, since Transco was a member of UKOPA, so that they could do their own analysis of the construction cost information.

In the circumstances could I divulge the information on the form VO 6051 and the attached spreadsheet to the Pipeline Rating Forum?

I look forward to hearing from you.

Yours sincerely

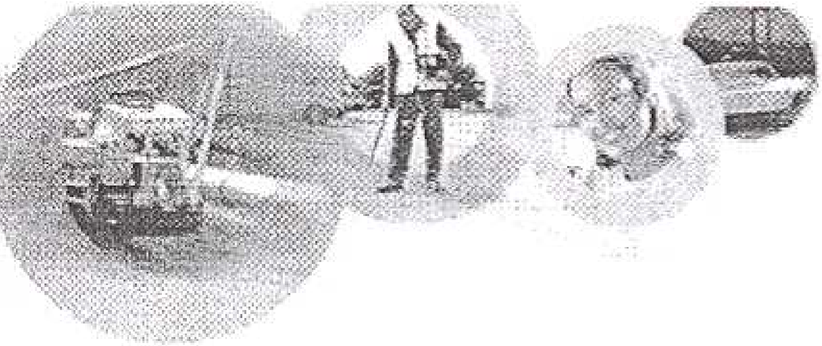
Chris L Miller BSc MRICS, IRRV, ABEng.
Specialist Valuation Unit

Schedule of Properties with Press Release cost information.

Press Releases & Information obtained from the Internet.

VO Valuation of these properties using Revised Valuation Scale

VO Ref.	Pipeline	Diameter inches	Length km	Year Commissioned	Steel Grade	Line Pipe Coating	Contractor	County	Source / Notes	Construction Cost: Cost £million	Construction Cost: VO ERC £million	
1	Cambridge/Matching Green	48	46.0	2002	X80	FBE	Murphy	Cambridgeshire				
2	St Fergus/Aberdeen	48	70.0	2001	X80	FBE	NACAP Lawrence JV	Aberdeenshire				
3	Hatton/Silk Willoughby	48	40.5	2001	X80	FBE	Laing	Lincolnshire				
4	**Hadlow/High Halden**	**48**	**37.0**	**2001**	**X65**	**FBE**	**McAlpine PPS JV**	**Kent**	**Transco web press release £35m including pipe**	**£35.00**	**£34.60**	
5	Easton Grey/Minety	48	15.5	2001	X65	FBE	Entrepose	Wiltshire				
6	Nailsea/St.Georges	48	12.5	2001	X65	FBE	Entrepose	Somerset				
7	**Drointon/Sutton-on-the-Hill**	**48**	**25.5**	**2000**	**X80**	**FBE**	**Murphy**	**Staffs/Derbyshire**	**Murphy web site. Value £16.6m (excludes pipe)**	**£16.60**	**£15.50**	**BH**
8	Betchworth/Rowhook	48	23.0	2000	X65	FBE	Entrepose	Surrey				
9	West Hull (Wawne to Elerton)	41	17.5	2002	X65	FBE	AMEC Spie	Yorkshire				
10	**Mawdesley/Warrington**	**41**	**40.0**	**2001**	**X65**	**FBE**	**McAlpine PPS JV**	**Lancashire**	**Transco web press release £50m including pipe**	**£50.00**	**£34.60**	**BH**
11	Willington/Steppingley	36	22.0	2002	X65	FBE	Murphy	Bedfordshire				
12	Newbury Reinforcement (Ipsden to Newbury)	36	23.5	2001	X60	FBE	McConnell Dowell	Oxfordshire				
13	Huntingdon/Willington	36	22.5	2001	X65	FBE	Murphy	Cambs/Beds				
14	**Maudlin/Indian Queens**	**36**	**20.0**	**2001**	**X60**	**FBE**	**Walter Lawrence**	**Cornwall**	**Lawrence web site £20m**	**£20.00**	**£15.70**	**BH**
15	**Birch Heath/Mickle Trafford**	**36**	**14.5**	**2001**	**X60**	**FBE**	**AMEC Spie**	**Cheshire**	**Transco web press release £12m including pipe**	**£12.00**	**£11.40**	**BH**
16	Warmington/Tirley	36	27.0	2000	X60	FBE	McNicholas/Aasleff/Freytag	Gloucestershire				
17	Newbold Pacey/Honeybourne	36	26.5	2000	X60	FBE	McNicholas/Aasleff/Freytag	Worcestershire				
18	Bridge Farm/Birch Heath	36	21.0	2000	X60	FBE	Eric Johnson Stubbs	Cheshire				
19	Carnforth/Nether Kellet	36	2.0	2000	X60	FBE	Walter Lawrence	Lancashire				
20	Shorne/Farningham	30	17.0	2000	X52	FBE	Entrepose	Kent				
21	**Peterstow/Llanvetherine/Gilwern**	**24**	**42.5**	**2001**	**X60**	**FBE**	**NACAP Lawrence JV**	**Monmothshire**	**Pipeline World December 2002**	**£24.00**	**£22.80**	**BH**
21a	**Gilwern/Halodyrynys**	**24**	**24.3**	**2002**	**X60**	**FBE**	**NACAP Lawrence JV**	**Monmothshire**	**Pipeline World December 2002**	**£20.00**	**£12.90**	**BH**
22	Silk Willough/Staythorpe	24	38.5	2001	X80	FBE	AMEC Utilities	Lincolnshire				
23	Horndean/Newells Lane	18	14.0	2001	X52	FBE	AMEC Utilities	Hampshire				
24	Somerton Farm to Knights Cross Isle of Wight	12	8.0	2000	X52	FBE	Walter Lawrence	Isle of Wight				



Transco

31 Homer Road Solihull West Midlands B91 3LT

V.O.
Ref. 4

press release

Date of release: 14/05/2001

WORK STARTS ON GAS PIPELINE INVESTMENT PROJECT

Construction work has started on Transco's £35 million investment - a new 37km gas pipeline from Hadlow to High Halden.

The route of the 1200mm diameter pipeline has been marked out and careful removal and onsite storage of topsoil has started.

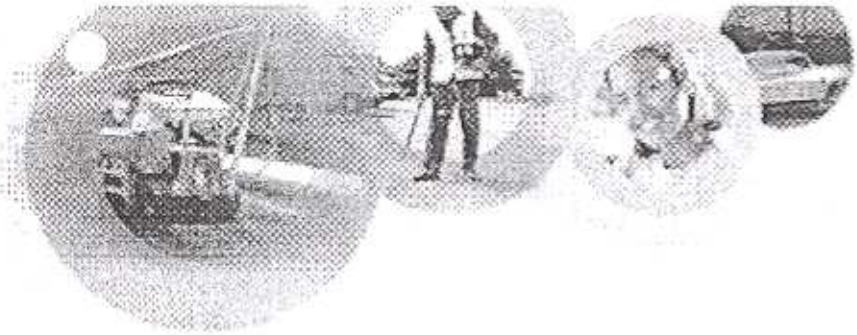
Project manager, Martin Magee said 'This project is part of Transco's £340 million investment programme to increase the gas supply network and meet increased demand for gas. It is one of six projects nationally where over 35km of pipeline is to be laid.'

He added 'throughout the preparatory work for the project Transco has maintained an open dialogue with everyone who may be affected.

'We have been in regular contact with landowners/tenants, held a public exhibition and written to everyone who lives close to the route of the pipeline. The usual consultation process with statutory authorities, including all councils and environmental agencies, has also taken place.'

The pipeline is needed to meet increased demand for gas in the South East.

Issued by Transco Communications on 01306 748596.



V.D.
Ref 4.

Date of release: 19/10/2001

NEW GAS PIPELINE ON SCHEDULE FOR SWITCH ON

Transco's £35m pipeline between Hadlow and High Halden is on target to be turned on and supplying natural gas to homes and businesses in the South East this winter.

During the major construction operation over 3,200 sections of 48" diameter steel pipe have been brought to the site and welded together along the carefully planned 37km route before being buried in the prepared trench to meet the winter deadline.

Before any gas starts to pass through the new pipe it will be thoroughly tested under pressure with water. Massive compressors will be used to dry the inside of the pipe in preparation for commissioning.

But the flow of gas through the pipe does not signal the finish of the work for Transco. All the land disturbed by the construction of this pipeline will be returned to its former glory.

'Transco has a reputation for careful reinstatement', said Project Manager, Martin Magee. 'We backfill the trench as we go to prevent the new pipeline being left exposed in an open trench, but putting back the topsoil and levelling the land needs to be carried out once construction is completed so that heavy plant and machinery isn't driven over the recovering areas.'

With the right weather conditions the team can reinstate up to 1km per day, and have so far completed over a third of the length. But the exceptionally wet winter and spring earlier this year has put the project back by about four weeks.

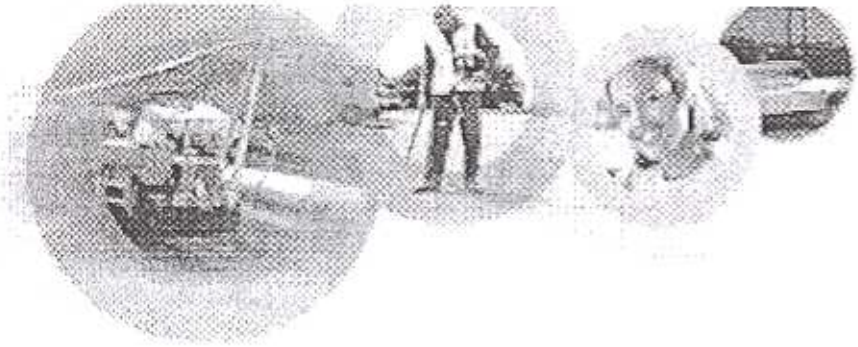
'For the ground to recover fully it is important that the topsoil is put back under the right conditions,' explained Martin. 'We will be doing our best to reinstate as much of the route as possible, but it is likely that our delayed

start will mean some areas cannot be fully reinstated until next spring.'

He continued, 'We will be working closely with landowners to agree a reinstatement timetable but our priority is to ensure we get the land restoration right so that a year later there will be very little, if any, evidence of the construction work that has taken place this summer.'

For further information please contact Transco Communications on 01306 748596.

Transco
31 Homer Road, Solihull, West Midlands B91 3LT



V.O.
Ref. 4.

Date of release: 16/07/2002

GAS PIPELINE RECEIVES FINISHING TOUCH FROM MP

Maidstone and The Weald MP, Ann Widdecombe is helping to restore the land to its original condition, signalling the final completion of Transco's £35 million gas pipeline.

The pipeline, constructed between Hadlow and High Halden during 2001, has been operational over the winter period, bringing gas to the South East to meet the growing demand.

'Constructing this 36km pipeline, 48" in diameter, through some of the finest countryside in England has been a challenging project.' said Transco's Head of Operations for the South of England, Steve Featherstone. 'Transco goes to great lengths to minimise the impact of its work on the environment. We have years of experience and expertise in laying pipelines and pride ourselves on the measures we take to ensure all land is carefully restored.'

He continued, 'I'm delighted that Ann Widdecombe has taken the time to come and see first hand the high standard of reinstatement and careful planting that has been carried out along the length of this pipeline and to put the finishing touch to this project.'

Ann Widdecombe, assisting with the final planting said 'I am so pleased that so much care has been taken to restore the land after so huge a project. It is a remarkable achievement.'

For further information, please contact Christine Riches, Transco Communications on 01306 748596

V.0
Ref. 7.

PROJECT PROFILE

MURPHY

DROINTON to SUTTON-on-the-HILL

Client

BG Transco Plc
Hinckley Op
Brick Kiln Street
Hinckley
Leicestershire LE10 ONA

Tel: 01455-251111
Fax:01455-610192

Contact: Mr Peter Hardy, Project Manager

Value

£16.60m
ECC Conditions of Contract, Option A

Contract Period

Jan 00 to May 01

Description of Works

25km of 1200mm diameter X80 welded steel gas pipeline and two pressure reduction stations, each containing facilities for gas filtration, heating and gas regulation.

The contract also included:

- Detailed design of the pipeline and installations
- Procurement of all permanent materials (excluding line pipe)
- First use in the UK of automatic welding for main line
- River, rail and road crossings by auger and micro tunnelling
- Inspection and Testing
- Extensive environmental constraints

The gas pipeline, which runs north-east to south-west through Derbyshire and Staffordshire, will help to meet the growing demand for gas in the East Midlands.

In addition to the laying of the main pipeline route, works included a new installation adjacent to the existing block valve compound at Drointon and the extension of the existing Sutton on the Hill compound. Both installations now have the facility for gas filtration, metering, heating and regulating. Works also included connection to the existing NTS main feeder no 4 at Drointon and two connections at Sutton on the Hill – one into the 600mm NB East Midlands 'Supergrid' pipeline (Ashleyhay to Alrewas) and one into the 450mm NB (Alrewas to Thane Road) pipeline.

Murphy devised a two-phase strategy to achieve completion of the project within the required timescale:

1) The construction of the pipeline and installation of pig traps at each end of the pipeline. Cold cut and insertion of tee connections to three locations (two at Sutton on the Hill and one at Drointon) and connection to the East Midlands Supergrid at Sutton on the Hill using a temporary bypass. The pipeline was temporarily used as a gas storage facility.

2) Completion of the works at Drointon and Sutton on the Hill AGI's, removal of the temporary bypass at Sutton on the Hill, and the creation of permanent connections of the plant to the points produced in Phase One. The pipeline was to be operational as a gas flow facility.

As part of these two phases, the level of work was extensive both at the AGI locations and also along the length of the pipeline.

Included within the works was:

At the AGIs

- Installation of gas conditioning equipment – Filters, Meter Streams, Gas Preheating, Volumetric regulators, Odorant Plant, CV Measurement and a permanent Pig Trap.

- Supply, installation, testing and commissioning of all distribution switchgear, buildings, services, mains switch, tails and earth bonding at Drointon AGI necessary for package boilers, site lighting, gas control, regulator cabinets, DP cubicles, gas chromotagraph building, odourisation plant, valve actuators and metering.

- Supply, installation and testing of UPS system for essential instrumentation within Drointon AGI. This part of the works was done to provide a minimum of six hours of battery life in the event of any future gas mains failure.

- Complete electrical installation at Sutton on the Hill AGI.

- All civil works including reinstatement and landscaping necessary to prepare the AGI sites for use.

- Corrosion protection system for all new pipeline and AGI equipment.

Along the pipeline length

- There were seventeen road crossings in total, the majority of which were achieved by an approved non-open cut method - trenchless crossing. The A50 new trunk road was thrust bored. It was also used to cross the Nottingham to Uttoxeter railway line, other utilities and features.

- Open cut crossing of water courses and other features, where permission of statutory authority had been obtained – particularly the River Blythe and Sutton Brook.

- The River Dove was crossed using trenchless methods and pipejacking, as was the railway line. Both were complex operations because of the steep embankments either side.

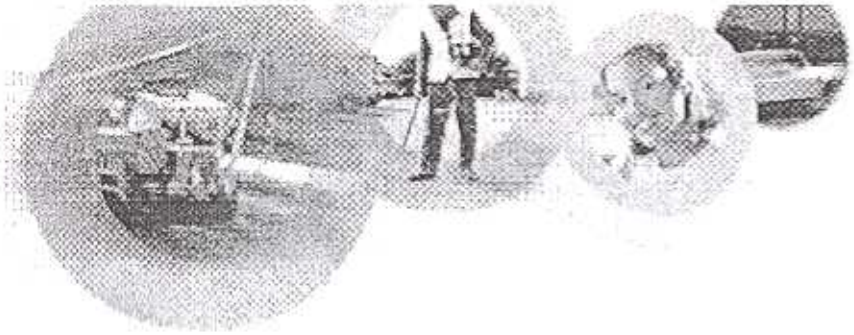
- The pipeline crosses flood plains at locations: Blythe (220m length), Dove (350m length), Sutton Brook (1500m length) which had to be taken into consideration.

- Pre and post construction land drainage installation.

