11th 3rd party appeal

PL16.207212

APPEAL BY

BRID AND TERESA MC GARRY

FURTHER APPEAL FORM

SECTION 26		SECTION 37	

Appeal No: PL 207212

Lodged: 26/5/04 **Case Type:** 03

O.H. Request Date: _____ **P.A. Decision Date:** _____

Appellant: Brid & Teresa Mc Garry

Adress/~~Agent~~: Gortacragher, Rossport, Ballina, Co Mayo

Mr. Cranwell

1. Acknowledge with: BP01 HM

Merge:

(1) psplit	☐	(4) omitdoc	☐
(2) msplit	☐	(5) overpay	☐
(3) revplan	☐	(6) xmas	☐

2. Issue appeal to:

(a) P.A: _____

(b) Applicant: _____

(c) Other: _____

3. Return appeal with: _____

4. Return to prepare exp.ltr: _____

Comments:

Please insert date of cross circulation on control sheet

EO: K Doherty **AA:** Ron Cranwell

Date: 1/6/04 **Date:** 3/6/04

J:abp\forms

Gortacragher,
Rossport,
Ballina,
Co. Mayo.

AN BORD PLEANÁLA
Received: 26/5/04
Fee: €290 - Draft
Receipt No. K 52216

26 May 2004

The Secretary,
An Bord Pleanala,
64 Marlborough St,
Dublin 1.

AN BORD PLEANÁLA
TIME _____ BY _____
26 MAY 2004
LTR-DATED _____ FROM _____
PL _____

Re : PLANNING APPEAL

Dear Secretary,

We enclose herewith a bank draft to the sum of €290.00 in respect of our appeal and we also request an oral hearing i.e. (€200.00 for appeal and €90.00 for the oral hearing request) with reference to P03 / 3343.

Re : Planning Application Ref No P03/3343 (as submitted by Shell E & P Ireland Ltd on 17/12/03 and validated on 18/12/03 after regular office hours) for the proposal to construct a natural gas terminal (refinery) at Ballinaboy, Bellagelly South, Co. Mayo and to remove >450,000m3 contaminated peat slurry (>650,000m3 in P01/900 ??) to an area of cutaway peatland at Srahmore, near Bangor Erris, Co.Mayo by Bord na Mona Energy Group Ltd. on behalf of Shell E & P Ltd. Also information submitted by the developer to Mayo County Council on 11th March 2004 in response to a request by Mayo County Council for further information on 17th February 2004.

* Mayo County Council granted Planning Permission with 75 conditions on Friday the 30th April 2004 (May bank holiday weekend) to Shell E & P Ireland Ltd.

HISTORY OF PLANNING PROCESS TO DATE:

* Enterprise Energy Ireland lodged their first application to Mayo County Council on 17/11/2000 (Reference No : P00/2934) .

* Mayo County Council requested additional information on 12/01/01. The developers subsequently deferred this application without comment.

* Enterprise Energy Ireland submitted a second planning application P01/900 on the 30/04/01. The revised site was located 500m to the east of the previous application P00/2934.

* Mayo County Council granted Planning Permission with 66 conditions attached on Friday the 03rd August 2001 (August bank holiday weekend) to Enterprise Energy Ireland Ltd.

Planning application P01/900 was appealed to An Bord Pleanala. An oral hearing was held in February 2002 and a subsequent oral hearing was held in November 2002. An Bord Pleanala's Senior Inspector Mr Kevin Moore and Dr David Ball (an eminent hydrogeologist) recommended that the application be refused on a number of grounds including the high risk posed by the transfer of peat from one location to another and the unacceptable risk to the health and safety of the local community and the general public on the public road adjoining the site. Mr Ball conducted a report on the " Assessment of the proposed development in relation to soils, peat, bedrock, groundwater and surface water and their influence on other planning issues under consideration ". The board of An Board Pleanala unanimously refused the proposed application with direct reference to the issue of peat removal.

The register reference is PL 16. 126073.

Enterprise Energy Ireland (renamed Shell E & P Ireland Ltd) submitted a third planning application P03/3343 to Mayo County Council on the 17/12/03. They did not opt for a judicial review of P01/900 which was highly significant. Planning application P03/3343 is conceptually flawed in the extreme from a planning, engineering, health and safety, environmental, legalistic and academic perspective.

GROUNDS OF APPEAL:

Our concerns are as follows:

1. Health & Safety Aspects

Background information :

The " SEVESO II " Directive (Council Directive 96/82/EC of 9th December 1996 on the control of major accident hazards involving dangerous substances aims at the prevention of major accidents and the limitation of their consequences for man and the environment, with a view to ensuring high levels of protection throughout the Community in a consistent and effective manner.

Article 12 of the Seveso II Directive requires that the objectives of preventing major accidents and limiting their consequences be taken into account by the Member States in their land use policies and/or other relevant policies. This requirement recognises that planning policies can be directed towards the need, in the long term, for appropriate distances between establishments covered by the Directive and residential areas, areas of public use and areas of particular natural sensitivity or interest.

The Land use planning provisions within the Seveso II Directive reflects the Council of Ministers request, following incidents at Bhopal (1984) and Mexico city (1984), that the land use planning implications of limiting the consequences of major accidents should be taken into account in the regulatory process. The incidents at Bhopal and Mexico city clearly showed how the consequences of an accident can become much worse when there are residential areas in the vicinity. The Seveso accident (1976) itself involved the evacuation of over 600 people and as many as 2000 people were treated for dioxin poisoning.

Land use planning provisions within Seveso II apply to all establishments covered by the Directive. The text of Article 12 of the Directive requires that Member States must ' take into account ' the objectives of preventing major accidents and limiting their consequences. The context is elaborated by Recital (22) which states,

' ***Whereas, in order to provide greater protection for residential areas, areas of substantial public use and areas of particular natural interest or sensitivity, it is necessary for land use and/or other relevant policies applied in the Member States to take account of the need, in the long term, to keep a suitable distance between such areas and establishments presenting such hazards and, where existing establishments are concerned, to take account of additional technical measures so that the risk to persons is not increased;'***

Article 12 provisions on land use planning apply to all Seveso II establishments, that is, establishments covered by Article 7 (' lower tier ') and establishments covered by Article 9 (' upper tier ').
The objective of ' *appropriate distances between establishments covered by this Directive and residential areas, areas of public use and areas of particular natural sensitivity or interest* ' are implemented through policies which require consideration of the compatibility of potential uses of neighbouring land areas. These policies can be implemented through assessing proposals for new or modified land usage, which includes consideration of possible new Seveso II establishments , the modification of existing establishments or developments in the vicinity of existing establishments .In this way proposed developments which are not compatable with existing land usage can be avoided.

THE LEGAL REQUIREMENT WHICH MUST BE IMPLEMENTED AS A RESULT OF SEVESO II IS THAT TECHNICAL ADVICE ON THE RISKS ARISING FROM THE ESTABLISHMENT (' S) MUST BE AVAILABLE WHEN PLANNING DECISIONS ARE TAKEN.

The text in Article 12 of the Directive refers to ' additional technical measures ' which is particularly relevant to the assessment of the possible land use planning implications of modifications. The Directive requires ' taking account of the need for ...additional technical measures in accordance with Article 5 of the Directive so as not to increase the risks to people '. Article 5 ***requires the operator*** to take all measures necessary to prevent accidents and to limit their consequences. In this context , an assessment of the land use planning implications of a proposed modification will include consideration of any related additional technical measures intended to prevent any increase of the risks to people.

New developments in the vicinity of existing establishments.

Article 12 requires controls on new developments such as transport links, locations frequented by the public and residential areas in the vicinity of existing establishments, where the siting or

developments are such as to increase the risk or consequences of a major accident. Member states ensure through their land use policies that the procedures take account of the need in the long term ***to maintain appropriate distances*** between establishments covered by the Directive and residential areas, areas of public use and areas of particular natural sensitivity or interest.

Planning authorities must be able to identify all Seveso establishments in their area so that the appropriate controls can be exercised.

In summary , if a development is proposed, the planning authorities must be able to demonstrate that:

- the location of all Seveso establishment's is known;
- there is a clear understanding of when a development is considered to be ' in the vicinity ' of a Seveso establishment;
- there is a clear understanding of the type of developments for which advice must be taken on the risks of major accidents.

We wish to object to the building of the gas terminal (refinery) on a number of grounds which include the following:

The Seveso II Directive applies to the transport of dangerous substances in pipelines inside the establishment(s) therefore the upstream pipeline containing raw impure WET gas at elevated pressure(s) , the control umbilical and discharge pipeline etc. are within the remit of the Directive and thus health and safety aspects with respect to this reality have not been taken into account by Mayo County Council and the Health & Safety Authority (now the National Authority for Occupational Safety & Health). At the last oral hearing (November 2002) conducted by An Bord Pleanala the N.A.O.S.H. report prepared by Mr John Colreavy stated on page 5 that " The Directive does not apply to pipelines or the road transport of dangerous goods outside the boundary of the establishment " . He did not fully assess the health and safety implications in relation to the upstream pipeline section within the boundary as was his remit and what was assessed was based on DRY not WET gas.
In reality as the term " establishment " refers to the whole area under the control of the operator and as the Corrib Field is to be controlled and operated by Shell E&P (as operator) and partners etc. this upstream section of pipeline from the landfall to the proposed terminal (refinery) should fall within the establishment. Please refer to **Appendix A** (copy of submissions presented to Mayo County Council re: P03 / 3343).

Our residence is located in the village of Gortacragher which is sandwiched between the proposed terminal (refinery) and the unprecedented raw unprocessed gas upstream pipeline which will contain associated contaminants and impurities and process chemicals coming in under well head unregulated pressure from the well(s) offshore in the Corrib Field to the Terminal (Refinery). The presence of Methanol which is a highly flammable substance and unknown corrosion inhibitor (the latter required for ' sweet DRY gas '???? according to the E.I.S.'s) presents an unacceptable health and safety hazard. These substances will be present in the incoming gas stream and will be conveyed out to the well('s) via a parallel umbilical system from the terminal (refinery). An electrical cable system (alternating current) will also run parallel to this pipeline which once again is of extreme

major concern. The proposed onshore pipeline and associated infrastructure as described will also have a discharge pipe attached which is to discharge into Broadhaven Bay. This unprecedented reality is to be laid in deep peat land (with seams of associated doib) which is highly acidic in nature and is actually bottomless in areas along the proposed route. Our health and safety is in immediate danger as this is unprecedented as outlined in the last An Bord Pleanala hearing re. P00 / 900.
We note that the Environmental Impact Statements prepared for the developer and associated literature state that the length of the upstream pipeline is 8km when it is in actual fact 9km. This pipeline is proposed to enter the terminal(refinery) at the ' pig receiver ' and on to the ' slug catcher ' at Ballinaboy, in the townland of Bellagelly South within the Coillte site.
Because the upstream pipeline and associated terminal (refinery) cannot be mutually exclusive of one another we feel that we are obliged to treat the overall process as a whole even though the Health & Safety Authority (now the National Authority for Occupational Safety & Health) pertain to only have jurisdiction over the section of upstream pipeline (and B.G. E. export pipeline) contained within the perimeter fence of the Terminal (refinery).

We note the following:

We refer to the '' Corrib Field Development Planning Dossier – Terminal '' dated the 14/11/2000 and refer you to the inlet facilities section whereby it is stated that the ' pig receiver rated at pipeline design conditions of 345 Bar g ' and ' slug catcher ' rated at 150 Bar g '.
We have been informed in the E.I.S.s to date that the pressure in the upstream pipeline would be 150 Bar g which alone is highly unusual. It is our opinion now that the pressure may more than likely be in the region of 345 Bar g as the ' pig receiver ' has a design specification for this.

We refer you to the '' Bellanaboy Bridge Terminal Environmental Impact Statement '' prepared for Enterprise Oil re: P00 / 2934 **(Appendix B)** whereby it states under section 4.9.2. ' Description of the umbilical ' among other details, the following.