Welding procedures

This was the first UK application of X80, a high grade steel which is well suited to large diameter pipelines and will stand the same pressures as more traditional steels but a thinner gauge. Welding costs can therefore be reduced.

Research and development was carried out prior to work on site to achieve the best welding method, working in conjunction with US based company CRC. Using an automatic technique, Murphy was able to weld 12.5m steel pipe sections at a time, allowing the team to complete more than 60 welds per day which equates to 1km in length per day.



V.O
Ref. 10 & 15

Date of release: 09/01/2002

PIPELINE CONSTRUCTION DOUBLE FROM TRANSCO

National gas transporter Transco successfully completed a pipeline construction double in the run-up to Christmas.

More than 54km of pipeline were laid and commissioned in the two separate projects, which together cost in the region of £62m and are part of a £290m national high pressure pipeline construction programme designed to meet the growing UK demand for gas. Both pipelines were fully commissioned and operational in time for the Christmas celebrations.

The 40km Mawdesley to Warrington gas pipeline project has taken two years to complete, and provided Transco and its contractors with some major engineering challenges - the pipeline route crosses two rivers, two canals, five railway lines and 39 roads including the M6 and the M62. Directional drilling techniques were used to lay the pipeline with the minimum disruption.

More than 300 jobs were created during the £50m project and work will continue this year on a programme of environmental reinstatement for the pipeline route.

The second project, the £12m, 14.5km Birch Heath to Mickle Trafford pipeline has taken just one year to complete. The route crossed large areas of open countryside, the River Gowy, the A51 and the railway line, again employing directional drilling techniques.

Special efforts were made to protect local wildlife, including great crested newts, badgers and barn owls, and when an Iron Age roundhouse settlement was discovered during construction, archaeologists were brought in to excavate and document the find.

Although the pipeline has now been commissioned, work on restoring the landscape along its route will continue until the summer.

(ends)

Media inquiries
Gill Twyman - 0121 623 2223
Graham Frankland - 0121 623 2053

· Photos are available on request

Transco is the national gas pipeline operator, and runs the gas emergency service (Smell gas? Call free 0800 111 999).

Transco
31 Holder Road, Solihull, West Midlands B91 2LT

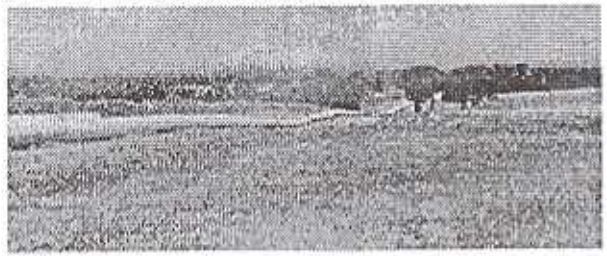
BPA ENGINEERING

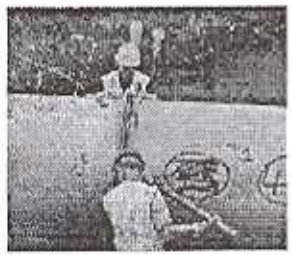
The Design of Transco's Mawdesley to Warrington Gas Pipeline

It was BPA's reputation for provision of high quality engineering services, together with McAlpine-PPS Pipeline Systems JV expertise in the construction of particularly 'difficult' pipeline projects which prompted Transco to award the turnkey contract to the McA-PPS/BPA team. The project was to "reinforce" a section of the National Transmission System (NTS) comprising 40km of 1066mm (42") pipeline operating at 75barg laid between Mawdesley AGI and Warrington compressor station in the UK.

BPA have been responsible for all aspects of the detailed geotechnical, civil, mechanical, electrical, control and cathodic protection design for the pipeline and AGI facilities as sub-contracted consultant to McAlpine - PPS Pipeline Systems JV for a design and construct NEC based contract.

In all designs required four audits along with peer reviews and IGE/GL/S design reviews with BPA taking responsibility as Project Designer.





Where experience counts

The project required complex project planning taking into account the ecological, environmental and archaeological impact caused by the work.

The project involved the design of numerous motorway, road, rail, river and canal crossings and 1200 lorry movements were required for the delivery of line pipe alone.

The most significant and unique aspect of the project was the route, which ran across former open cast, shallow and deep pit mine workings with unstable ground conditions. Some 3600 boreholes were sunk over 6 months at intervals of 100m and were grout filled to stabilise the surrounding area.

Further hazards included the groundwater from the mine workings which, with its high temperature and low pH made excellent battery acid!

The project was, due to its complexity, carried out over two construction seasons.

BPA OVERSEAS

BPA Delivering New facilities for the MOD on Ascension Island

The RAF operated Petroleum Supply Depot at Catherine Point on the Ascension Island is the site of one of BPA's overseas projects. The depot is supplied by offshore tanker via a floating hose system and provides both ground and aviation fuels to RAF and USAF airfield facilities.

BPA were awarded the contract to manage the upgrade of these facilities including **outline design, construction contractor selection and management of the project through to handover.**

The project consists of:

- The design and construction of two new fully bunded 6,000 M3 aviation fuel tanks
- The demolition of a number of existing tanks and facilities
- Upgrading of the floating hose supply system
- The provision of a new fire fighting system consisting of a fire hydrant, tanks and pumps
- The provision of drainage, bunding, slops and vapour recovery facilities to meet current legislation.
- Commissioning, start-up and handover of operational facilities

The new tanks, which will have fixed roofs and double bottoms, will provide

onshore storage that will replace an offshore tanker which has been at the island for a number of years. Onshore stocks will be replenished by visiting tankers in the future.

The project has a number of challenges including the requirement to import all plant and materials and the fact that the island does not have a deep water quay facility. Even sand and aggregate have to be shipped.

The construction phase for the work is from May 2002 through to the end of the year.

Pipeline Integrity Management

BPA is busy on a range of assignments where the life expectancy of existing assets is being reviewed and where possible extended, or where changes of duty are being considered. Pipeline Integrity Management and Fitness for Purpose are two areas where BPA's combined engineering consultancy and pipeline operations management experience provide key benefits to clients.

Recent work for **Bulgargaz and Kuwait Oil** involved assessing the 'on line inspection' results of hundreds of kilometres of pipelines and identifying from the features reported those which required closer scrutiny and possible immediate attention.

The initial assessment is in line with **ASME B31 G**, typically followed by **RSTRENG** analysis. Features failing the assessment are prioritised and a plan to locate, check and repair as appropriate is put in place soon after the assessment. BPA also advise the client which of the available repair techniques will best suit the specific pipeline defect, having had long experience of implementing the various systems and techniques at one time or another.

Oil Tanking Singapore and Shell Eastern Petroleum contracted BPA to provide detailed **hydraulic analysis** of multiproduct intersite and sub sea pipelines. BPA's engineers carried out the work using specialist hydraulic modelling and analysis software. The analysis provides the client with the operating conditions under which the pipelines can be operated without additional protection from potential catastrophic surge effects. In some cases the analysis also confirmed the requirement for either modified operating parameters (ascertained to optimise pipeline control) or the sizing of a suitable economic surge alleviation device.

BPA NEWS EXTRA

Reaping the awards

HSE: BPA has just been ranked amongst the top 5 companies in the oil and gas sector for a Royal Society for the Prevention of Accidents (RoSPA) 2001 Oil and Gas Industry award. BPA achieved a 'Highly Commended' for Occupational Health and Safety performance applied in the sector. This is particularly gratifying as we are one of the smallest operators and it is our first year of entering.

Environmental: BPA's Environmental Management System has been accredited to the ISO 14001 status. This is a significant achievement and covers both operational and engineering parts of the business.

Quality: BPA has maintained accreditation of its Quality Management System to ISO 9001 following the recent assessment by BSI. Work is currently underway to progress this to ISO 9001:2000 status.

HSEQ in BPA underlines the way we go about our business. We have cross-functional committees working to generate fresh ideas. We have 16 trained auditors carrying out cross-departmental auditing and our quarterly Award for Safety initiative encourages any employee to put forward suggestions to their local committee.

All of this leads to a healthy and lively HSEQ environment.

BPA People in Action

John Stevens made a presentation to a group of worldwide pipeline operators at the CONCAWE seminar held in Brussels in April.

John talked about a major pipeline SCADA replacement project being undertaken by BPA where the strategy is more evolutionary when compared with the more usual complete replacement approach. John explained the reasoning behind the decision to use this strategy together with the driving forces behind the project and the challenges it offers. The talk attracted significant interest both from the media companies who have struggled in the past with these projects and for those who are in the process of planning such a project in the future.

John Stevens

John Stevens is a Chartered Control and Instrumentation Engineer. He joined BPA as a Graduate Engineer in 1989 and has undertaken a number of SCADA and Control and Instrumentation projects for BPA on behalf of a range of clients.

PIPELINES 2002

BPA will be exhibiting at the Pipelines 2002 exhibition again this year. It takes place at the NEC from 11th to 13th June and we hope to see as many of you there as possible to answer your questions and exchange ideas on challenges and industry issues. There will be a **Prize Draw** opportunity, by way of a thank you, for those who visit our stand and leave their business card. We will hold the draw on the last day and the lucky winner will receive a case of decent wine.

We look forward to seeing you there.

We have a range of service data and project experience sheets available, which address BPA's services and successes in more detail. Also available is a separate brochure detailing BPA's pipeline management activities in the UK. For further information, or simply an informal chat on how BPA might add value to your project, please call Paul Godden or John Ellen on:

Tel: + 44 (0) 1442 242200

Fax: + 44 (0) 1442 214077

or e-mail us on: business@bpa.co.uk

Further information about BPA's activities is also available on our website: www.bpa.co.uk

Office Move

BPA moved offices on 26th April. Our new office address is 5-7 Alexandra Road, Hemel Hempstead, Herts HP2 5BS. A map can be found on our web-site (www.bpa.co.uk). Our telephone and fax contact numbers remain unchanged.

BPA

Solutions for Pipelines

BPA PIPEVINE

Issue 1. Summer 2002

KEEPING YOU IN TOUCH WITH WHAT'S HAPPENING AT BPA

Manvalesley to Warrington Gas Pipeline

Ascension Island Petroleum Supply Depot

Pipeline Integrity Management

Moving on and up!

Welcome to Pipevine, our company newsletter aimed at keeping customers, friends and employees around the world updated on what's happening at BPA.

Satisfied customers and repeat business across all areas of our service namely, planning, design, construction, operations and asset management have meant another highly successful year for us.

New business development across a range of sectors has also added to our thriving business with gas, aviation fuels and pipeline integrity markets showing the greatest growth.

This increasing business success has also been reflected in the growth of our technical team, with new staff recruitment continuing across all disciplines, from Graduate level upwards.

So the need for new premises

BPA remains based in Hemel Hempstead but has now moved to our own newly refurbished office building in the Old Town area, with facilities that better reflect the needs of modern business (not least the ability to provide on-site parking for visitors!)

Our new Hemel Hempstead offices

Best Practice in HSEQ

Given the increasing emphasis in the industry placed on the professional management of Health & Safety, Environmental and Quality matters, BPA's progress in these areas continues apace. BPA has been "Highly Commended" by RoSPA for Health & Safety management in the Oil & Gas sector for our 2001 performance. Our Environmental management System has been accredited to ISO14001, and we again retained our accreditation to ISO9001. All keystones which underpin the way we do business at BPA.

Meeting up

This years Pipelines 2002 exhibition at the NEC will give both customers and prospects alike the opportunity to meet us. We will be happy to welcome you to our stand to share information on challenges encountered and future opportunities.

We look forward to seeing you there.

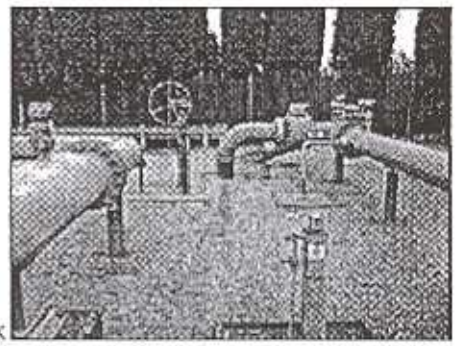
Peter Davis
Director & General Manager

OIL · GAS · POWER · TRANSPORT · INDUSTRY OIL · GAS · POWER · TRANSPORT · INDUSTRY

Project: Maudlin to Indian Queens 900mm NB Pipeline

V0.
Ref. 14

Location: South West England
Client: Lawrence Construction
Contract values: £20 million
Start date: Dec 2000
Completion date: Oct 2001
Scope: Detailed design and specialist no-dig crossing details



Overview:
The scheme was required to provide extra supply capacity to reinforce the Transco Southwest Local Transmission System (LTS) as part of ongoing network development.

In 1999, Haswell undertook the Conceptual Design of this pipeline and connections for Transco and were subsequently appointed as detailed designer by Lawrence, the main contractor, in 2001.

The 20km long, 900mm diameter pipeline design, had to accommodate all of the usual special crossing problems, as well as modifications and sites extensions to enable tie- ins.

In addition, there were major problems with tin mines along the route and special installation methods were designed to use along this section. Novel methods for detection of potential problems were used, and proposals for bridging Stopes and Adits affecting the route were provided as part of the design.

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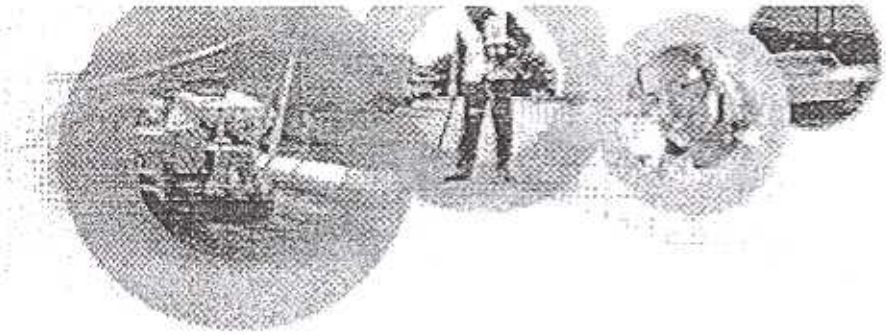

V.O.
Ref. 10 & 15

Date of release: 09/01/2002

PIPELINE CONSTRUCTION DOUBLE FROM TRANSCO

National gas transporter Transco successfully completed a pipeline construction double in the run-up to Christmas.

More than 54km of pipeline were laid and commissioned in the two separate projects, which together cost in the region of £62m and are part of a £290m national high pressure pipeline construction programme designed to meet the growing UK demand for gas. Both pipelines were fully commissioned and operational in time for the Christmas celebrations.

The 40km Mawdesley to Warrington gas pipeline project has taken two years to complete, and provided Transco and its contractors with some major engineering challenges - the pipeline route crosses two rivers, two canals, five railway lines and 39 roads including the M6 and the M62. Directional drilling techniques were used to lay the pipeline with the minimum disruption.

More than 300 jobs were created during the £50m project and work will continue this year on a programme of environmental reinstatement for the pipeline route.

The second project, the £12m, 14.5km Birch Heath to Mickle Trafford pipeline has taken just one year to complete. The route crossed large areas of open countryside, the River Gowy, the A51 and the railway line, again employing directional drilling techniques.

Special efforts were made to protect local wildlife, including great crested newts, badgers and barn owls, and when an Iron Age roundhouse settlement was discovered during construction, archaeologists were brought in to excavate and document the find.

Although the pipeline has now been commissioned, work on restoring the landscape along its route will continue until the summer.

(ends)

Media inquiries
Gill Twyman - 0121 623 2223
Graham Frankland - 0121 623 2053

- Photos are available on request

Transco is the national gas pipeline operator, and runs the gas emergency service (Smell gas? Call free 0800 111 999).

Transco
31 Homer Road, Solihull, West Midlands B91 3LT

Ref: LW31

Monday, November 18, 2002

V.O. Ref 21a

NACAP/LAWRENCE COMPLETE FIRST PHASE OF GILWERN TO HAFODYRYNYS PIPELINE

Nacap/Lawrence has completed the first phase of a 24km, 600mm diameter gas pipeline from Gilwern to Hafodyrynys in South Wales worth £20m. The award follows the £24m completion of Nacap/Lawrence joint venture of the 42.5km Peterstow to Gilwern section last year.