* electrical power supply levels of approximately 4kVA;
* low pressure hydraulic fluid supply of 210 bar g to the subsea wells;
* high pressure hydraulic fluid supply of 610 bar g to the subsea wells;
* methanol injection s supply of up to 150 bbl/d (1 m3/hr) for well start-up/shutdown; and
* methanol injection supply of up to 450 – 550 bbl/d (3 – 3.7 m3/hr) for continuous injection at either the satellite wells or the subsea manifold as required.

' There will also be a requirement to leave cores within the umbilical free for future expansion of the system if that becomes necessary '.

As outlined above it would appear that the upstream incoming pipeline will be in the region of **345 bar g** & there will be low pressure hydraulic fluid supply of **210 bar g** to the subsea wells, and high pressure hydraulic fluid supply of **610 bar g** to the subsea wells. Add to this copious amounts of methanol injection's, (1 m3/hr) for well start- up / shutdown; and (3 – 3.7 m3/hr) for

continuous injection at either the satellite wells or the subsea manifold as required. Corrib will have one of the longest umbilical lengths in the world (9 km in length on land).

As this process will be controlled from the terminal (refinery) it is clear that one aspect cannot exist or be mutually exclusive without the presence of the other and thus this overall reality has not been fully assessed as a unit (project splitting) by the N.A.O.S.H. (formerly H.S.A.).

Referring to Appendix A we refer you to a submission made on the 01/04/04 to Mr Iain Douglas (S.E.P.) " Re: Planning Application Ref No P03 / 3343 as submitted by Shell E & P Ireland Ltd " and refer you to page 2 of 5 ' Referring to Technical Condition 22 we quote the following " Duration, likely frequency and noise associated with flaring of both the HP and LP flares should be kept to a minimum in accordance with best industrial practice ". The Department of the Marine & natural resources has no jurisdiction over the proposed terminal (refinery) and their jurisdiction over the upstream pipeline(s) is highly questionable....."

Will these ' flares ' require planning permission ?

We refer you to **Appendix C** (gas terminal development description submitted to Mayo ~~County~~ Council) and refer you to the following :

* It states that the validation date was on the 17/12/03. The actual validation date was on the 18/12/03 after regular office hours.

* On page 2 it refers to ' an Onshore Terminal Termination Unit (OTTU) measuring 2 m long by 1m wide by 2.5 m high, approximately ', this was not included in the previous application re: P01 / 900.

We refer you to the reality that an isolation valve is proposed to be constructed at the landfall at (Dooncarton). Is this what the Onshore Terminal Termination Unit (OTTU) refers to ? (in the singular).
We refer you to **Appendix D** whereby it states under section 5.5 Umbilical (Terminal E.I.S. with reference to P00 / 2934) among other things the following: " This umbilical configuration will require each of the Onshore Umbilical System elements to be manufactured as 4,350 m long units (approximately), with the inclusion of a single in-line joint / termination unit located immediately before the second river crossing on the northern bank of the Glenamoy river (see attached map)" ?).

This statement refers to our private lands when the pipeline route was proposed to traverse through our private forestry plantation (Enterprise Energy Ireland personnel entered without consultation or authorisation, and we were informed after trespassing had occurred that they received authorisation from Coillte to enter, but when requested to produce same did not do so). Enterprise Energy Ireland then decided to alter the route and traverse through our reclaimed fields without any consultation and more importantly without any assessment of the ground suitability, range of habitats present on site, type of underlying ground rock, archaeology assessments etc. Please refer to Appendix A, submission to Mr Iain Douglas S.E.P. page 3 of 5 ' We refer you to the proposal to route a large section of the upstream pipeline and misc. through our private lands. This proposed pipeline has three 90 degree turns along this section of the route (Appendix F). This is unprecedented for highly pressurised gas, as explained previously.....'
As an isolated valve station is proposed to be constructed at Dooncarton, and as ' a single in-line joint / termination unit ' is proposed to be built presumably on our lands before the crossing of the

Glenamoy river, and as this installation is included in the application for planning permission we feel that the health and safety aspects with respect to this reality have not been taken into account by Mayo County Council and the Health & Safety Authority (now the National Authority for Occupational Safety & Health) and the Petroleum Affairs Division ?

As these installations represent further establishments (in the plural (1) isolated valve station, (2) single in-line joint / termination unit) under the control of the developer (only one seems to have been included in planning application whereby permission was granted, does this deem the application invalid ?) these should also be assessed under the Seveso II Directive as there would be an elevated risk of leaks and thus explosions at these joint locations . The reality is that this unprecedented pipeline should not be allowed to cross Sruwaddacon Bay twice (plus river crossing between Gortacragher and Rossport which is tidal) because the bay has a very strong tidal current thus this elevates the possibility of erosion and fatigue factors occurring.

The legal requirement which must be implemented as a result of Seveso II is that technical advice on the risks arising from the establishment(s) must be available when planning decisions are taken.

As these installation (s) have been included in the application for planning permission which was granted by Mayo County Council we feel that the effect of these structures on the surrounding environment should be assessed with respect to Broadhaven Bay (c Special Area of Conservation) and Sruwaddacon Bay (c Special Protection Area) and the Glenamoy river which is a key salmonoid river. The " Little White Egret " has returned to Sruwaddacon Bay and its feeding area is located along the proposed crossing point at the Glenamoy river whereby it enters the bay. We refer you to the Offshore E.I.S. 7.3.3.1 where it is stated in relation to the South shore of Upstream Crossing Point (i.e. Crossing Three) that " The shore at this point was backed by dense forestry on top of a 2-3m ' ***cliff*** ' of peat ". This proposed crossing will involve traversing deep peatland with associated disturbance and upheaval of mature coniferous trees with the direct displacement of trees, peat and associated siltation plus the leaching of associated fertilizers such as rock phosphate and nitrogen directly into the Glenamoy river and Sruwaddacon Bay. This reality cannot be avoided ! The removal of mature coniferous trees to allow for the proposed upstream pipeline will also present visual implications with a direct scar on the landscape from Gortacragher and Rossport and Leenamore / Aughoose directions . Notwithstanding all this an established ' Heronery ' also exists at this location where the proposed pipeline is to traverse .

We refer to Appendix A re: a submission made on the 01/04/04 to Mr Iain Douglas (S.E.P.) " Re: Planning Application Ref No P03 / 3343 as submitted by Shell E & P Ireland Ltd " and refer you to page 2 of 5 ' We believe that Technical Condition 2 (" the pipeline route is to be fixed near inhabited buildings to ensure that a minimum proximity distance of 70 meters is achieved ") cannot be complied with because there are a number of inhabited houses within the 70 meter zone along the upstream route'. This upstream pipeline is also proposed to cross a public road in Rossport (it also crosses a private road to a residence, and two roads to the shore frequently used by the public) and is to run parallel to our private road and be within 70 meters of a public road in Gortacragher. It is also proposed to cross a public road in Leenamore/Aughoose before it reaches the terminal (refinery). Who will take responsibility for protecting the health and safety of residents and road users ?

Who will take responsibility for the health and safety of residents ? Our occupation is farming thus we spend the majority of our day working outside on the land and attending to animals located in the fields proposed for this upstream route. How can our safety and our animals safety be guaranteed ? , we will not in practice be able to remain at a distance of 70 meters from the upstream pipeline

(70 meters is totally inadequate anyway as this pipeline is unprecedented). Why have the N.A.O.S.H. (National Authority for Occupational Safety & Health) disregarded our health and safety? We refer you to the word Occupational which by definition should mean the protection of workers with respect to their occupation. This has not happened in our case. It would appear that the Petroleum Affairs Division (P.A.D.) are to have jurisdiction with respect to being the regulatory authority over this section (highly questionable ?). It is significant that they did not make a submission on the planning application re: P03 / 3343.

We refer to a report which was presented at the last oral hearing with respect to P01 / 900 called " Corrib Gas Pipeline Project – Report on Evaluation of Onshore Pipeline Design Code " prepared by Andrew Johnston (no credentials or experience qualifications associated with same? with respect to the report) dated the 28th March 2002, submitted to the Department of the Marine and Natural Resources for assessment re the upstream pipeline and quote the following from page 11 under the heading 4.2
Key Aspects of the Corrib Gas Pipeline " The circumstances include the fact that the pipeline has an unusually high design pressure and transports unprocessed wellfluid which is a WET GAS and therefore corrosive when combined with carbon dioxide (CO2) in the gas ".
It is fundamental to note that at the last oral hearing re: P01 / 900 the Health & Safety Authority (now the National Authority for Occupational Safety and Health) derived their overall assessments with respect to potential impacts based on DRY not WET gas. WET GAS is corrosive and usually contains hydrogen sulphide. The whole planning application would need to be modified to reflect this reality, and Mr John Colreavy admitted that the operators would have to install new equipment to remove the hydrogen sulphide from the gas if it was found to be present. The Andrew Johnson report is damning with respect to the upstream section even though he was supplied with limited information and it is highly significant that Mr Johnson did not make a direct reference to the stability of pipelines in peat and potential for landslides and bogbursts (it is as if the relevant information with respect to peat aspects have been omitted on purpose). The Department of The Marine based their highly questionable pipeline consent (not produced, or on record) on the basis of this commissioned report.

We refer you to the oral hearing with respect to P01 / 900 which took place in November 2002 and wish to highlight the following aspects with respect to the Health & Safety Authority's (now the National Authority for Occupational Safety & Health) overall assessment with respect to the terminal (refinery) and the upstream pipe within the perimeter fence. The N.A.O.S.H. report prepared by Mr John Colreavy stated on page 5 that " The Directive does not apply to pipelines or the road transport of dangerous goods outside the boundary of the establishment " . He did not fully assess the health and safety implications in relation to the upstream pipeline section within the boundary as was his remit and what was assessed was based on DRY not WET gas. As outlined above this revelation throws the whole planning application into disrepute.

We note the following:

Mr John Colreavy in his assessment did not assess the likelihood of an explosion at the terminal (refinery) , or/and associated pipeline (upstream and export) precipitating a landslide (s) in the area. He did not assess that during the construction stages alone that proposed blasting could lead to landslides occurring in the area (the introduction of 2000 piles on site would need to be assessed re P03 / 3343). After the Dooncarton series of landslides, which consequently as a result of displacement flooded the Bellanaboy and Leenamore river's, this is very much a reality in this very *sensitive* area. The Seveso II Directive applies to residential areas, areas of substantial public use and areas of particular natural interest or *sensitivity*.

The landslides which occurred in Dooncarton created immense damage in the area (**Appendix E**). The upstream pipeline route was originally proposed to traverse over Pullathomas graveyards. If that route had been in place catastrophic consequences would have occurred with respect to residents and the graveyards (as it stands sacred graves were washed into the sea). The amended upstream route is proposed to traverse Sruwaddacon Bay after it reaches the landfall, if it had been in place the area and its people would also have been inaliated as the debris from the landslides resulted in an area (bottom of boreen going down to shore) being extensively cratered and fractured which ran in a perpendicular fashion towards the proposed pipeline and this reality and other associated displacements would have sheared the pipeline. Please refer to **Appendix F** (map of Broadhaven Bay which demonstrates this reality).

What regulatory authority is going to mitigate against the proposed blasting in Rossport which is located directly across the bay from Dooncarton (the Geological Society of Ireland have referred to ' fault lines ' on Dooncarton mountain and in Rossport where this proposed blasting is to take place).The reality of the situation is that blasting in Rossport will have an effect on Dooncarton mountain which is highly unstable and the risk factor associated with the location of the upstream pipeline section will also create a health and safety hazard for residents in the area.

If a landslide (s) occurred at or around the site and the wider area, the Aughoose/ Lenamore and Glenamoy rivers and Sruwaddacon Bay would be displaced with debris and peat and thus residential houses would be damaged and peoples health and safety would be put at risk. The same reality would be conveyed to Carrowmore Lake which would also be displaced resulting in catastrophic consequences with respect to water displacement and thus flooding to neighbouring properties. As Carrowmore Lake is to be the source of potable water for the maintenance of the terminal (refinery) this would be unusable as it would clog up fire jets etc. proposed to quench fires on site. The fire pond on site could also be displaced with the impact (a question arises here as to weather the water contained in it would be of a potable nature or natural rainwater whereby it would develop algae etc and clog fire equipment, at any rate the fire pond on site is completely inadequate with respect to potential eventualities which could occur with respect to fires and explosions). There is also the risk that fire quenching equipment could create the potential for pollution to occur to the local tributaries thus Carrowmore lake and Sruwaddacon Bay could become contaminated by liquid foam and other substances utilized in the fire fighting response (which once again is totally inadequate for this establishment). Runoff containing various chemicals from the site would also be contained in the waste water and these would also end up in the local catchment areas.