The 5km section through a SSSI (Site of Special Scientific Interest) has already been reinstated using specialist seeds to ensure that the new grass blends seamlessly within the surroundings. Special methods of turf removal and topsoil stripping and replacement have been employed so that disruption to the area is minimised. A large quantity of unexploded ordnance was discovered during the work.

The contract involves the construction of a high pressure welded steel pipeline with connections to AGIs (Above Ground Installations) at each end requiring hot tap connections and gas control facilities. The scheme includes the combined crossing of the River Clydach and A465 (Heads of the Valley) road and a further section of roadworks at Brynmawr.

The terrain is extremely challenging encompassing extensive ravines and steep hillsides. The very steep gradients, up to 28°, require winch and anchor systems to be used for all machinery to ensure safe working at all times. Protection may also be required in the event of very severe weather so a mountain refuge is to be provided. During the winter months, preparatory work will be undertaken on the slopes in readiness for pipe laying to restart in April 2003, and routes will also be cut through woodland.

For further press information please contact Karen Stretch at Publicity Matters, 1 Beechcroft Road, Clevedon, Bristol, BS21 7NR. (01275) 342734 email karen@publicitymatters.com

the container is usually segregated so that, for example, there are separate compartments for the transformer, converter, auxiliary equipment, and a control room for use by the operator. Not only does this keep the low-voltage and high-voltage safely separated, but it also assists with maintaining the required temperatures for the various compartments.

VSDs always generate heat, so an important part of each project is the cooling. In some applications, such as in the desert, there will be no external water supply, so it is necessary to use a proprietary closed-loop air conditioning system. Elsewhere, it may be better to use closed-loop cooling with de-ionized water, and a water-water heat exchanger that uses an external 'raw' water supply. Furthermore, some applications will only require cooling, but others may need a combination of cooling and heating in order to provide satisfactory conditions all year round. Whatever the solution employed, the result is that the drive components can operate in what, for them, are ideal conditions, regardless of the environment outside the container.

But the advantages of containerization do not end there. Because all of the components are pre-cabled, they can also be tested together prior to the drive leaving the factory. This saves time on-site and helps to ensure that the drive will work 'right first time'. Furthermore, the fact that much of the cabling is already completed means that there is less to do on site, so saving valuable time. All of this is particularly relevant to retrofit applications where there may be only a limited time for installation and commissioning – and huge cost penalties can arise if the planned shutdown has to be extended. Provided that suitable access controls are fitted, the complete container can be extremely well protected from intruders, and access to high voltage areas can be restricted to protect personnel who may have legitimate reasons for working on the container.

As has already been mentioned, using standard ISO dimensions means that transportation is simple and less costly than it might be for non-standard-shaped or -sized equipment. On the other hand, if the standard dimensions need to be modified – as happened when drives needed to be transported through tunnels on the trans-Siberian railway – Siemens can simply take account of this at the design stage and produce a suitably-adapted container.

Often with retrofit applications there is no existing switchroom in which to install the drive. Siemens has found that to supply a container is far cheaper than to construct a brick/concrete structure of a similar size, which leads to a further cost saving for the customer. This was particularly beneficial for a 690-V, 500-kW converter and motor supplied for a multi-phase pump recently being installed in a desert location. Since this was a remote pilot site there was no existing infrastructure and constructing a new switchroom was out of the question. Containerization was therefore an elegant solution to what could have been a difficult installation.

Because of the way the containerization concept incorporates climate control for the drives, there is now virtually nowhere on the planet that a drive could not be installed. The only proviso is that there must be access so that the container can be delivered, which implies that suitable roads and craneage access must be available. But then again, if 'the sky's the limit' for the transportation budget, there is always the helicopter option...●

Pipeliners in action

Ducts for anchorage cables under ancient Turkish tomb

KAYSERI, known as Caesarea in Roman times, one of the oldest cities in Anatolia, has a 6000-year history and because of its geographical position, it always has kept its importance. It is located on the so-called Silk Way, and situated at the foot of an extinct vulcano, Mt Ercyes (3.916m), which these days has become a popular ski resort. The inner city, dominated by the Byzantine fortress, is full of historic buildings, minarets and mosques, Turkish baths, fountains, tombs, and inns. The presence of all these historical monuments, throughout the city, makes the planning of traffic throughways and infra-structural works difficult.

The Municipality of Kayseri has planned a junction-free throughway through the city centre, passing very close to the walls of the fortress. This by-pass will run below the level of the local streets with bridges connecting the side streets at the opposite sides of the new road. In the middle of the planned route was an ancient Tomb, the Alaca Kumbet, dated from the year 1208. According to the plans, the lanes of the new road had to pass left and right of the foundation of this monument. In order to reinforce the foundation, before the excavation works started, a series of 11-m deep boreholes was made surrounding the tomb, and concrete was poured in, to create concrete piles.

Anchoring, to connect the concrete piles at opposite sides, was to be made at two levels, by means of steel cables, first at 3.5m and later at 5.5m deep, as the excavation progressed. Instead of using a special drill rig for anchoring bolts, the main contractor contracted **TT-Insaat** to install 60-mm PE pipes as ducts for the tension cables. TT-Insaat is the first contractor in Turkey specializing in trenchless installation of pipes and cables, and the project was performed in co-operation with **Hidrotek**, the **Tracto-Technik** distributor in Turkey.

22 bores had to be made with lengths ranging between 12 and 15m, and it was decided to use a *Grundomat 75* for this job. The difficulty was to find a method of aiming the machine on the target, which was to be the space between two concrete piles at the opposite side. The concrete had been poured directly in the soil, without casing, and therefore the piles were very rough. Because of the depth of the excavation and the location of the building itself, a special method of aiming the mole in the proper direction had to be found: by means of accurate measurement and sighting, the direction of the target point was transferred to the rear side of the machine, after which a *Grundoscope* was used for steering, directed at the rear of the machine instead of at the front.

After the aiming method was established, the job was performed successfully, although the machine was sometimes slowed down considerably because of stone enclosures under the tomb. From the pattern of these obstacles, it was concluded that there was probably the circular wall of an old well or other foundation under the tomb. However, the power of the *Grundomat* was able to overcome all these obstacles; 18 out of 22 bores were on target, while in the other four cases the machine had to be assisted by widening the opening between the concrete piles by means of a jackhammer.●

VD Ref 21a.

First phase of major Welsh line completed

NACAP/LAWRENCE has completed the first phase of a 24.3-km, 24-in diameter gas pipeline from Gilwern to Hafodyrynys in South Wales. The 5-km section through a SSSI (site of special scientific interest) has already been reinstated using specialist seeds to ensure that the new grass blends seamlessly within the surroundings. Special methods of turf removal and topsoil stripping and replacement were employed so that disruption to the area was mimimized. A large quantity of unexploded ordnance was also discovered during the work.

The £20-million contract involves the

construction of a high-pressure welded-steel pipeline with connections to AGIs (above-ground installations) at each end, requiring hot-tap connections and gas-control facilities. The scheme includes the combined crossing of the River Clydach and A465 (Heads of the Valley) road and a further section of roadworks at Brynmawr.

The terrain is extremely challenging, encompassing extensive ravines and steep hillsides. The very steep gradients, up to 28°, will require winch and anchor systems to be used for all machinery to ensure safe working at all times. Protection may also be required in the event of very severe weather so a mountain refuge is to be provided. During the winter months preparatory work will be undertaken on the slopes in readiness for pipelaying to restart in April 2003, and routes will also be cut through woodland.

The award followed the £24-million completion by the joint venture of the 42.5-km, 24-in. Peterstow to Gilwern section last year.●

New products

Quick, low-cost, safe closures

A NEW range of closures has been introduced by **GD Engineering** of Worksop. Claimed to be inherently safe, the low-cost *Rotalock* closures are intended for quick and frequent access to smaller-diameter and lower-pressure vessels. Typical applications are said to include filters, manways, meter provers, scraper traps, blowdowns, strainers, separators, and waste disposal vessels.

The *Rotalock*'s pressure-warning screw (PWS) is a key feature. It has an integral pin that penetrates through both locking elements in the hub and cap. When the screw is unscrewed, it warns the operator of internal vessel pressure before the cap is rotated, and complete withdrawal of the PWS also removes the locking pin so that the cap can be rotated and removed in total safety. The PWS does not, however, function as a blowdown valve.

The closure hub is of SA350-LF2 forged carbon steel and no special field-welding operations are needed. Its standard wall thickness will suit extra strong pipe but the ID may be bored to match thinner sections. Heavier-wall hubs are available. Located in the cap to prevent operational damage, the fully-moulded lip seal is made in nitrile (NBR) and fluro-elastomer material (*Viton*). The design prevents the metal-to-metal binding often experienced when using 'O' rings in quick-opening threaded closures.●

New pipe clamps

A COST-EFFECTIVE range of pipe clamps for both small and large applications has been developed by cable and pipe fixings designer and manufacturer, **Ellis Patents**. The *Apache* range of pipe clamps, which incorporates pipe-hanger clamps and framing-channel clamps, is claimed to be cost-effective because they are easier to fit, enabling jobs to be completed more quickly so reducing time on site. With a robust design manufactured from tough black polyamide, the clamps offer an alterative to traditional metal clamps, and claim greater flexibility. They are designed to fit any pipe, have 16 clamps in each range, and provide very rapid installation.

The pipe-hanger clamps have dual bossing, while the framing channel clamps use a simple twist-fit mechanism. The units are designed to clamps no loose components, a captive overstrap which secures the pipe, good chemical resistance, and a continuous safe working temperature of up to 70°C.●

4-in high performance MFL ILI tools

ONE OF Europe's market leaders in small-diameter magnetic-flux leakage (MFL) in-line inspection (ILI) tools, **3P Services** of Lingen, Germany, has developed a new 4-in MFL tool capable of negotiating standard 1.5D bends and suitable for Schedule 40 as well as Schedule 80 linepipe.

3P's existing 4-in tools, originally designed for flowline inspection of lines with a bend radius of 5D, have been successful in the inspection of many oil- and gasfield lines. For the new 4-in tool, the micro-electronics system of the company's existing 3-in tool is used for data storage, and a newly-engineered magnetization and sensor unit has been fitted. This enables negotiation of 1.5D elbows, and has been successfully trialled in test loops at the company's premises. Contracts have been awarded already to run the new tool in pipelines with different media and standard 1.5D radius bends.

3P Services, which initially had only small-diameter in-line inspection tools, is rapidly developing a range of innovative tools for various applications. Apart from the mono-directional high-resolution MFL tools, the recently-developed bi-directional MFL ILI tools are now available from 3-in up to 28-in, and have proven successfully in operations.

The company's design philosophy is based on standardized modules to adapt to specific pipeline requirements, so that the tools can be tailored and built to accommodate every individual pipeline, even so-called 'un-piggable' lines. All data is downloaded on-site with new software systems and a quick first-data assessment is also carried out on-site. For more information, see www.3p-services.com.●

Large diameter *ProFuse* pipe launched by Uponor

FOLLOWING A successful launch to the gas industry of its large-diameter *ProFuse* peelable-skin PE pipe, **Uponor** has launched blue *ProFuse* in larger diameters for the water industry (see *picture below*). Orders have already been placed for the new diameters of 630mm and 500mm, by **Severn Trent Water** and **Welsh Water**, respectively, and Uponor says the new sizes are creating a lot of interest, particularly for areas presenting unique engineering challenges, and for projects where traffic flow must be maintained during works.

ProFuse is Uponor's award-winning PE 100 pipe, capable of operating at up to 16bar SDR 11 pressure at 500mm diameter. It has been designed to offer the installer the advantages of secure pipe protection both before and during installation, and the peelable outer skin is intended to ensure a perfect surface for electrofusion jointing and tapping tees.

As the manufacturer has already shown in the gas industry, good-quality electrofusion joints, improving both the performance and time-savings for electrofusion fittings, all contribute towards protecting initial asset value. Jointing times at diameters of 500mm are said to be reduced by half using the *ProFuse* method.●

Uponor's ProFuse peelable-skin PE pipe.

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The company's design philosophy is based on standardized modules to adapt to specific pipeline requirements, so that the tools can be tailored and built to accommodate every individual pipeline, even so-called 'un-piggable' lines. All data is downloaded on-site with new software systems and a quick first-data assessment is also carried out on-site. For more information, see www.3p-services.com.●

Large diameter *ProFuse* pipe launched by Uponor

FOLLOWING A successful launch to the gas industry of its large-diameter *ProFuse* peelable-skin PE pipe, **Uponor** has launched blue *ProFuse* in larger diameters for the water industry (see *picture below*). Orders have already been placed for the new diameters of 630mm and 500mm, by **Severn Trent Water** and **Welsh Water**, respectively, and Uponor says the new sizes are creating a lot of interest, particularly for areas presenting unique engineering challenges, and for projects where traffic flow must be maintained during works.

ProFuse is Uponor's award-winning PE 100 pipe, capable of operating at up to 16bar SDR 11 pressure at 500mm diameter. It has been designed to offer the installer the advantages of secure pipe protection both before and during installation, and the peelable outer skin is intended to ensure a perfect surface for electrofusion jointing and tapping tees.

As the manufacturer has already shown in the gas industry, good-quality electrofusion joints, improving both the performance and time-savings for electrofusion fittings, all contribute towards protecting initial asset value. Jointing times at diameters of 500mm are said to be reduced by half using the *ProFuse* method.●

Uponor's ProFuse peelable-skin PE pipe.

REF : 4 OCCUPIER : LIST RV £ RV 1730401 WITHOUT PREJUDICE

ADDRESS : Hadlow / High Halden, Kent.

Y MAH #DIV/0! % 2000RV

Prod	Age	WT	SPEC	S W	A B	Diam	£/M Pipe	Coat ext	Coat int	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Easement	Total Cost	No of Pipes	Length	E.R.C 34808023	Age All	Oth All	A.R.C. 34808023	R.V. 1730401	Remarks
	2001	19.1	X65	W	B	48	253.23	47.50	19.16	0.00	22.00	3.00	410.11	151.00	20.0%	564.11	1	0.0%	564.11	23.00	929.01	1	37000	34373269	0.0%		34373269	1718663	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									234755	1	0.0%	234755		234755	1		234755	0%		234755	11738	
																			AFAs		0	0		0	0%		0	0	
																			BVS		283000	0		0	0%		0	0	
																	2005 Basic Easement			23.00				----------			----------	----------	
																	1995 Basic Easement			10.00				34808023			34808023	1730401	

Crossings	No	Amount	Units	Unit Cost	ERC
River	1	.	M	2462	73865
Rail	1		Rails	17095	34190
Canal			M	27382	0
Motorway				46288	0
Dual Carriageway	1			26450	26450
'A' Roads	3			24070	72209
'B' Roads	2			1230	2460
Minor Roads	26			984	25582
Other				0 2000 list	0
					======
Total per pipe					234755

AFA 1995
BVS 1995
Total Length 37000

NOTES

Prod – Product (b – brine, c – chemical, w – water)
WT – Wall thickness
Spec – Grade/Specification
S – Seamless
W – Welded
A – Above ground
B – Below Ground
Diam – Diameter in inches
£/M Pipe – Bare pipe cost

Coat – Coated (internally or externally)
Ins – insulation
Legals – Legal costs
CP – Cathodic Protection
Basic Const – Basic construction cost
D & A – Design & Administration cost
"OTH" or "MAH" – Major Accident Hazard or otherwise
ERC – Estimated Replacement Cost
ARC – Adjusted Replacement Cost
RV – Rateable Value
RE – Rateable equipment associated with pipeline
BVS – Block Valve Stations

REF : 7 OCCUPIER : LIST RV £ RV 776532 WITHOUT PREJUDICE

ADDRESS : Drointon / Sutton-on-the-Hill.