With respect to the last oral hearing re planning application P01 / 900 the National Authority for Occupational Safety and Health produced a report dated the 25/10/02 called the " Quantified risk assessment for the proposed gas terminal " by Mr Gareth Doran, and it stated on page 2 that

' a full-bore or partial rupture of a pipe or storage vessel involving natural gas, if not immediately ignited will lead to the formation of a flammable gas cloud which will drift downwind being diluted as it goes. If this cloud meets a source of ignition in an uncongested area a flash fire may result. **It is assumed that anyone inside the cloud will suffer fatality '.....**

' If the gas cloud encounters an ignition source in an area of congestion a vapour cloud explosion may occur '....

This is a damning statement. The village of Bunowna is the first village to be encountered downwind and it was not assessed with respect to modelling. Our own village in Gortacragher is located downwind also and it was not taken into account either. If an explosion occurred within or around the plant people's lives would be at extreme risk. This reality has not been properly assessed by the N.A.O.S.H. It was highly significant at the last oral hearing re: P01 / 900 that the N.A.O.S.H. produced a map entitled ' the consultation distance assigned to proposed Corrib Terminal ' , on closer inspection it was noted that the internal circle i.e. at the 500m distance was not taken from the ' southern edge of the slugcatcher ' but further east towards the central point of the terminal footprint. This resulted in a different scenario arising whereby the modelling assessments moved further away from residential houses in the Ballinaboy area and of course the villages downwind were omitted all together. It was also highly significant that this feature appeared to be the common denominator with respect to the Det Norske Veritas report for the developer thus inaccurate modelling assessments were conducted with respect to risk potential.

Chimney fires from residential houses were not taken into account either, a spark could ignite a vapour cloud.

The N.A.O.S.H. did not assess the reality that the terminal (refinery) buildings were to be of a blast proof construction and that this reflected the risk society imposed on residents in nearby villages and beyond.

The N.A.O.S.H. did not fully assess the reality of potential explosions causing burst ear drums with respect to residents.

The reality of the situation is that the only factor remaining constant is the fear of the unknown and how residents living in the area will be in constant fear passing through along the R314 and secondary roads because of the potential of an explosion to occur at the plant and/or associated pipelines positioned under roads.

The N.A.O.S.H. did not take into account * Condensate and Methanol vapour interactions in their risk analysis. They did not properly assess interactions between Methane and Methanol, Methane and Condensate, unknown corrosion inhibitor ? interactions.
These vapour mixtures would result in catastrophic vapour cloud like explosions which would result in the flattening of trees on and off site .
They did not properly assess the reality of a bore hole in upstream pipeline inside the perimeter fence and hence pressure building up, and the potential for an explosion and how this would lead to hot chunks of metal from the blow out hitting off other equipment on site such as Methanol storage tanks, and Nitrogen storage tanks and Condensate storage tanks, and unknown corrosion inhibitor storage tanks and other sections of pipeline and piperacks (" Domino effect "). As the N.A.O.S.H. are of the opinion that their remit is only within the perimeter fence, how would they assess the impact of the upstream pipeline section exploding beyond the perimeter fence and yet activated inside the fence and vice versa ?

The N.A.O.S.H. did not properly assess the significance of a forest fire occurring, did not take into account the elevated flare stack being in close proximity to trees. The reality that a fire could be started by a third party outside the perimeter fence in the Coillte property was not assessed either.

The N.A.O.S.H. with respect to P01 / 900 went on a visit to the Bacton terminal (refinery) in Norfolk, England. The plant was closed during their visit due to an industrial accident. During the oral hearing it was brought to our attention that Bacton was an ' upper tier ' site re: the inventory.

It is significant that the proposed Ballinaboy gas terminal (refinery) is to be assessed as a ' lower tier ' site when it should be assessed as an ' upper tier ' establishment.
It was also brought to our attention at the last oral hearing re: P01 / 900 that terrorist threats were made to Bacton terminal . This reality was not taken into account by the N.A.O.S.H. in their assessment. We refer to **Appendix G** under the heading ' Terrorist fears threat to Mayo gas pipeline ' and quote the following " I am told by experts in the field that there is no international precedent for such a lengthy pipeline from the shore to the processing point. The very existence of that pipeline in itself poses quiet a risk for the area given possible blockages or other damages that can be caused to it. However, in Iraq at the moment, some of the targets most difficult to protect against terrorist activity are those very pipelines. "Yet in this country , for reasons about which I am not very clear, we cannot put a processing plant at a landfall elsewhere or provide offshore processing facilities. I am genuinely concerned that, if someone were sufficiently demented and wished to target this country's offshore facilities, that person would not have to go offshore. " He or she could look at those 9km of pipeline, which would be almost impossible to guard, and decide that a small device there would do incredible damage to this country " .

We refer to Appendix A and to a submission made on the 01/04/04 to Mr Iain Douglas (S.E.P.) " Re: Planning Application Ref No P03 / 3343 as submitted by Shell E & P Ireland Ltd " and refer you to page 2 of 5 ' We refer you to Appendix D – A critique of the operational methodology and process components at the proposed Ballinaboy Bridge Gas Terminal, County Mayo, Eire by Mr Peter Rossington, B.Sc (Hons) M.R.S.C. He states on page 3 " The EIA admits that around year nine of the proposed plant's twenty year lifespan mechanical refrigeration will have to be installed.... For anybody not familiar with gas processing , the installation of a major chilling plant is not a simple operation. Major construction will be required at the Terminal in year nine, the extent of which will nearly equal the major construction proposed. This construction will once again result in large scale disruption to the life of local residents. If it is taken into account that mechanical refrigeration is a more efficient processing technique than adiabatic expansion, it will be required in year nine of the terminals life anyway and local residents should be inconvenienced as little as possible by the proposed terminal, then Enterprise Oil should incorporate mechanical chilling into the current design of the Terminal " Also on page 3 he states the following " the EIA makes reference to the use of propane as the refrigerant medium in the proposed mechanical chilling system to be installed in year nine. Whether a refrigerant system is installed either in year nine, or at the beginning when it should be present, it is surprising to see that propane is being considered as the chilling medium. Propane is a highly flammable gas that by its presence alone causes increased risk for local residents and terminal operators alike....

' This development is not in compliance with Seveso II Directive (Mechanical Refrigeration implications and the use of Propane have not been addressed) with respect to health and safety criteria whereby the developer must supply and include all the types and cumulative quantities of the anticipated products / byproducts used in the gas processing industry. Therefore the legal requirement which must be implemented as a result of Seveso II is that technical advice on the risks arising from the establishment must be available when planning decisions are made'.

' As this mechanical refrigeration unit will require major construction this will also involve the removal of colossal amounts of peat and doib with associated siltation and other negatives such as disruption to local residents, effects on the road structure etc. Where will this displaced peat and doib be removed to ? This development will also present problems from a visual point of view with the further removal of trees due to the health and safety criteria and also the interaction of other chemical processes on site. According to the Seveso Directive these and other questions must be addressed NOW '.

We refer to **Appendix H** and to a letter from the Health and Safety Authority (N.A.O.S.H.) signed by Mr John Colreavy (Process Industries Unit) dated the 29th April 2004 and quote the following under

e) For the purpose of control on future development:

' Should there be any proposed amendments to the permitted scheme which relates to the control or impact of major accident hazards (as defined by Seveso II Directive) then that amendment shall not proceed until the agreement of the H.S.A. has been obtained.
Also the Authority considered the establishment to be the terminal footprint (area within the security fence where the hazardous substances are processed and stored) '.

As stated above re: the Mechanical Refrigeration Unit, we are aware that it will be required in year 9 thus it will have to form an integral part of the overall establishment as there will be insufficient adiabatic expansion and cooling to meet dew point requirements as the wells are used and become depleted.

' This development is not in compliance with Seveso II Directive (Mechanical Refrigeration implications and the use of Propane have not been addressed) with respect to health and safety criteria whereby the developer must supply and include all the types and cumulative quantities of the the anticipated products / byproducts used in the gas processing industry. **Therefore the legal requirement which must be implemented as a result of Seveso II is that technical advice on the risks arising from the establishment must be available when planning decisions are made'.**

This has not been done in our opinion.

As we are aware of its existence then it follows that the installation must be included in assessments with respect to the N.A.O.S.H.
We are also aware that the upstream pipeline is under the remit of the operator and as such should be included and assessed by the N.A.O.S.H. as part of the establishment with respect to the Seveso II Directive.

The associated N.A.O.S.H. report prepared for P03 / 3343 has been toned down significantly.
Please refer to the oral hearings re: health and safety aspects with respect to P01 / 900.

We refer to Appendix A and to a submission made on the 01/04/04 to Mr Iain Douglas (S.E.P.) " Re: Planning Application Ref No P03 / 3343 as submitted by Shell E & P Ireland Ltd " and refer you to page 4 of 5 ' In our previous submission re: P03 / 3343 (dated 28/01/04) we referred you to " the risk to human health with respect to contaminated buried carcasses on the Ballinaboy site, an issue which was raised at the oral hearing into the proposed gas terminal (refinery) at Ballinaboy and which is referred to in the Terminal EIS Volume 1, 8.4.6 . This matter will also apply to the area for the proposed mechanical refrigeration chiller.'

This reality was raised at the oral hearing in February 2002 re: P01 / 900 and is of immense concern as this contaminated peat is to be transported to Srahmore down stream from Carrowmore Lake which is the source of drinking water for the majority of Erris.

The Biological Laboratory which is located adjacent to the proposed site for the terminal (refinery) was not taken into account by the N.A.O.S.H. with respect to safety distances for workers.

In summary , if a development is proposed, the planning authorities must be able to demonstrate that:

- the location of all Seveso establishment's is known;
- there is a clear understanding of when a development is considered to be ' in the vicinity ' of a Seveso establishment;
- there is a clear understanding of the type of developments for which advice must be taken on the risks of major accidents.

Why has Mr John Colreavy of the Process Industries Unit signed off on all the health and safety reports to date? This issue arose at the November oral hearing re: P01 / 900 and we refer you to it. It is imperative that senior official's of the Health & Safety Authority (now the N.A.O.S.H.) also sign off on these reports so that Mr Colreavy's assessment can be supported and verified by senior management.

We refer you to **Appendix I** re: ''Proposed Gas Terminal at Bellanaboy Bridge, Bellagelly South, Co Mayo & Associated Peat Deposition Site At Srahmore and Attavally, Bangor, Co. Mayo'', '' Planning Report & Recommendation" by Mr Iain Douglas, Senior Planner, dated the 29th April 2004 and refer you to page 15 which states " Since An Bord Pleanála's decision on P01 / 900 the overall planning context has changed in two important aspects".

* The Planning Context has changed with the adoption of the Mayo County Development Plan 2003-2009.

* The introduction of the Planning & Development Act 2000, in particular Section 256 of that Act which links the EPA Act to that Act.

Since the Planning & Development Act 2000 is linked via Section 256 which links the EPA Act to that Act we wish to make observations with respect to environmental emissions which will be transferred via the chimney stacks and vents etc.from the terminal (refinery) towards our residence in Gortacragher due to the South / South west winds predominantly. We are very concerned about the resultant adverse health effects from these emissions.

Emissions will include:

- **Sulphur Dioxide**

This is formed when a fuel containing sulphur compounds is burnt. It is an upper respiratory tract, eye and skin irritant.

- **Carbon Monoxide**

Carbon Monoxide is formed when a fuel is burnt in air. It reacts with red blood cells and thus prevents them from carrying Oxygen around the body which can result in elevated blood pressure. It can also react with cytochrome P450 which consequently results in a decrease in the body's ability to deal with toxic compounds.