Prod	Age	WT	SPEC	S W	A B	Diam	£/M Pipe	Coat ext	Coat Int	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Ease ment	Total Cost	No of Pipes	Length	E.R.C	Age All	Oth All	A.R.C.	R.V.	Remarks
									Y						MAH						#DIV/0!	%	2000RV	15530633			15530633	776532	
	2000	19.1	X80	W	BH	48	0.00	0.00	0.00	0.00	22.00	3.00	455.68	96.14	20.0%	554.81	1	0.0%	554.81	23.00	599.81	1	25500	15295277	0.0%		15295277	784764	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									235355	1	0.0%	235355		235355	1		235355	0%		235355	11768	
																			AF As		0	0		0	0%		0	0	
																			BVS		283000	0		0	0%		0	0	
																	2005 Basic Easement			23.00				----------			----------	----------	
																	1995 Basic Easement			10.00				15530633			15530633	776532	

Crossings	No	Amount	Units	Unit Cost	ERC
River	2		M	2462	147729
Rail			Rails	17095	0
Canal			M	27352	0
Motorway				45208	0
Dual Carriageway	1			26450	26450
'A' Roads	2			24070	48139
'B' Roads	1			1230	1230
Minor Roads	12			984	11807
Other				0 2000 list	0
					======
Total per pipe					235355

AFA 1995
BVS 1995
Total Length 25500

NOTES

Prod – Product (b – brine, c – chemical, w – water)
WT – Wall thickness
Spec – Grade/Specification
S – Seamless
W – Welded
A – Above ground
B – Below Ground
Diam – Diameter in inches
£/M Pipe – Bare pipe cost

Coat – Coated (internally or externally)
Ins – Insulation
Legals – Legal costs
CP – Cathodic Protection
Basic Const – Basic construction cost
D & A – Design & Administration cost
"OTH" or "MAH" – Major Accident Hazard or otherwise
ERC – Estimated Replacement Cost
ARC – Adjusted Replacement Cost
RV – Rateable Value
RE – Rateable equipment associated with pipeline
BVS – Block Valve Stations

REF : 10 OCCUPIER : LIST RV 0 RV 1740194 WITHOUT PREJUDICE

ADDRESS : Mawdesley / Warrington.

Y MAH #DIV/0! % 2000RV

Prod	Age	WT	SPEC	S W	A B	Diam	S/M Pipe	Coat ext	Coat int	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Easement	Total Cost	No of Pipes	Length	E.R.C 34803884	Age All	Oth All	A.R.C. 34803884	R.V. 1740194	Remarks
	2001	17.5	X65	W	BH	11	193.05	38.60	16.35	0.00	22.00	3.00	421.42	159.38	20.0%	562.50	1	0.0%	563.50	23.00	851.51	1	40000	34300217	0.0%		34300217	1715011	
		0.0					0.00	0.00		0.00	0.00	3.00	3.00	0.30	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	3.00	3.00	0.30	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	3.00	3.00	0.30	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	3.00	3.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	3.00	3.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									503667	1	0.0%	503667		503667	1		503667	0%		503667	25183	
																			AFAs		0	5		0	0%		0	0	
																			BVS		229000	5		0	0%		0	0	
																	2006 Basic Easement			23.00				--------			--------	--------	
																	1995 Basic Easement			10.00				34803884			34803884	1740194	

Crossings	No	Amount	Units	Unit Cost		ERC
River	1		M	2462		73865
Rail	4		Rails	17095		136758
Canal	1		M	27352		27352
Motorway	2			46288		92576
Dual Carriageway	1			26450		26450
'A' Roads	5			24070		120348
'B' Roads	7			1230		8609
Minor Roads	18			984		17711
Other				0	2000 list	0
						======
	Total per pipe					503667

AFA 1995
BVS 1995
Total Length 40000

NOTES

Prod – Product (b – brine, c = chemical, w = water)
WT – Wall thickness
Spec – Grade/Specification
S = Seamless
W – Welded
A = Above ground
B = Below Ground
Diam = Diameter in inches
S/M Pipe = Bare pipe cost

Coat = Coated (internally or externally)
Ins – Insulation
Legals = Legal costs
CP – Cathodic Protection
Basic Const = Basic construction cost
D & A – Design & Administration cost
"OTH" or "MAH" = Major Accident Hazard or otherwise
ERC – Estimated Replacement Cost
ARC = Adjusted Replacement Cost
RV – Rateable Value
RF – Rateable equipment associated with pipeline
BVS = Block Valve Stations

REF : 14 OCCUPIER : LIST RV £ RV 786029 WITHOUT PREJUDICE

ADDRESS : Maudlin / Indian Queens, Cornwall.

									Y						MAH						#DIV/0!	%	2000RV						
Prod	Age	WT	SPEC	S W	A B	Diam	£/M Pipe	Coat ext	Coat Int	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Easement	Total Cost	No of Pipes	Length	E.R.C 15720583	Age All	Oth All	A.R.C. 15720583	R.V. 786029	Remarks
	2001	17.5	X60	W	BH	36	188.34	38.62	14.36	0.00	22.00	3.00	390.38	129.34	20.0%	519.72	1	0.0%	519.72	23.00	781.04	1	20000	15820821	0.0%		15820821	781041	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									99762	1	0.0%	99762		99762	1		99762	0%		99762	4988	
																			AFAs		0	0		0	0%		0	0	
																			BVS		229000	0		0	0%		0	0	
																	2005 Basic Easement			23.00				----------			----------	----------	
																	1995 Basic Easement			10.00				15720583			15720583	786029	

Crossings	No	Amount	Units	Unit Cost		ERC
River			M	1850		0
Rail	2*		Rails	12849		51396
Canal			M	20559		0
Motorway				32534		0
Dual Carriageway				19639		0
'A' Roads	2			18092		36184
'B' Roads	1			1032		1032
Minor Roads	17			656		11151
Other				0	2000 list	0
						=======
Total per pipe						99762

AFA 1995	
BVS 1995	
Total Length	20000

NOTES

Prod – Product (b – brine, c – chemical, w – water)
WT – Wall thickness
Spec – Grade/Specification
S – Seamless
W – Welded
A – Above ground
B – Below Ground
Diam – Diameter in inches
£/M Pipe – Bare pipe cost

Coat – Coated (internally or externally)
Ins – Insulation
Legals – Legal costs
CP – Cathodic Protection
Basic Const – Basic construction cost
D & A – Design & Administration cost
"OTH" or "MAH" – Major Accident Hazard or otherwise
ERC – Estimated Replacement Cost
ARC – Adjusted Replacement Cost
RV – Rateable Value
RE – Rateable equipment associated with pipeline
BVS – Block Valve Stations

REF : 15 OCCUPIER : LIST RV £ RV 568641 WITHOUT PREJUDICE

ADDRESS : Birth Heath / Mickle Trafford, Cheshire

Y MAH #DIV/0! % 2000RV

Prod	Age	WT	SPEC	S W	A B	Diam	DM Pipe	Coat ext	Coat Int	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Ease ment	Total Cost	No of Pipes	Length	E.R.C 11372821	Age All	Oth All	A.R.C. 11372821	R.V. 568641	Remarks
	2001	17.5	X60	W	BH	36	166.34	35.62	14.36	0.00	22.00	3.00	396.38	126.34	20.0%	519.72	1	0.0%	519.72	23.00	561.04	1	14500	11325095	0.0%		11325095	566255	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									47725	1	0.0%	47725		47725	1		47725	0%		47725	2386	
																			AFAs		0	0		0	0%		0	0	
																			BVS		25000	0		0	0%		0	0	

2005 Basic Easement 23.00
1995 Basic Easement 10.00

E.R.C. 11372821 A.R.C. 11372821 R.V. 568641

Crossings	No	Amount	Units	Unit Cost	ERC
River			M	1850	0
Rail	1		Rails	12849	25698
Canal			M	20559	0
Motorway				32534	0
Dual Carriageway				19636	0
'A' Roads	1			18092	18092
'B' Roads				1032	0
Minor Roads	6			656	3936
Other				6 2000 list	0
					======
Total per pipe					47725

AFA 1995
BVS 1995
Total Length 14500

NOTES

Prod = Product (b = brine, c = chemical, w = water)
WT = Wall thickness
Spec = Grade/Specification
S = Seamless
W = Welded
A = Above ground
B = Below Ground
Diam = Diameter in inches
DM Pipe = Bare pipe cost

Coat = Coated (internally or externally)
Ins = Insulation
Legals = Legal costs
CP = Cathodic Protection
Basic Const = basic construction cost
D & A = Design & Administration cost
"OTH" or "MAH" = Major Accident Hazard or otherwise
ERC = Estimated Replacement Cost
ARC = Adjusted Replacement Cost
RV = Rateable Value
RE = Rateable equipment associated with pipeline
BVS = Block Valve Stations

REF : 21 OCCUPIER : LIST RV £ RV 1139442 WITHOUT PREJUDICE

ADDRESS : Peterstow / Llanvetherine / Gilwern, Monmouthshire

Y (above Coat int) — MAH (above D&A %) — #DIV/0! % (above Total Cost / No of Pipes) — 2000RV (above Length)

Prod	Age	WT	SPEC	S W	A B	Diam	£/M Pipe	Coat ext	Coat int	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Easement	Total Cost	No of Pipes	Length	E.R.C 22788831	Age All	Oth All	A.R.C. 22788831	R.V. 1139442	Remarks
	2001	14.3	X60	W	BH	24	90.32	23.78	9.58	0.00	22.00	3.00	275.63	84.86	20.0%	363.49	1	0.0%	363.49	23.00	532.17	1	42500	22617196	0.0%		22617196	1130860	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									171636	1	0.0%	171636		171636	1		171636	0%		171636	8582	
																			AFAs		0	0		0	0%		0	0	
																			BVS		170000	0		0	0%		0	0	
																	2005 Basic Easement			23.00				----------			----------	----------	
																	1995 Basic Easement			10.00				22788831			22788831	1139442	

Crossings	No	Amount *	Units	Unit Cost	ERC
River	1		M	1434	43022
Rail	2		Rails	9957	39827
Canal			M	15930	0
Motorway				21425	0
Dual Carriageway				14812	0
'A' Roads	5			14019	70093
'B' Roads	2			820	1640
Minor Roads	26			656	17056
Other				0 2000 list	0
					======
Total per pipe					171636

AFA 1995	
BVS 1995	
Total Length	42500

NOTES

Prod – Product (b – brine, c – chemical, w – water)
WT – Wall thickness
Spec – Grade/Specification
S – Seamless
W – Welded
A – Above ground
B – Below Ground
Diam – Diameter in inches
£/M Pipe – Bare pipe cost

Coat – Coated (internally or externally)
Ins – Insulation
Legals – Legal costs
CP – Cathodic Protection
Basic Const – Basic construction cost
D & A – Design & Administration cost
"OTH" or "MAH" – Major Accident Hazard or otherwise
ERC – Estimated Replacement Cost
ARC – Adjusted Replacement Cost
RV – Rateable Value
RE – Rateable equipment associated with pipeline
BVS – Block Valve Stations

REF : 21a　　OCCUPIER :　　LIST RV　£　　RV　646586　　WITHOUT PREJUDICE

ADDRESS : Gilwern / Hafodyrynys

Prod	Age	WT	SPEC	S W	A B	Diam	£M Pipe	Coat ext	Coat Int (V)	Ins	Legals	CP	Basic Const	D&A	D&A % (MAH)	Total Const	No in Track	Multi Pipe	Const Cost	Ease ment	Total Cost (#DIV/0!)	No of Pipes (%)	Length (2000RV)	E.R.C 12931714	Age All	Oth All	A.R.C. 12931714	R.V. 646586	Remarks
	2002	14.3	X60	W	BH	24	90.32	23.76	9.88	0.00	22.00	3.00	275.63	84.86	20.0%	363.49	1	0.0%	363.49	23.00	532.17	1	24300	12931714	0.0%		12931714	646586	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
		0.0					0.00	0.00		0.00	0.00	0.00	0.00	0.00	20.0%	0.00	1	0.0%	0.00	23.00	23.00	1		0	0.0%		0	0	
							Crossings									0	1	0.0%	0		0	1		0	0%		0	0	
																			AFAs		0	0		0	0%		0	0	
																			BVS		170000	0		0	0%		0	0	
																	2005 Basic Easement			23.00				----------			----------	----------	
																	1995 Basic Easement			10.00				12931714			12931714	646586	

Crossings	No	Amount	Units	Unit Cost	ERC
River			M	1434	0
Rail			Rails	9957	0
Canal			M	15930	0
Motorway				21425	0
Dual Carriageway				14812	0
'A' Roads				14019	0
'B' Roads				820	0
Minor Roads				656	0
Other				0 2000 list	0
					======
		Total per pipe			0

AFA 1995	
BVS 1995	
Total Length	24300

NOTES

Prod – Product (b – brine, c – chemical, w = water)
WT – Wall thickness
Spec – Grade/Specification
S – Seamless
W – Welded
A – Above ground
B = Below Ground
Diam – Diameter in inches
£M Pipe – Bare pipe cost

Coat – Coated (internally or externally)
Ins – Insulation
Legals = Legal costs
CP – Cathodic Protection
Basic Const – Basic construction cost
D & A – Design & Administration cost
"OTH" or "MAH" = Major Accident Hazard or otherwise
ERC – Estimated Replacement Cost
ARC – Adjusted Replacement Cost
RV – Rateable Value
RE – Rateable equipment associated with pipeline
BVS = Block Valve Stations

Summary of Revised 2005 Valuation Scale

Line Pipe cost	No change to agreed 2000 scale
Coating cost	Changed. See Revised Scale
Pipe Grade Specification	No change to agreed 2000 scale
Cathodic protection	No change to agreed 2000 scale
Construction cost	Changed. See Revised Scale
Legal cost	10% increase to £22
Design & Administration	No change to agreed 2000 scale Major accident hazard (MAH) 20%. Other (OTH) 15%
Easement	15% increase to £23 m run
Crossings	Changed. See Revised Scale
Block Valve	Changed. See Revised Scale
Multi-pipe allowance	No change to agreed 2000 scale
Different Types of Terrain adjustment	No change to agreed 2000 scale
Age allowances	Changed. Moved by 5 years on agreed scale

General Notes on Items making up the Pipeline 2005 Valuation Scale.

The 2005 Valuation Scale is based on the universally adopted agreed and accepted 2000 scale uplifted where appropriate to reflect changes in costs between the two rating lists.

Location factor, Fees and Contract Size Adjustment

No change from 2000 List approach.

Not applicable to the whole valuation. Undertaken by a national company and thus local rates do not apply. Evidence based on a cross section of contracts.

Line Pipe Cost and Specification

Pipes for pipelines are made to different specifications and in different ways depending upon the materials they are to carry and the pressures involved. The standard specification is to API L X52 British Standard. The greater the pipe diameter (still referred to in the trade in inches) the thicker the wall of the pipe and the weight of the pipe, but this also depends on the manufacturing specification. Line pipes can be manufactured seamless or welded, but the majority are welded.

The costs are based steel line pipes on prices per £ per m run (based on weight) to manufacture the pipe size taking into account the pipe diameter and wall thickness. If a different material is used the costs will need adjusting to reflect this.

No change has been made to the adopted agreed 2000 approach.

The costs are based on the manufacturing specification API LX52 for line pipe. The specification reflects the process of manufacturing, composition, and strength of the pipe.

Any variation on this specification requires adjustment and the following table is used (unchanged from 2000 approach) :-

Pipe Specification differential

GrA	0.9091
GrB	0.9091
X42	0.9549
X52	1.0000
X60	1.0909
X65	1.1367
X80	1.2641

Coating

The external coating cost is based on a fusion bonded epoxy coat. If any other coating is applicable the cost will need adjusting. The internal coat is based on a gas flow painted coat. Costs are £ per m run.