- **Aliphatic, Aromatic, and Polyaromatic Hydrocarbons**

Natural gas and condensate belong to a group of chemicals known as hydrocarbons. There are three subdivisions, Aliphatic, Aromatic, and Polyaromatic. Aliphatic hydrocarbons can result in the formation of other toxic chemicals such as low-level Ozone. Aromatic and Polyaromatic hydrocarbons are directly toxic, as well as acting as pre-cursors for other pollutants. Virtually all are carcinogens and mutagens.
Hydrocarbon emissions occur because condensate associated with the gas comes into contact with pipelines, vents on tanks, vents on reboilers, depressurising vents on slugcatchers, pressure relief valve vents, and leaking joints on pipelines and valves.

- **Ozone and other oxidizing compounds**

Low – level Ozone is formed when Oxygen in the air, Nitrogen oxides and Hydrocarbons react in the presence of sunlight. As gas terminals are sources of these pollutants it is not uncommon to find high levels around gas terminals. Ozone is irritating to the eyes and skin, but is most damaging to the lungs causing asthma at levels above 80µg's per cubic metre and heart attacks at levels above 100µg's per cubic metre.
Once formed Ozone can react further with Hydrocarbons and Nitrogen oxides to form oxidizing compounds such as P.A.N. (Peroxy Acetyl Nitrate). These compounds cause a variety of health effects and damage to vegetation.

- **Particulate matter**

Particulate Matter (PM2.5 & PM10) refers to solid particles dispersed in the air. In the context of a gas terminal the two most common sources are combustion devices such as flares, incinerators and reciprocating engines, which produce carbon particulates, and vents which release solid Hydrocarbons and in some cases heavy metal salts. If Condensate is burnt, it is also possible that metal particulates will be released when the fuel is burnt. The health effects of particulates depend on size and composition, if a particle has a diameter of less than 2.5microns it will enter the lungs. Most particulates produce an inflammatory response that can result in asthma and heart failure, but some such as Nickel, Vanadium, and Cadmium can induce cancer.

- **Mercaptans**

A mixture of Mercaptans is used to odourise the natural gas (B.G.E. export line only, Upstream pipeline is not odourised ?) and should be contained within the pipeline system. If odourant is spilt or leaks occur's it can get into the environment. Mercaptans are toxic at low levels and produce the same health effects as Carbon Monoxide.

- **Carbon Dioxide**

It is formed by the complete oxidation of Carbon. Its increasing density contributes to the Greenhouse effect and thus global warming. In P00 / 2934, mention of C02 release of 69,000 tonnes as opposed to 49,000 tonnes in P01 / 900.

- **Methane**

Methane is the simplest of the alkanes, commonly known as natural gas. Also leads to global warming (Global Warming Potential).
In P00 / 2934 mention of Global Warming Potential of 27,000 Cows, no mention of this in P00 / 900.

- **Oxides of Nitrogen (NOx) including Nitrogen Monoxide (NO) and Nitrogen Dioxide (NO2).**

Any chemical compound that contains only Nitrogen and Oxygen, all are gases.

Nitrogen Monoxide (NO) or nitric acid is a colourless gas released when metallic copper reacts with concentrated nitric acid. It is also produced when Nitrogen and Oxygen combine at high temperatures. On contact with air it is oxidised to Nitrogen Dioxide.

Nitrogen Dioxide (NO2) is a brown , acidic, pungent gas that is harmful if inhaled and contributes to the formation of acid rain as it dissolves in water to form nitric acid.

- **Hydrogen Sulphide**

Hydrogen Sulphide is poisonous with a characteristic smell of rotten eggs. It is contained in WET gas which is the type of gas present in Corrib according to Mr Andrew Johnston.

- **Volatile organic compounds**

Arise from leaks in connections, valves etc.

In conclusion : It is very important to note that on comparison of P00 / 2934 and P01 / 900 environmental emission figures were very significantly reduced in P01 / 900.
The reality that impure condensate is to be used as a fuel source instead of natural gas reflects a total contempt and disregard with respect to the health of residents and the protection of the environment.

We refer you to **Appendix J** " A Critique Of The Operational Methodology And Process Components At The Proposed Bellanaboy Bridge Gas Terminal, County Mayo, Eire. " , Mr Peter Rossington B.Sc. (Hons) M.R.S.C. and quote from page 1 the following ' The proposed Bellanaboy Bridge terminal incorporates some of the worst gas terminal design, that actually maximises emissions, minimises energy efficiency and, due to the need for residual construction throughout its

lifespan, maximises disturbance for local residences. Throughout the EIA, the impression is given that Enterprise Oil care greatly about the environment, but their words seem meaningless when the equipment specification is studied and the consequential emissions are considered. '
This document is damning with respect to the process equipment proposed to be incorporated into the gas terminal (refinery) at Ballinaboy.

We also have extreme concerns about the discharge pipe containing impurities including Mercury , Lead and other heavy metals plus unrecycled process chemicals such as Methanol, unnamed corrosion inhibitor (for dry sweet gas ?????) directly into Broadhaven Bay.
The water discharged from the reboilers will be contaminated with unrecycled Methanol and corrosion inhibitor and the amounts present will be dependent on the distillation column in the reboiler and the effectiveness of the treatment plant. Water from the reboilers will also more than likely contain hydrocarbons from the associated impure condensate. If these are not removed they will pass out with the discharge to sea. Mercury is a bio accumulator and thus will build up in the food chain.

Enterprise Energy Ireland Ltd (Shell E&P Ireland Ltd) insist that the discharge from the terminal (refinery)will dilute into open sea and will not be contained in Broadhaven Bay. As long term residents of this area we are fully aware that Broadhaven Bay does not open to sea .There is a naturally occurring blockage to the flow regime within the bay resembling 'a whirlpool ' and this has a centrifugal effect on the surrounding sea and its visible manifestation is a gathering of wrack elements along the shoreline. The natural tide movement and so the transport of particulate matter is landward, and thus this discharge will not dilute but will be contained in Sruwaddacon Bay (second largest current in Ireland along its length) which will result in a contaminated sump zone which will result in the termination of flora and fauna along this zone and thus associated local fishing, farming, and tourism industries will be eliminated. We are also concerned about the health effects that this reality will have on people using the bay for recreational purpose's .