DIAM "	NOMINAL	COAT EXTERNAL	COAT INTERNAL
2	60.3	£2.34	£0.94
3	88.9	£3.46	£1.40
4	114.3	£4.46	£1.80
6	168.3	£6.56	£2.64
8	219.1	£8.54	£3.44
10	273.1	£10.64	£4.30
12	323.9	£12.62	£5.08
14	355.6	£13.86	£5.58
16	406.4	£17.80	£6.39
18	457.0	£15.84	£7.18
20	508.0	£19.80	£7.98
22	559.0	£21.78	£8.78
24	610.0	£23.78	£9.58
26	660.4	£25.72	£10.38
28	711.2	£27.70	£11.18
30	762.0	£29.70	£11.98
32	813.0	£31.68	£12.78
34	864.0	£33.68	£13.58
36	914.0	£35.62	£14.36
38	965.2	£37.60	£15.16
40	1016.0	£39.60	£15.96
42	1066.8	£41.58	£16.76
44	1117.6	£43.58	£17.56
46	1168.4	£45.52	£18.36
48	1219.2	£47.50	£19.16

Pipe Insulation

Some pipes are heavily insulated and an additional cost should be added to reflect this.

Legal Costs

Uplifted 10% on 2000 scale to give £22 per m run.

Cathodic Protection

No change on the adopted agreed 2000 approach, £3 per m run.

Land Variables

Construction costs can vary throughout every pipe-length of a pipeline however these costs usually equate themselves out over a reasonable section of a pipeline. These costs consider the construction costs averaged out over long sections of pipelme and consider two types of terrain, Normal and Hard. Groundwater conditions can also have a significant affect on the cost of construction. Consideration is also taken if the land terrain is soft. The areas forming the construction costs are site construction, design and administration legal costs and easements. Normal Terrain : Rolling countryside usually arable agricultural land.
Hard Terrain (BH): Exposed high moor land and hills typically found in the Grampians, Pennines, Brecon Beacons and Galloway Peninsular.

Design & Adminstration

No change on the agreed 2000 scale, 20% for Major Accident Hazard (MAH) pipelines, 15% for others (OTH).

Multi-Track Allowances

In certain cases pipeline operatives are in a position to lay more than one pipe in a single trench. In many cases this could be at different levels or side by side. The result is an overall saving in construction costs. The allowance is for the Construction, Cathodic Protection and D & A only. The allowance is only applicable when a single company lays its own multiple pipes in one trench.

1 pipe	0	Easement adjustment	1
2 pipes	0.175		1.5
3 pipes	0.20		1.75
4 pipes	0.25		1.875
5 pipes	0.28		1.9375
6 pipes	0.3		1.9688
7 pipes	0.33		1.9844
8 pipes	0.33		1.9922
9 pipes	0.35		1.9961
10 pipes	0.35		1.9980

Easement

In respect of easements these may vary due to the area through which the pipeline passes.

The cost of £23 per m run is based on the piepline passing through agricultural land.

Where pipelines pass through industrial land or other land uses the cost will need adjustment to reflect this. Local land values are applicable. Where all specific easement details are available throughout a length of pipeline the easement element should be judged on its merits.

Age Allowances

The adopted agreed 2000 approach has been uplifted/moved by 5 years.

	Product		
Age	Brine	Chemical	Water
1850	50%	20%	25%
1925	50%	20%	25%
1926	49%	20%	25%
1927	48%	20%	24%
1928	47%	20%	24%
1929	46%	20%	23%
1930	45%	20%	23%
1931	44%	20%	22%
1932	43%	20%	22%
1933	42%	20%	21%
1934	41%	20%	21%
1935	40%	20%	20%
1936	39%	20%	20%
1937	38%	20%	19%
1938	37%	20%	19%
1939	36%	20%	18%
1940	35%	20%	18%
1941	34%	20%	17%
1942	33%	20%	17%
1943	32%	20%	16%
1944	31%	20%	16%

1945	30%	20%	15%
1946	29%	20%	15%
1947	28%	20%	14%
1948	27%	20%	14%
1949	26%	20%	13%
1950	25%	20%	13%
1951	24%	20%	12%
1952	23%	20%	12%
1953	22%	20%	11%
1954	21%	20%	11%
1955	20%	20%	10%
1956	19%	19%	10%
1957	18%	18%	9%
1958	17%	17%	9%
1959	16%	16%	8%
1960	15%	15%	8%
1961	14%	14%	7%
1962	13%	13%	7%
1963	12%	12%	6%
1964	11%	11%	6%
1965	10%	10%	5%
1966	9%	9%	5%
1967	8%	8%	4%
1968	7%	7%	4%
1969	6%	6%	3%
1970	5%	5%	3%
1971	4%	4%	2%
1972	3%	3%	2%
1973	2%	2%	1%
1974	1%	1%	1%
1975	0%	0%	0%
2010	0%	0%	0%

Crossings

These costs reflect the additions that should be made to the pipe construction costs due to the abnormal conditions arising from man made or natural obstacles. The greater the diameter of the pipe the more support to the pipe is required to prevent pipe damage. Any differences to the type / length of crossing will need to be reflected by adjustment to the costs detailed below.

River Crossings

Set up site, sink shaft on both sides of river bank, excavate trench in river bed, pull pipe through bed of river. Assumes 30m. length.

Rail Crossings

Set up site, tunnel under railway line and remove ballast, lay pipe in granular material, back-fill to original levels. Costs are for a single track and should be doubled for two tracks.

Canal Crossings

Set up site, sink shaft on both sides of canal, cut through and re-insulate bank, excavate bed, lay in pipe and cover. Assume 15 m max width of canal.

Road Crossings

The width of a motorway crossing has been taken as 40 m.

The width of Trunk roads has been taken as 12 m single and 15 m dual carriageway.

The width of a main "A" road has been taken as 12 m single and 15 m dual carriageway.

The width of a "B" road has been taken as 10 m single and 8 m other minor roads.

The width of a farm track has been taken as 6 m.

Crossings

PIPE SIZE

DIAM "	NOMINAL NOMINAL	CROSSING TYPE RIVER 115% PER M	RAIL EACH	CANAL EACH	MOTOR WAY EACH	DUAL EACH	A EACH	B EACH	Minor EACH
2	60.3	£1190	£8266	£13225	£15341	£12035	£11638	£569	£455
3	88.9	£1190	£8266	£13225	£15341	£12035	£11638	£569	£455
4	114.3	£1190	£8266	£13225	£15341	£12035	£11638	£569	£455
6	168.3	£1190	£8266	£13225	£15341	£12035	£11638	£569	£455
8	219.1	£1190	£8266	£13225	£15341	£12035	£11638	£569	£455
10	273.1	£1190	£8266	£13225	£15341	£12035	£11638	£569	£455
12	323.9	£1190	£8266	£13225	£15341	£12035	£11638	£622	£497
14	355.6	£1434	£9957	£15930	£21425	£14812	£14019	£622	£497
16	406.4	£1434	£9957	£15930	£21425	£14812	£14019	£622	£497
18	457.0	£1434	£9957	£15930	£21425	£14812	£14019	£622	£497
20	508.0	£1434	£9957	£15930	£21425	£14812	£14019	£820	£656
22	559.0	£1434	£9957	£15930	£21425	£14812	£14019	£820	£656
24	610.0	£1434	£9957	£15930	£21425	£14812	£14019	£820	£656
26	660.4	£1850	£12849	£20559	£21425	£19639	£18092	£1032	£656
28	711.2	£1850	£12849	£20559	£32534	£19639	£18092	£1032	£656
30	762.0	£1850	£12849	£20559	£32534	£19639	£18092	£1032	£656
32	813.0	£1850	£12849	£20559	£32534	£19639	£18092	£1032	£656
34	864.0	£1850	£12849	£20559	£32534	£19639	£18092	£1032	£656
36	914.0	£1850	£12849	£20559	£32534	£19639	£18092	£1032	£656
38	965.2	£1850	£12849	£20559	£32534	£19639	£18092	£1230	£984
40	1016.0	£2462	£17095	£27352	£46288	£26450	£24070	£1230	£984
42	1066.8	£2462	£17095	£27352	£46288	£26450	£24070	£1230	£984
44	1117.6	£2462	£17095	£27352	£46288	£26450	£24070	£1230	£984
46	1168.4	£2462	£17095	£27352	£46288	£26450	£24070	£1230	£984
48	1219.2	£2462	£17095	£27352	£46288	£26450	£24070	£1230	£984

Block Valve Stations

Block Valve Stations do vary due to site anomalies but they are based on a standard design and specification. They occur in most gas pipelines every 16 km (10 miles) and consist of: - compound approx 16 m x 16 m surrounded by a security ring fence. The site surface is usually small stone chippings however inside the access gate may be a hard-standing area. Inside the fence to the side of the site will be a GRF Kiosk which will contain all local control and monitoring instrumentation. In some cases the block valve facility is above ground but normally the main pipe and valves are below ground in a pit (often concrete lined). The pipe work and apparatus is usually surrounded in sandbags whilst the electronic connections and "manual" valves are above ground.

The Kiosk has a supervisory, control and data acquisition computer system (SCADA) which via telemetry is linked to a central control. This allows the system, via automatic valves, to be rapidly closed down section by section in the case of an emergency.

DIAM "	NOMINAL NOMINAL	BVS
2	60.3	£112000
3	88.9	£112000
4	114.3	£112000
6	168.3	£112000
8	219.1	£112000
10	273.1	£112000
12	323.9	£112000
14	355.6	£144000
16	406.4	£144000
18	457.0	£144000
20	508.0	£144000
22	559.0	£144000
24	610.0	£170000
26	660.4	£170000
28	711.2	£170000
30	762.0	£195000
32	813.0	£195000
34	864.0	£195000
36	914.0	£229000
38	965.2	£229000
40	1016.0	£229000
42	1066.8	£254000
44	1117.6	£254000
46	1168.4	£254000
48	1219.2	£283000

VOA 2005 Pipeline Valuation Scale.

REF : OCCUPIER : LIST HV C

VO Revised Valuation Scale. Compare 2000 to 2005 WITHOUT PREJUDICE OTH #DIV/0!

List	WT	SPEC	S	W	A	B	Diam	£/M Pipe	Coat Ext	Coat	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Ease mm	Total Cost
2005	3.9	X52	W	B			2	1.61	2.34	0.94	0.00	22.00	3.00	119.07	22.34	15.0%	144.41	1	0.0%	144.41	23.00	194.31
2000	3.9	X52	W	B			2	1.61	3.80		0.00	20.00	3.00	85.05	17.02	15.0%	105.07	1	0.0%	105.07	20.00	150.48
								100%	62%			110%	100%	140%		100%	137%				115%	129%
2005	5.5	X52	W	B			3	3.36	3.46	1.40	0.00	22.00	3.00	124.34	23.83	15.0%	150.96	1	0.0%	150.96	23.00	204.20
2000	5.5	X52	W	B			3	3.36	4.75		0.00	20.00	3.00	88.82	17.99	15.0%	109.81	1	0.0%	109.81	20.00	157.92
								100%	73%			110%	100%	140%		100%	137%				115%	129%
2005	6.0	X52	W	B			4	4.76	4.46	1.80	0.00	22.00	3.00	127.75	24.56	15.0%	155.31	1	0.0%	155.31	23.00	211.33
2000	6.0	X52	W	B			4	4.76	5.70		0.00	20.00	3.00	91.25	18.71	15.0%	112.95	1	0.0%	112.95	20.00	163.41
								100%	78%			110%	100%	140%		100%	138%				115%	129%
2005	7.1	X52	W	B			6	8.38	8.55	2.64	0.00	22.00	3.00	155.09	29.65	15.0%	187.75	1	0.0%	187.75	23.00	260.33
2000	7.1	X52	W	B			6	8.38	8.41		0.00	20.00	3.00	103.40	21.18	15.0%	127.58	1	0.0%	127.58	20.00	182.37
								100%	102%			110%	100%	150%		100%	147%				115%	137%
2005	7.8	X52	W	B			8	10.87	8.54	3.44	0.00	22.00	3.00	171.27	32.87	15.0%	207.13	1	0.0%	207.13	23.00	274.98
2000	7.8	X52	W	B			8	10.87	7.96		0.00	20.00	3.00	107.04	22.33	15.0%	132.38	1	0.0%	132.38	20.00	181.23
								100%	107%			110%	100%	160%		100%	156%				115%	144%
2005	7.8	X52	W	B			10	15.16	10.64	4.30	0.00	22.00	3.00	175.15	34.54	15.0%	212.69	1	0.0%	212.69	23.00	287.79
2000	7.8	X52	W	B			10	15.16	9.50		0.00	20.00	3.00	109.47	23.57	15.0%	136.04	1	0.0%	136.04	20.00	200.70
								100%	112%			110%	100%	160%		100%	156%				115%	143%
2005	8.4	X52	W	B			12	19.41	12.62	5.06	0.00	22.00	3.00	190.23	37.85	15.0%	231.08	1	0.0%	231.08	23.00	313.20
2000	8.4	X52	W	B			12	19.41	10.93		0.00	20.00	3.00	111.99	24.73	15.0%	139.69	1	0.0%	139.69	20.00	210.02
								100%	116%			110%	100%	170%		100%	165%				115%	149%
2005	9.5	X52	W	B			14	24.08	13.86	5.58	0.00	22.00	3.00	200.56	40.36	15.0%	240.92	1	0.0%	240.92	23.00	332.44
2000	9.5	X52	W	B			14	24.08	13.11		0.00	20.00	3.00	117.96	26.73	15.0%	147.70	1	0.0%	147.70	20.00	224.00
								100%	106%			110%	100%	170%		100%	165%				115%	148%
2005	9.5	X52	W	B			16	27.62	17.80	6.39	0.00	22.00	3.00	206.55	42.50	15.0%	252.05	1	0.0%	252.05	23.00	348.88
2000	9.5	X52	W	B			16	27.62	13.70		0.00	20.00	3.00	121.50	27.88	15.0%	152.38	1	0.0%	152.38	20.00	230.76
								100%	129%			110%	100%	170%		100%	165%				115%	149%
2005	11.1	X52	W	B			18	36.25	15.84	7.19	0.00	22.00	3.00	212.95	44.50	15.0%	260.54	1	0.0%	260.54	23.00	364.81
2000	11.1	X52	W	B			18	36.25	15.58		0.00	20.00	3.00	126.27	30.01	15.0%	156.28	1	0.0%	156.28	20.00	241.11
								100%	102%			110%	100%	170%		100%	165%				115%	140%
2005	12.7	X52	W	B			20	46.07	19.00	7.98	0.00	22.00	3.00	223.20	48.32	15.0%	274.60	1	0.0%	274.60	23.00	393.45
2000	12.7	X52	W	B			20	46.07	17.20		0.00	20.00	3.00	131.34	32.64	15.0%	166.98	1	0.0%	166.98	20.00	270.25
								100%	115%			110%	100%	170%		100%	164%				115%	146%
2005	12.7	X52	W	B			22	67.43	21.76	8.78	0.00	22.00	3.00	233.61	53.49	15.0%	290.10	1	0.0%	290.10	23.00	433.09
2000	12.7	X52	W	B			22	67.43	19.69		0.00	20.00	3.00	137.42	37.13	15.0%	177.55	1	0.0%	177.55	20.00	304.07
								100%	111%			110%	100%	170%		100%	163%				115%	142%
2005	14.3	X52	W	B			24	82.79	23.78	9.58	0.00	22.00	3.00	248.07	58.38	15.0%	309.45	1	0.0%	309.45	23.00	470.66
2000	14.3	X52	W	B			24	82.79	21.61		0.00	20.00	3.00	145.92	41.00	15.0%	189.92	1	0.0%	189.92	20.00	334.33
								100%	110%			110%	100%	170%		100%	163%				115%	141%
2005	16.0	X52	W	B			26	100.21	25.72	10.38	0.00	22.00	3.00	254.26	62.34	15.0%	319.60	1	0.0%	319.60	23.00	500.91
2000	16.0	X52	W	B			26	100.21	23.28		0.00	20.00	3.00	149.57	44.41	15.0%	196.97	1	0.0%	196.97	20.00	360.46
								100%	110%			110%	100%	170%		100%	162%				115%	139%
2005	16.0	X52	W	B			28	108.11	27.70	11.18	0.00	22.00	3.00	259.39	64.56	15.0%	325.95	1	0.0%	325.95	23.00	517.54
2000	16.0	X52	W	B			28	108.11	25.07		0.00	20.00	3.00	152.00	46.23	15.0%	201.22	1	0.0%	201.22	20.00	374.40
								100%	110%			110%	100%	170%		100%	162%				115%	138%
2005	16.0	X52	W	B			30	116.01	29.70	11.98	0.00	22.00	3.00	283.51	71.43	15.0%	367.94	1	0.0%	367.94	23.00	570.62
2000	16.0	X52	W	B			30	116.01	26.89		0.00	20.00	3.00	172.65	50.78	15.0%	226.43	1	0.0%	226.43	20.00	409.30
								100%	111%			110%	100%	170%		100%	162%				115%	139%
2005	16.0	X52	W	B			32	123.94	31.68	12.78	0.00	22.00	3.00	311.89	75.79	15.0%	390.68	1	0.0%	390.68	23.00	604.08
2000	16.0	X52	W	B			32	123.94	28.65		0.00	20.00	3.00	183.47	53.86	15.0%	240.32	1	0.0%	240.32	20.00	432.91
								100%	111%			110%	100%	170%		100%	163%				115%	140%
2005	16.0	X52	W	B			34	131.87	33.66	13.58	0.00	22.00	3.00	332.55	80.50	15.0%	416.05	1	0.0%	416.05	23.00	640.18
2000	16.0	X52	W	B			34	131.87	30.44		0.00	20.00	3.00	196.82	57.14	15.0%	255.75	1	0.0%	255.75	20.00	458.07
								100%	111%			110%	100%	170%		100%	163%				115%	140%
2005	17.5	X52	W	B			36	152.48	39.02	14.36	0.00	22.00	3.00	351.34	86.82	15.0%	441.16	1	0.0%	441.16	23.00	689.02
2000	17.5	X52	W	B			36	152.48	32.23		0.00	20.00	3.00	208.67	62.19	15.0%	271.83	1	0.0%	271.83	20.00	486.54
								100%	111%			110%	100%	170%		100%	162%				115%	139%
2005	17.5	X52	W	B			38	161.19	37.60	15.16	0.00	22.00	3.00	350.11	88.36	15.0%	441.47	1	0.0%	441.47	23.00	700.42
2000	17.5	X52	W	B			38	161.19	34.02		0.00	20.00	3.00	218.82	68.56	15.0%	287.38	1	0.0%	287.38	20.00	522.59
								100%	111%			110%	100%	160%		100%	154%				115%	134%
2005	17.5	X52	W	B			40	169.83	39.60	15.96	0.00	22.00	3.00	378.27	94.45	15.0%	476.72	1	0.0%	476.72	23.00	747.11
2000	17.5	X52	W	B			40	169.83	35.81		0.00	20.00	3.00	237.05	69.85	15.0%	309.90	1	0.0%	309.90	20.00	555.54
								100%	111%			110%	100%	160%		100%	154%				115%	134%
2005	17.5	X52	W	B			42	178.47	41.58	16.76	0.00	22.00	3.00	382.91	99.71	15.0%	482.61	1	0.0%	482.61	23.00	784.42
2000	17.5	X52	W	B			42	178.47	37.60		0.00	20.00	3.00	255.27	74.19	15.0%	332.42	1	0.0%	332.42	20.00	588.50
								100%	111%			110%	100%	150%		100%	145%				115%	133%
2005	17.5	X52	W	B			44	187.11	43.56	17.56	0.00	22.00	3.00	374.99	97.15	15.0%	474.54	1	0.0%	474.54	23.00	767.79
2000	17.5	X52	W	B			44	187.11	39.40		0.00	20.00	3.00	267.42	77.54	15.0%	347.96	1	0.0%	347.96	20.00	614.47
								100%	111%			110%	100%	140%		100%	136%				115%	125%
2005	17.5	X52	W	B			46	195.75	45.52	18.35	0.00	22.00	3.00	391.40	101.40	15.0%	495.80	1	0.0%	495.80	23.00	800.44
2000	17.5	X52	W	B			46	195.75	41.19		0.00	20.00	3.00	279.57	80.93	15.0%	363.50	1	0.0%	363.50	20.00	640.43
								100%	111%			110%	100%	140%		100%	136%				115%	125%
2005	19.1	X52	W	B			48	222.78	47.50	19.16	0.00	22.00	3.00	410.11	105.68	15.0%	521.79	1	0.0%	521.79	23.00	850.23
2000	19.1	X52	W	B			48	222.78	42.98		0.00	20.00	3.00	292.54	87.25	15.0%	383.19	1	0.0%	383.19	20.00	668.90
								100%	111%			110%	100%	140%		100%	136%				115%	124%

NOTES

Prod = Product (b = brine, c = chemical, w = water)
WT = Wall thickness
Spec = Grade/Specification
S = Seamless
W = Welded
A = Above ground
B = Below Ground
Diam = Diameter in inches
£/M Pipe = Bare pipe cost

Coat = Coated (internally or externally)
Ins = Insulation
Legals = Legal costs
CP = Cathodic Protection
Basic Const = Basic construction cost
D & A = Design & Administration cost
"OTH" or "MAH" = Major Accident Hazard or otherwise
ERC = Estimated Replacement Cost
ARC = Adjusted Replacement Cost
RV = Rateable Value
RE = Rateable equipment associated with pipeline
BVS = Block Valve Stations

NO AGE ALLOWANCE

NET: OCCUPIER: LIST RV £ RV

VO Revised Valuation Scale, Compare 2000 to 2005 — WITHOUT PREJUDICE — OTH — WITHOUT PREJUDICE

List	Age	WT	Spec	IS W	A B	Diam	PM Pipe	Cost Est	Inc Cost	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Line	Const Cost	Base nom	Total Cost	No of Pipes	Length	Age All	RV 1053037
2005	1975	3.9	X52	W	B	2	1.61	2.34	0.00	0.00	22.00	3.00	119.07	22.26	15.0%	144.27	1	0.0%	144.27	23.00	158.22	1	1000	0.0%	9601
2000	1975	3.9	X52	W	B	2	1.61	3.86		0.00	20.00	3.00	85.05	17.02	15.0%	105.07	1	0.0%	105.07	20.00	150.40	1	1000	0.0%	6378
							100%	82%			110%	100%	140%		100%	137%				15%	128%				117%
2005	1975	5.5	X52	W	B	3	3.36	3.96	0.00	0.00	22.00	3.00	124.04	23.40	15.0%	150.77	1	0.0%	150.77	23.00	202.99	1	1000	0.0%	10139
2000	1975	5.5	X52	W	B	3	3.36	4.75		0.00	20.00	3.00	88.52	17.99	15.0%	109.51	1	0.0%	109.51	20.00	157.92	1	1000	0.0%	6655
							100%	73%			110%	100%	140%		100%	137%				15%	128%				117%
2005	1975	6.0	X52	W	B	4	4.70	4.46	0.00	0.00	22.00	3.00	127.76	24.29	15.0%	156.04	1	0.0%	156.04	23.00	209.26	1	1000	0.0%	10453
2000	1975	6.0	X52	W	B	4	4.70	5.70		0.00	20.00	3.00	91.25	18.71	15.0%	112.96	1	0.0%	112.96	20.00	161.41	1	1000	0.0%	6862
							100%	78%			110%	100%	140%		100%	137%				15%	128%				116%
2005	1975	7.1	X52	W	B	5	6.38	5.56	0.00	0.00	22.00	3.00	130.39	25.05	15.0%	157.35	1	0.0%	157.35	23.00	247.29	1	1000	0.0%	12365
2000	1975	7.1	X52	W	B	5	6.38	6.41		0.00	20.00	3.00	103.40	21.18	15.0%	127.58	1	0.0%	127.58	20.00	182.27	1	1000	0.0%	7809
							100%	102%			110%	100%	140%		100%	147%				15%	136%				123%
2005	1975	7.9	X52	W	B	6	10.87	8.54	0.00	0.00	22.00	3.00	174.27	32.35	15.0%	206.62	1	0.0%	206.62	23.00	271.03	1	1000	0.0%	13552
2000	1975	7.9	X52	W	B	6	10.87	7.98		0.00	20.00	3.00	107.94	22.33	15.0%	132.28	1	0.0%	132.28	20.00	191.13	1	1000	0.0%	8215
							100%	107%			110%	100%	140%		100%	156%				15%	142%				109%
2005	1975	7.9	X52	W	B	10	16.16	10.66	0.00	0.00	22.00	3.00	173.15	33.89	15.0%	210.05	1	0.0%	212.05	23.00	282.04	1	1000	0.0%	14102
2000	1975	7.9	X52	W	B	10	16.16	9.50		0.00	20.00	3.00	109.47	23.57	15.0%	136.04	1	0.0%	136.04	20.00	200.70	1	1000	0.0%	10035
							100%	112%			110%	100%	140%		100%	139%				15%	141%				128%
2005	1975	8.4	X52	W	B	12	19.41	12.67	0.00	0.00	22.00	3.00	180.23	37.09	15.0%	230.32	1	0.0%	230.32	23.00	307.06	1	1000	0.0%	15353
2000	1975	8.4	X52	W	B	12	19.41	10.93		0.00	20.00	3.00	111.00	24.79	15.0%	139.69	1	0.0%	139.69	20.00	211.17	1	1000	0.0%	8281
							100%	116%			110%	100%	170%		100%	165%				15%	145%				109%
2005	1975	9.5	X52	W	B	14	24.08	13.88	0.00	0.00	22.00	3.00	210.50	39.53	15.0%	243.09	1	0.0%	243.09	23.00	329.03	1	1000	0.0%	16401
2000	1975	9.5	X52	W	B	14	24.08	13.11		0.00	20.00	3.00	117.98	25.73	15.0%	147.70	1	0.0%	147.70	20.00	224.39	1	1000	0.0%	9263
							100%	106%			110%	100%	170%		100%	165%				15%	145%				122%
2005	1975	9.5	X52	W	B	16	27.62	17.80	0.00	0.00	22.00	3.00	206.55	41.55	15.0%	251.10	1	0.0%	253.10	23.00	341.51	1	1000	0.0%	17070
2000	1975	9.5	X52	W	B	16	27.62	15.78		0.00	20.00	3.00	121.83	27.88	15.0%	152.38	1	0.0%	152.38	20.00	233.38	1	1000	0.0%	10169
							100%	129%			110%	100%	170%		100%	165%				15%	146%				133%
2005	1975	11.1	X52	W	B	18	36.25	15.84	0.00	0.00	22.00	3.00	212.55	43.51	15.0%	259.48	1	0.0%	259.48	23.00	358.10	1	1000	0.0%	17826
2000	1975	11.1	X52	W	B	18	36.25	15.58		0.00	20.00	3.00	115.27	26.03	15.0%	156.28	1	0.0%	156.28	20.00	250.11	1	1000	0.0%	10256
							100%	102%			110%	100%	170%		100%	166%				15%	143%				130%
2005	1975	12.7	X52	W	B	20	46.07	19.80	0.00	0.00	22.00	3.00	229.28	47.12	15.0%	273.40	1	0.0%	273.40	23.00	384.23	1	1000	0.0%	19214
2000	1975	12.7	X52	W	B	20	46.07	17.22		0.00	20.00	3.00	131.34	32.84	15.0%	168.18	1	0.0%	168.18	20.00	270.35	1	1000	0.0%	14004
							100%	115%			110%	100%	170%		100%	141%				15%	142%				129%
2005	1975	12.7	X52	W	B	22	67.43	21.78	0.00	0.00	22.00	3.00	253.61	52.17	15.0%	288.78	1	0.0%	288.78	23.00	409.99	1	1000	0.0%	21139
2000	1975	12.7	X52	W	B	22	67.43	19.68		0.00	20.00	3.00	137.42	32.53	15.0%	177.55	1	0.0%	177.55	20.00	304.07	1	1000	0.0%	16747
							100%	111%			110%	100%	170%		100%	163%				15%	139%				126%
2005	1975	14.3	X52	W	B	24	82.79	23.76	0.00	0.00	22.00	3.00	248.27	56.95	15.0%	308.01	1	0.0%	308.01	23.00	458.56	1	1000	0.0%	25209
2000	1975	14.3	X52	W	B	24	82.79	21.61		0.00	20.00	3.00	165.92	41.00	15.0%	189.92	1	0.0%	189.92	20.00	334.33	1	1000	0.0%	18000
							100%	110%			110%	100%	170%		100%	162%				15%	137%				125%
2005	1975	16.0	X52	W	B	28	100.21	25.72	0.00	0.00	22.00	3.00	254.26	60.75	15.0%	318.01	1	0.0%	318.01	23.00	488.02	1	1000	0.0%	26848
2000	1975	16.0	X52	W	B	28	100.21	23.28		0.00	20.00	3.00	169.57	44.41	15.0%	196.97	1	0.0%	196.97	20.00	350.46	1	1000	0.0%	19275
							100%	110%			110%	100%	170%		100%	161%				15%	139%				126%
2005	1975	16.0	X52	W	B	28	108.11	27.70	0.00	0.00	22.00	3.00	259.39	62.00	15.0%	324.27	1	0.0%	324.27	23.00	505.08	1	1000	0.0%	27804
2000	1975	16.0	X52	W	B	28	108.11	25.07		0.00	20.00	3.00	182.00	48.23	15.0%	201.22	1	0.0%	201.22	20.00	374.42	1	1000	0.0%	20597
							100%	110%			110%	100%	170%		100%	161%				15%	135%				123%
2005	1975	16.0	X52	W	B	30	116.01	29.70	0.00	0.00	22.00	3.00	283.51	69.63	15.0%	366.14	1	0.0%	366.14	23.00	656.85	1	1000	0.0%	27842
2000	1975	16.0	X52	W	B	30	116.01	26.86		0.00	20.00	3.00	172.65	50.78	15.0%	226.43	1	0.0%	226.43	20.00	406.30	1	1000	0.0%	32511
							100%	111%			110%	100%	170%		100%	162%				15%	139%				124%
2005	1975	16.0	X52	W	B	32	123.84	31.68	0.00	0.00	22.00	3.00	311.83	73.66	15.0%	388.77	1	0.0%	388.77	23.00	589.00	1	1000	0.0%	29460
2000	1975	16.0	X52	W	B	32	123.84	28.85		0.00	20.00	3.00	189.47	53.86	15.0%	240.32	1	0.0%	240.32	20.00	432.91	1	1000	0.0%	32470
							100%	111%			110%	100%	170%		100%	162%				15%	136%				124%
2005	1975	16.0	X52	W	B	34	131.67	33.66	0.00	0.00	22.00	3.00	332.55	78.48	15.0%	414.01	1	0.0%	414.01	23.00	621.66	1	1000	0.0%	31029
2000	1975	16.0	X52	W	B	34	131.67	30.44		0.00	20.00	3.00	195.52	57.14	15.0%	255.75	1	0.0%	255.75	20.00	458.07	1	1000	0.0%	29194
							100%	111%			110%	100%	170%		100%	162%				15%	136%				124%
2005	1975	17.5	X52	W	B	36	152.48	35.62	0.00	0.00	22.00	3.00	351.34	84.67	15.0%	439.01	1	0.0%	439.01	23.00	659.11	1	1000	0.0%	33068
2000	1975	17.5	X52	W	B	36	152.48	33.23		0.00	20.00	3.00	209.67	62.15	15.0%	271.83	1	0.0%	271.83	20.00	486.54	1	1000	0.0%	30538
							100%	111%			110%	100%	170%		100%	162%				15%	136%				124%
2005	1975	17.5	X52	W	B	38	161.19	37.60	0.00	0.00	22.00	3.00	350.11	88.09	15.0%	439.20	1	0.0%	439.20	23.00	682.99	1	1000	0.0%	34149
2000	1975	17.5	X52	W	B	38	161.19	34.82		0.00	20.00	3.00	218.82	65.58	15.0%	287.38	1	0.0%	287.38	20.00	522.69	1	1000	0.0%	28742
							100%	111%			110%	100%	160%		100%	163%				15%	131%				119%
2005	1975	17.5	X52	W	B	40	169.83	39.60	0.00	0.00	22.00	3.00	379.27	92.06	15.0%	474.33	1	0.0%	474.33	23.00	705.79	1	1000	0.0%	36108
2000	1975	17.5	X52	W	B	40	169.83	35.81		0.00	20.00	3.00	257.05	69.66	15.0%	309.90	1	0.0%	309.90	20.00	550.54	1	1000	0.0%	30566
							100%	111%			110%	100%	150%		100%	153%				15%	131%				118%
2005	1975	17.5	X52	W	B	42	178.47	41.58	0.00	0.00	22.00	3.00	382.91	94.19	15.0%	480.10	1	0.0%	480.10	23.00	745.15	1	1000	0.0%	37510
2000	1975	17.5	X52	W	B	42	178.47	37.60		0.00	20.00	3.00	265.27	74.15	15.0%	332.42	1	0.0%	332.42	20.00	568.50	1	1000	0.0%	32067
							100%	111%			110%	100%	150%		100%	144%				15%	127%				116%
2005	1975	17.5	X52	W	B	44	187.11	43.56	0.00	0.00	22.00	3.00	374.36	94.51	15.0%	471.90	1	0.0%	471.90	23.00	747.50	1	1000	0.0%	37280
2000	1975	17.5	X52	W	B	44	187.11	39.40		0.00	20.00	3.00	257.42	77.54	15.0%	347.96	1	0.0%	347.96	20.00	614.47	1	1000	0.0%	33795
							100%	111%			110%	100%	145%		100%	138%				15%	122%				111%
2005	1975	17.5	X52	W	B	46	195.75	45.52	0.00	0.00	22.00	3.00	391.40	98.65	15.0%	493.05	1	0.0%	493.05	23.00	779.52	1	1000	0.0%	39000
2000	1975	17.5	X52	W	B	46	195.75	41.19		0.00	20.00	3.00	275.57	80.93	15.0%	362.50	1	0.0%	362.50	20.00	640.43	1	1000	0.0%	35204
							100%	111%			110%	100%	140%		100%	136%				15%	122%				111%
2005	1975	18.1	X52	W	B	48	222.78	47.50	0.00	0.00	22.00	3.00	420.11	105.91	15.0%	526.02	1	0.0%	526.02	23.00	834.20	1	1000	0.0%	41710
2000	1975	18.1	X52	W	B	48	222.78	42.98		0.00	20.00	3.00	292.84	87.25	15.0%	380.19	1	0.0%	380.19	20.00	669.05	1	1000	0.0%	37882
							100%	111%			110%	100%	143%		100%	139%				15%	125%				110%

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BVS = Block Valve Stations

* CROSSINGS AND BLOCK VALVES WILL NEED TO BE ADDED TO GET FINAL FIGURES.

REF : OCCUPIER : LIST RV £

VO Revised Valuation Scale. Compare 2000 to 2005 | WITHOUT PREJUDICE | OTH | XDIV/0!

List	WT	Spec	S	A	Diam	D/M	Coat	Int	Ins	Legals	CP	Basic	D&A	D&A	Total	No in	Multi	Const	Base	Total
			W	B		Pipe	Ext	Coat				Const		%	Const	Track	Pipe	Cost	ment	Cost
2005	3.9	X52	W	B	2	1.61	2.34	0.94	0.00	22.00	3.00	119.07	22.34	15.0%	144.41	1	0.0%	144.41	23.00	194.31
2000	3.9	X52	W	B	2	1.61	3.80		0.00	20.00	3.00	95.05	17.02	15.0%	105.07	1	0.0%	105.07	20.00	150.48
						100%	62%			110%	100%	140%		100%	137%				115%	129%
2005	5.5	X52	W	B	3	3.36	3.46	1.40	0.00	22.00	3.00	124.34	23.83	15.0%	150.98	1	0.0%	150.98	23.00	204.20
2000	5.5	X52	W	B	3	3.36	4.75		0.00	20.00	3.00	98.87	17.09	15.0%	109.01	1	0.0%	109.01	20.00	157.92
						100%	73%			110%	100%	140%		100%	137%				115%	129%
2005	6.0	X52	W	B	4	4.76	4.46	1.80	0.00	22.00	3.00	127.75	24.50	15.0%	155.31	1	0.0%	155.31	23.00	211.33
2000	6.0	X52	W	B	4	4.76	5.70		0.00	20.00	3.00	91.25	16.71	15.0%	112.95	1	0.0%	112.95	20.00	163.41
						100%	78%			110%	100%	140%		100%	138%				115%	129%
2005	7.1	X52	W	B	6	8.38	6.56	2.64	0.00	22.00	3.00	155.00	29.65	15.0%	187.75	1	0.0%	187.75	23.00	258.33
2000	7.1	X52	W	B	6	8.38	6.41		0.00	20.00	3.00	103.40	21.18	15.0%	127.58	1	0.0%	127.58	20.00	182.37
						100%	102%			110%	100%	150%		100%	147%				115%	137%
2005	7.0	X52	W	B	8	10.87	8.54	3.44	0.00	22.00	3.00	171.27	32.87	15.0%	207.13	1	0.0%	207.13	23.00	274.89
2000	7.0	X52	W	B	8	10.87	7.98		0.00	20.00	3.00	107.04	22.33	15.0%	132.38	1	0.0%	132.38	20.00	191.23
						100%	107%			110%	100%	160%		100%	156%				115%	144%
2005	7.8	X52	W	B	10	15.16	10.64	4.30	0.00	22.00	3.00	175.15	34.64	15.0%	212.80	1	0.0%	212.80	23.00	287.79
2000	7.8	X52	W	B	10	15.16	9.50		0.00	20.00	3.00	109.47	23.57	15.0%	136.04	1	0.0%	136.04	20.00	200.70
						100%	112%			110%	100%	160%		100%	156%				115%	143%
2005	8.4	X52	W	B	12	19.41	12.62	5.06	0.00	22.00	3.00	190.23	37.85	15.0%	231.08	1	0.0%	231.08	23.00	313.20
2000	8.4	X52	W	B	12	19.41	10.93		0.00	20.00	3.00	111.90	24.79	15.0%	139.69	1	0.0%	139.69	20.00	210.02
						100%	116%			110%	100%	170%		100%	166%				115%	149%
2005	9.5	X52	W	B	14	24.08	13.86	5.58	0.00	22.00	3.00	200.50	40.36	15.0%	243.92	1	0.0%	243.92	23.00	332.44
2000	9.5	X52	W	B	14	24.08	13.11		0.00	20.00	3.00	117.88	28.73	15.0%	147.70	1	0.0%	147.70	20.00	224.69
						100%	106%			110%	100%	170%		100%	165%				115%	148%
2005	9.5	X52	W	B	16	27.62	17.90	6.39	0.00	22.00	3.00	206.55	42.50	15.0%	252.05	1	0.0%	252.05	23.00	348.86
2000	9.5	X52	W	B	16	27.62	13.78		0.00	20.00	3.00	121.90	27.88	15.0%	152.38	1	0.0%	152.38	20.00	233.70
						100%	129%			110%	100%	170%		100%	165%				115%	149%
2005	11.1	X52	W	B	18	36.25	15.04	7.19	0.00	22.00	3.00	212.95	44.58	15.0%	260.54	1	0.0%	260.54	23.00	364.81
2000	11.1	X52	W	B	18	36.25	15.58		0.00	20.00	3.00	125.27	30.01	15.0%	158.28	1	0.0%	158.28	20.00	250.11
						100%	102%			110%	100%	170%		100%	165%				115%	146%
2005	12.7	X52	W	B	20	46.07	19.80	7.99	0.00	22.00	3.00	223.28	48.32	15.0%	274.60	1	0.0%	274.60	23.00	390.45
2000	12.7	X52	W	B	20	46.07	17.20		0.00	20.00	3.00	131.34	32.64	15.0%	166.98	1	0.0%	166.98	20.00	270.25
						100%	115%			110%	100%	170%		100%	164%				115%	146%
2005	12.7	X52	W	B	22	67.43	21.78	8.78	0.00	22.00	3.00	233.01	53.49	15.0%	290.10	1	0.0%	290.10	23.00	433.09
2000	12.7	X52	W	B	22	67.43	19.69		0.00	20.00	3.00	137.42	37.13	15.0%	177.55	1	0.0%	177.55	20.00	304.67
						100%	111%			110%	100%	170%		100%	163%				115%	142%
2005	14.3	X52	W	B	24	82.79	23.78	9.58	0.00	22.00	3.00	248.07	58.38	15.0%	309.45	1	0.0%	309.45	23.00	476.60
2000	14.3	X52	W	B	24	82.79	21.61		0.00	20.00	3.00	145.92	41.20	15.0%	189.92	1	0.0%	189.92	20.00	334.00
						100%	110%			110%	100%	170%		100%	163%				115%	141%
2005	16.0	X52	W	B	26	100.21	25.72	10.38	0.00	22.00	3.00	254.26	62.34	15.0%	319.60	1	0.0%	319.60	23.00	500.91
2000	16.0	X52	W	B	26	100.21	23.28		0.00	20.00	3.00	140.57	44.41	15.0%	196.97	1	0.0%	196.97	20.00	360.45
						100%	110%			110%	100%	170%		100%	163%				115%	139%
2005	16.0	X52	W	B	28	108.11	27.70	11.18	0.00	22.00	3.00	258.39	64.56	15.0%	325.95	1	0.0%	325.95	23.00	517.94
2000	16.0	X52	W	B	28	108.11	25.07		0.00	20.00	3.00	152.00	46.23	15.0%	201.22	1	0.0%	201.22	20.00	374.40
						100%	110%			110%	100%	170%		100%	162%				115%	138%
2005	16.0	X52	W	B	30	116.01	29.70	11.98	0.00	22.00	3.00	293.51	71.43	15.0%	367.94	1	0.0%	367.94	23.00	570.62
2000	16.0	X52	W	B	30	116.01	26.86		0.00	20.00	3.00	172.65	50.78	15.0%	226.43	1	0.0%	226.43	20.00	409.30
						100%	111%			110%	100%	170%		100%	162%				115%	139%
2005	16.0	X52	W	B	32	123.94	31.68	12.78	0.00	22.00	3.00	311.89	75.79	15.0%	390.68	1	0.0%	390.68	23.00	604.08
2000	16.0	X52	W	B	32	123.94	28.65		0.00	20.00	3.00	183.47	53.86	15.0%	240.32	1	0.0%	240.32	20.00	432.91
						100%	111%			110%	100%	170%		100%	163%				115%	140%
2005	16.0	X52	W	B	34	131.87	33.66	13.58	0.00	22.00	3.00	332.55	80.50	15.0%	416.05	1	0.0%	416.05	23.00	640.18
2000	16.0	X52	W	B	34	131.87	30.44		0.00	20.00	3.00	195.62	57.14	15.0%	255.75	1	0.0%	255.75	20.00	458.07
						100%	111%			110%	100%	170%		100%	163%				115%	140%
2005	17.5	X52	W	B	36	152.48	35.62	14.36	0.00	22.00	3.00	351.34	86.82	15.0%	441.16	1	0.0%	441.16	23.00	688.62
2000	17.5	X52	W	B	36	152.48	32.23		0.00	20.00	3.00	206.67	62.16	15.0%	271.83	1	0.0%	271.83	20.00	496.54
						100%	111%			110%	100%	170%		100%	162%				115%	139%
2005	17.5	X52	W	B	38	161.19	37.60	15.16	0.00	22.00	3.00	351.11	86.86	15.0%	441.47	1	0.0%	441.47	23.00	700.42
2000	17.5	X52	W	B	38	161.19	34.02		0.00	20.00	3.00	218.82	65.56	15.0%	287.38	1	0.0%	287.38	20.00	522.69
						100%	111%			110%	100%	160%		100%	154%				115%	134%
2005	17.5	X52	W	B	40	169.83	39.60	15.96	0.00	22.00	3.00	378.27	94.45	15.0%	476.72	1	0.0%	476.72	23.00	747.11
2000	17.5	X52	W	B	40	169.83	35.81		0.00	20.00	3.00	237.05	69.85	15.0%	306.90	1	0.0%	306.90	20.00	555.54
						100%	111%			110%	100%	160%		100%	154%				115%	134%
2005	17.5	X52	W	B	42	178.47	41.58	16.75	0.00	22.00	3.00	382.91	96.71	15.0%	482.61	1	0.0%	482.61	23.00	784.42
2000	17.5	X52	W	B	42	178.47	37.60		0.00	20.00	3.00	255.27	74.15	15.0%	332.42	1	0.0%	332.42	20.00	568.50
						100%	111%			110%	100%	150%		100%	145%				115%	138%
2005	17.5	X52	W	B	44	187.11	43.58	17.56	0.00	22.00	3.00	374.36	97.15	15.0%	474.54	1	0.0%	474.54	23.00	767.79
2000	17.5	X52	W	B	44	187.11	39.40		0.00	20.00	3.00	267.42	77.54	15.0%	347.96	1	0.0%	347.96	20.00	614.47
						100%	111%			110%	100%	140%		100%	136%				115%	125%
2005	17.5	X52	W	B	46	195.75	45.52	18.36	0.00	22.00	3.00	381.40	101.40	15.0%	495.80	1	0.0%	495.80	23.00	800.44
2000	17.5	X52	W	B	46	195.75	41.19		0.00	20.00	3.00	279.97	80.93	15.0%	363.90	1	0.0%	363.90	20.00	640.43
						100%	111%			110%	100%	140%		100%	136%				115%	125%
2005	19.1	X52	W	B	48	222.78	47.50	19.16	0.00	22.00	3.00	410.11	108.68	15.0%	521.79	1	0.0%	521.79	23.00	856.23
2000	19.1	X52	W	B	48	222.78	42.98		0.00	20.00	3.00	292.94	87.25	15.0%	383.19	1	0.0%	383.19	20.00	688.95
						100%	111%			110%	100%	140%		100%	136%				115%	124%

NOTES

Prod = Product (b = brine, c = chemical, w = water)
WT = Wall thickness
Spec = Grade/Specification
S = Seamless
W = Welded
A = Above ground
B = Below Ground
Diam = Diameter in inches
D/M Pipe = Bare pipe cost
Coat = Coated (internally or externally)
Ins = Insulation
Legals = Legal costs
CP = Cathodic Protection
Basic Const = Basic construction cost
D & A = Design & Administration cost
"OTH" or "MAH" = Major Accident Hazard or otherwise
ERC = Estimated Replacement Cost
ARC = Adjusted Replacement Cost
RV = Rateable Value
RE = Rateable equipment associated with pipeline
BVS = Block Valve Station

REF : OCCUPIER : LIST RV £

VO Revised Valuation Scale, Compare 2000 to 2005 WITHOUT PREJUDICE MAH #DIV/0!

List	WT	SPEC	S W	A B	Diam	E/M Pipe	Coat Ext	Int Coat	Ins	Legals	CP	Basic Const	D&A	D&A %	Total Const	No in Track	Multi Pipe	Const Cost	Easement	Total Cost	CHANGE
2005	3.9	X52	W	B	2	1.61	2.34	0.94	0.00	22.00	3.00	119.07	29.79	20.0%	151.86	1	0.0%	151.86	23.00	201.75	
2000	3.9	X52	W	B	2	1.61	3.80		0.00	20.00	3.00	85.05	22.89	20.0%	110.74	1	0.0%	110.74	20.00	156.15	
						100%	62%			110%	100%	140%		100%	137%				115%	129%	
2005	5.5	X52	W	B	3	3.36	3.46	1.40	0.00	22.00	3.00	124.34	31.51	20.0%	158.86	1	0.0%	158.86	23.00	212.09	
2000	5.5	X52	W	B	3	3.36	4.75		0.00	20.00	3.00	88.82	23.99	20.0%	115.80	1	0.0%	115.80	20.00	163.91	
						100%	73%			110%	100%	140%		100%	137%				115%	129%	
2005	6.0	X52	W	B	4	4.76	4.46	1.80	0.00	22.00	3.00	127.75	32.75	20.0%	163.50	1	0.0%	163.50	23.00	219.62	
2000	6.0	X52	W	B	4	4.76	5.70		0.00	20.00	3.00	91.25	24.94	20.0%	119.19	1	0.0%	119.19	20.00	168.65	
						100%	78%			110%	100%	140%		100%	137%				115%	129%	
2005	7.1	X52	W	B	6	8.38	6.56	2.64	0.00	22.00	3.00	155.09	39.54	20.0%	197.63	1	0.0%	197.63	23.00	280.21	
2000	7.1	X52	W	B	6	8.38	6.41		0.00	20.00	3.00	105.40	26.24	20.0%	134.63	1	0.0%	134.63	20.00	189.43	
						100%	102%			110%	100%	150%		100%	147%				115%	137%	
2005	7.0	X52	W	B	8	10.87	8.54	3.44	0.00	22.00	3.00	171.27	43.82	20.0%	218.09	1	0.0%	218.09	23.00	295.95	
2000	7.0	X52	W	B	8	10.87	7.98		0.00	20.00	3.00	107.04	29.78	20.0%	139.82	1	0.0%	139.82	20.00	188.68	
						100%	107%			110%	100%	160%		100%	156%				115%	144%	
2005	7.8	X52	W	B	10	15.16	10.64	4.30	0.00	22.00	3.00	175.15	46.05	20.0%	224.20	1	0.0%	224.20	23.00	299.30	
2000	7.8	X52	W	B	10	15.16	9.50		0.00	20.00	3.00	109.47	31.43	20.0%	143.90	1	0.0%	143.90	20.00	208.55	
						100%	112%			110%	100%	160%		100%	156%				115%	144%	
2005	8.4	X52	W	B	12	19.41	12.62	5.08	0.00	22.00	3.00	190.20	50.47	20.0%	243.70	1	0.0%	243.70	23.00	325.61	
2000	8.4	X52	W	B	12	19.41	10.93		0.00	20.00	3.00	111.90	33.06	20.0%	147.95	1	0.0%	147.95	20.00	218.29	
						100%	116%			110%	100%	170%		100%	165%				115%	149%	
2005	9.5	X52	W	B	14	24.08	13.86	5.58	0.00	22.00	3.00	200.56	53.82	20.0%	257.38	1	0.0%	257.38	23.00	345.80	
2000	9.5	X52	W	B	14	24.08	13.11		0.00	20.00	3.00	117.90	35.60	20.0%	156.61	1	0.0%	156.61	20.00	233.90	
						100%	106%			110%	100%	170%		100%	164%				115%	148%	
2005	9.5	X52	W	B	16	27.62	17.80	6.39	0.00	22.00	3.00	206.55	56.67	20.0%	288.22	1	0.0%	288.22	23.00	383.83	
2000	9.5	X52	W	B	16	27.62	13.78		0.00	20.00	3.00	121.50	37.18	20.0%	161.68	1	0.0%	161.68	20.00	243.07	
						100%	129%			110%	100%	170%		100%	165%				115%	149%	
2005	11.1	X52	W	B	10	36.25	15.84	7.16	0.00	22.00	3.00	212.90	59.49	20.0%	275.40	1	0.0%	275.40	23.00	379.07	
2000	11.1	X52	W	B	18	36.25	15.58		0.00	20.00	3.00	125.27	40.02	20.0%	168.29	1	0.0%	168.29	20.00	260.12	
						100%	102%			110%	100%	170%		100%	164%				115%	146%	
2005	12.7	X52	W	B	20	46.07	19.90	7.96	0.00	22.00	3.00	223.20	64.40	20.0%	290.71	1	0.0%	290.71	23.00	409.56	
2000	12.7	X52	W	B	20	46.07	17.20		0.00	20.00	3.00	131.34	43.52	20.0%	177.86	1	0.0%	177.86	20.00	281.15	
						100%	115%			110%	100%	170%		100%	163%				115%	146%	
2005	12.7	X52	W	B	22	67.43	21.78	8.78	0.00	22.00	3.00	233.61	71.32	20.0%	307.93	1	0.0%	307.93	23.00	450.92	
2000	12.7	X52	W	B	22	67.43	19.69		0.00	20.00	3.00	137.42	49.31	20.0%	189.92	1	0.0%	189.92	20.00	317.05	
						100%	111%			110%	100%	170%		100%	162%				115%	142%	
2005	14.3	X52	W	B	24	82.79	23.78	9.58	0.00	22.00	3.00	248.07	77.84	20.0%	328.91	1	0.0%	328.91	23.00	490.06	
2000	14.3	X52	W	B	24	82.79	21.61		0.00	20.00	3.00	145.92	54.67	20.0%	203.59	1	0.0%	203.59	20.00	347.90	
						100%	110%			110%	100%	170%		100%	162%				115%	141%	
2005	16.0	X52	W	B	20	100.21	25.72	10.30	0.00	22.00	3.00	254.20	80.11	20.0%	340.30	1	0.0%	340.30	23.00	521.09	
2000	16.0	X52	W	B	20	100.21	23.28		0.00	20.00	3.00	149.57	59.21	20.0%	211.78	1	0.0%	211.78	20.00	375.28	
						100%	110%			110%	100%	170%		100%	161%				115%	139%	
2005	16.0	X52	W	B	26	108.11	27.70	11.18	0.00	22.00	3.00	258.30	86.08	20.0%	347.47	1	0.0%	347.47	23.00	539.46	
2000	16.0	X52	W	B	26	108.11	25.07		0.00	20.00	3.00	152.00	61.60	20.0%	216.63	1	0.0%	216.63	20.00	389.81	
						100%	110%			110%	100%	170%		100%	160%				115%	138%	
2005	16.0	X52	W	B	30	116.01	29.70	11.98	0.00	22.00	3.00	293.51	95.24	20.0%	391.75	1	0.0%	391.75	23.00	594.43	
2000	16.0	X52	W	B	30	116.01	26.86		0.00	20.00	3.00	172.55	67.70	20.0%	243.36	1	0.0%	243.36	20.00	426.22	
						100%	111%			110%	100%	170%		100%	161%				115%	139%	
2005	16.0	X52	W	B	32	123.94	31.68	12.78	0.00	22.00	3.00	311.88	101.06	20.0%	415.96	1	0.0%	415.96	23.00	629.35	
2000	16.0	X52	W	B	32	123.94	28.65		0.00	20.00	3.00	183.47	71.81	20.0%	258.28	1	0.0%	258.28	20.00	450.87	
						100%	111%			110%	100%	170%		100%	161%				115%	140%	
2005	16.0	X52	W	B	34	131.87	33.66	13.58	0.00	22.00	3.00	332.59	107.33	20.0%	442.88	1	0.0%	442.88	23.00	667.81	
2000	16.0	X52	W	B	34	131.87	30.44		0.00	20.00	3.00	195.62	76.19	20.0%	274.80	1	0.0%	274.80	20.00	477.11	
						100%	111%			110%	100%	170%		100%	161%				115%	140%	
2005	17.5	X52	W	B	36	152.48	35.62	14.36	0.00	22.00	3.00	351.34	115.75	20.0%	470.10	1	0.0%	470.10	23.00	717.56	
2000	17.5	X52	W	B	36	152.48	32.23		0.00	20.00	3.00	206.97	82.99	20.0%	292.99	1	0.0%	292.99	20.00	517.26	
						100%	111%			110%	100%	170%		100%	161%				115%	139%	
2005	17.5	X52	W	B	38	161.19	37.60	15.16	0.00	22.00	3.00	350.11	117.81	20.0%	470.93	1	0.0%	470.93	23.00	729.88	
2000	17.5	X52	W	B	38	161.19	34.02		0.00	20.00	3.00	218.82	87.41	20.0%	309.23	1	0.0%	309.23	20.00	544.44	
						100%	111%			110%	100%	160%		100%	152%				115%	134%	
2005	17.5	X52	W	B	40	169.83	39.60	15.96	0.00	22.00	3.00	379.27	125.93	20.0%	508.21	1	0.0%	508.21	23.00	778.60	
2000	17.5	X52	W	B	40	169.83	35.81		0.00	20.00	3.00	237.06	93.14	20.0%	333.18	1	0.0%	333.18	20.00	578.83	
						100%	111%			110%	100%	160%		100%	153%				115%	135%	
2005	17.5	X52	W	B	42	178.47	41.58	16.75	0.00	22.00	3.00	382.91	129.94	20.0%	514.85	1	0.0%	514.85	23.00	796.65	
2000	17.5	X52	W	B	42	178.47	37.60		0.00	20.00	3.00	255.27	98.87	20.0%	357.14	1	0.0%	357.14	20.00	613.22	
						100%	111%			110%	100%	150%		100%	144%				115%	130%	
2005	17.5	X52	W	B	44	187.11	43.58	17.56	0.00	22.00	3.00	374.39	126.53	20.0%	506.92	1	0.0%	506.92	23.00	800.17	
2000	17.5	X52	W	B	44	187.11	39.40		0.00	20.00	3.00	267.42	103.39	20.0%	373.81	1	0.0%	373.81	20.00	640.31	
						100%	111%			110%	100%	140%		100%	139%				115%	125%	
2005	17.5	X52	W	B	46	195.75	45.52	18.36	0.00	22.00	3.00	391.40	135.21	20.0%	529.61	1	0.0%	529.61	23.00	834.24	
2000	17.5	X52	W	B	46	195.75	41.19		0.00	20.00	3.00	279.57	107.90	20.0%	390.47	1	0.0%	390.47	20.00	667.41	
						100%	111%			110%	100%	140%		100%	136%				115%	125%	
2005	19.1	X52	W	B	48	222.78	47.50	19.16	0.00	22.00	3.00	410.11	144.91	20.0%	556.02	1	0.0%	556.02	23.00	892.46	
2000	19.1	X52	W	B	48	222.78	42.98		0.00	20.00	3.00	292.94	116.34	20.0%	412.28	1	0.0%	412.28	20.00	718.03	
						100%	111%			110%	100%	140%		100%	135%				115%	124%	

NOTES

Prod = Product (b = brine, c = chemical, w = water)
WT = Wall thickness
Spec = Grade/Specification
S = Seamless
W = Welded
A = Above ground
B = Below Ground
Diam = Diameter in inches
E/M Pipe = Bare pipe cost
Coat = Coated (internally or externally)
Ins = Insulation
Legals = Legal costs
CP = Cathodic Protection
Basic Const = Basic construction cost
D & A = Design & Administration cost
"OTH" or "MAH" = Major Accident Hazard or otherwise
ERC = Estimated Replacement Cost
ARC = Adjusted Replacement Cost
RV = Rateable Value
RE = Rateable equipment associated with pipeline
BVS = Block Valve Stations

An Invitation to supply pipeline construction cost details

Valuation Office Agency
Non-Domestic Rating
Request for Information

This notice is served on you under Paragraph 5 of Schedule 9 to the Local Government Finance Act 1988, as amended.

I believe that the information requested will assist me in carrying out functions conferred or imposed on me by or under Part III of the 1988 Act (concerning non-domestic rating), including compiling a new Rating List or maintaining an existing Rating List.

Valuation Officer's signature

If any part of either address is wrong, please correct it.

About this Notice

This is a notice for non-domestic rating purposes for the property shown above.
You are requested to supply the information specified in this notice by completing, signing and returning it to me within 56 days from the date of receipt by you. A pre-paid envelope is enclosed.

How to fill in this form

Throughout this form

- *the property* means the property/plant and machinery shown above
- where a date is requested, please give the exact date if you know it. If you do not know the exact date, please just fill in the month and year boxes.

If you need more space for any question you can continue on a separate sheet of paper. Please make sure that any extra sheets you use

- clearly show the relevant question number(s)
- are signed and dated, and
- are securely attached to this form

Who has sent you this form

This form has been sent to you by the Valuation Officer.

Valuation Officers

Valuation Officers work for the Valuation Office Agency (VOA) and are responsible for setting the Rateable Values of all business premises in England and Wales.

The local authority calculates your rates based on the Rateable Value. The VOA is an impartial body, separate from the local authority.

Valuation Officers set new Rateable Values every five years, and will do so again in 2005.

Why your information is important to us

Pipeline valuations are by reference to the Contractors Basis of Valuation to arrive at the estimated replacement cost of a pipeline and rely on the collection and analysis of cost evidence from the construction of new pipelines.

The more information we have the more certain we can be that our assessments are correct.

YOU MAY BE PROSECUTED IF YOU MAKE FALSE STATEMENTS, OR BE LIABLE TO PENALTIES IF YOU DO NOT COMPLETE AND RETURN THIS FORM WITHIN 56 DAYS.

If you need help with this form or need an enlarged copy, please phone, e-mail or write to the Valuation Officer at the address opposite.

The Valuation Office is an Executive Agency of the Inland Revenue

Part A - Please give the following details:

1 What is the route of the pipeline?

2 Who is the present operator of the pipeline?

3 What is the material carried by the pipeline?

4 What was the date of installation?

Part B - Pipeline Specification

Describe details of pipeline specification including length, pipe material, protection and incidence of valve and pumping stations *(continue on page 4 if necessary)*:

Part C - Crossings

State the number and types of road, rail and river crossings *(continue on page 4 if necessary)*:

Part D - Cost details

Give details of the cost of the pipeline:

Basic pipe and coatings

Bare pipe - as supplied by the manufacturer	£
Protective coatings	£
Special protective coatings	£

Construction

Preliminaries	£
Pipe deliveries to site from ex site	£
Pipe handling and stringing on site	£
Right of way-Preparation and reinstatement	£
Excavation of trench, granular bed and backfill	£
Pipelaying and welding	£
Coating to bends on site	£
Pipe machining short lengths	£
Pipe testing and weld inspections (pressure)	£
Pipe inspection (clerk of works etc.)	£

Special Costs

Dayworks	£
Land drainage	£
River, road and rail crossings	£
Special Locations	£
Advance fencing	£
Advance drainage	£
Landscaping	£
Concrete pipe supports	£
Soil survey	£
British Telecom etc.	£
Advance tree clearance	£

Legal Costs

Timber compensation	£
Easments/Wayleaves	£
Compensation to owners for damage	£
Land agents fees	£
Pipe dump rental	£
Environmental Statement	£
Solicitors costs	£

Design and Contract costs

Drawing office	£
Professional staff	£
Quantity Surveyor PQS	£
Geophysical survey	£
Miscellaneous Labour	£
Other costs	£

Part E - Route Plan

Attach a plan showing the route of the pipeline and/or environmental statement

Part F - Further Information

Any further information regarding the pipeline which you fell ought to be brought to my attention *(continue on page 4 if necessary)*:

Part G - Declaration — COMPLETE IN ALL CASES

To the best of my knowledge and belief the information I have given in this form and any attachments is correct and complete.

Signature

Name *in CAPITALS*

Date

Position

I am the Occupier ☐ Owner ☐ Lessee ☐ Occupier's Agent ☐ Owner's Agent ☐ Lessee's Agent ☐

Daytime telephone no. Email address

Part H - Contact details

If you would like us to either contact you at a different address or contact someone else if we have any queries about this form, please give details here

Name in *CAPITALS*

Daytime telephone no. Email address

Correspondence address

Post code

Thank you for completing this form. Please now return it in the enclosed envelope

The Valuation Office Agency is an Executive Agency of the Inland Revenue, which is a Data Controller under the Data Protection Act. We hold information for the purposes of taxes and certain other statutory functions as assigned by Parliament. The information we hold may be used for any of the Valuation Office Agency's functions.

We may get information about you from others, such as other government departments and agencies and local authorities. We may check information we receive from them and also from you, with what is already in our records.

We may give information to other government departments and agencies and local authorities but only if the law permits us to do so, to check the accuracy of information, to prevent or detect crime and to protect public funds.

Further Information or remarks (if any)

Please provide further details here if there is insufficient room for you to complete answers to any of the foregoing questions or if any question(s) require further explanation or clarification

Question No:	Details:

Please complete the declaration on Page 3 before you return this notice to me