Enterprise Energy Ireland discharged an oil slick in Broadhaven Bay in late September 2001 when the floating platforms were located there. This slick is still contained within the upper reaches of Sruwaddacon Bay and extends as far as the Glenamoy river to this day as it was never cleaned up by the relevant authorities who were notified of its presence. Its presence serves as a constant reminder of the reality that Sruwaddacon Bay and its river tributaries (Muingnabo and Glenamoy rivers) will be chemically contaminated if this project is allowed to proceed as planned.
Refer to **Appendix K which includes three photographs displaying this oil slick along upper Sruwaddacon and onwards towards the upper section of the Glenamoy river** .After the landslides occurred in Dooncarton various mud fractions were also washed up and travelled up via the Glenamoy river which also reflects this reality.

We refer to the ' national interest ' aspect and enclose two articles (**Appendix L**) for your reference. We quote from the Irish Examiner under the headline " The State is giving away our natural resources for nothing, says Padhraig Campbell " and ' it is time we woke up and refused to settle for just a few jobs and loads of bog slurry '.

We refer to Appendix A and our submissions made to Mr Iain Douglas S.E.P., we note that with respect to visual implications from the R314 that the mature rhododendrons will have to be removed to accommodate this development re: road widening.

We are concerned that the proposed transfer of contaminated peat (contaminated with respect to buried carcasses – refer to February oral hearing 2002, also get carbon releases due to disturbance) to Srahmore will present unacceptable risks with respect to road users. The removal of this contaminated peat to be placed downstream of Carrowmore Lake presents a health and safety hazard to consumers of the water as runoff will occur. The roads concerned are the R314, L1204, R313 . Lorries are to make 400 return trips per day which equates to a lorry crossing over a road every 45 seconds This presents very serious consequences with respect to the transportation of sick people, babies and children to Castlebar General Hospital, and/or Belmullet Regional Hospital . There will be enormous delays and the increased probability of accidents occurring as a result, as copious amounts of wet peat will have spilled over on to the roads to be frequented by residents. There will also be associated noise and emissions factors from lorrie's associated with this. This proposal presents an unacceptable health and safety risk and hazard for residents.

We refer to Appendix A and our submissions made to Mr Iain Douglas S.E.P., re P03 / 3343. We highlight the peat removal aspects with respect to Srahmore and thus refer you to them per same. Please refer to **Appendix M** which is a copy of a recorded interview by Mr Liamy Mc Nally of Mid West radio and Brid Mc Garry re: further information submissions not being on the public file in Mayo County Council re P03 / 3343 dated the 13 April 2004 (Tuesday). This type of behaviour displays a total disregard and contempt for our genuine concerns and this project should be taken on board on a more serious footing as it will have devastating consequences for the wider public.

We refer to the revised Mayo County Development Plan 2003-2009 and wish to state that this proposal for a gas terminal (refinery) cannot in any way, be compatible with the aims and objectives of the plan as the awareness of people, culture, sense of place, and the protection of the environment have not been considered in the overall, or in any real context.

We refer to **Appendix N** and refer you to an array of newspaper articles (5 in total) with direct specificity to Shell International and quote from the following :

- **The Independent**

We refer to the headings:

" Lie's , cover – ups, fat cats and an oil giant in crisis "

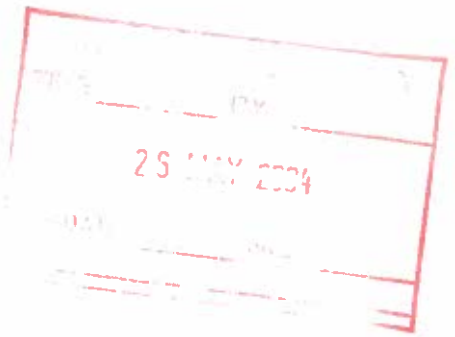
" Revealed: the bitter power battle that put Shell in the firing line "

" THE DAMNING E-MAILS "

" How a sure thing became a City liability "

" Shell's whodunit script is worthy of fiction "

" Shell hopes to draw line under fiasco of reserves "



- **Financial Times**

We refer to the headings

" Shell puts crisis blame on ' human failings' (Ex – board member was ' sick and tired about lying ' "

" Unsure of Shell ' But at least it is relearning the habit of disclosure"

" Human failings and hyperbolic e-mails "

" US regulators ready to get to grips with internal report "

" Shareholders step up calls for structural reform "

" Grim reading follows further downgrades "

- **The Guardian**

We refer to the headings:

" ' I am becoming sick and tired of lying …' The internal email that lifted the lid on one of Britain's biggest companies "

" Shell admits it misled investors "

" Trail of emails reveals depths of deceit at the heart of Shell "

" ' I'm getting sick and tired about lying' – Walter van de Vijver "

- **The Daily Express**

We refer to the headings:

" This is a truly gobsmacking tale "

" Third boss ousted as Shell admits ' we lied' " (' It's mind-blowing. It is just a catalogue of disasters for a company of their standing. ')

" Shell reserve crisis triggers shake-up "

" Memo doesn't tell full story "

- **The Times**

We refer to the headings:

" Big reservations still remain at Shell "
" Deceitful Shell ' needs ten years ' to rebuild exploration business "

" HITTING THE ROCKS "

" Unravelling of the lies and cover – up "

" Shell lied for years about state of gas and oil reserves "

" OIL SLICK OF DECEIT "

How are we to place our faith in a company who have been found to tell lies from top management down and expect reassurances with respect to our health, future generation's health and the protection of our environment with respect to pollution. This project is fundamentally flawed in the extreme from a planning, health and safety, engineering, environmental, and academic perspective and has been from inception, there is no getting away from that reality.
As explained previously we have real concerns with respect to copious emissions which will be directed by the prevailing south westerly winds directly towards our residence in Gortacragher. The upstream pipeline has been described in the An Bord Pleanala report on page 76 by Mr David Taylor on behalf of the proposer, as " it is the only one of a kind that he is aware of ". Is it any wonder then that no competent or regulatory authority has taken responsibility for it which puts the whole concept into perspective. It creates a health and safety hazard which has not existed previously. We, as residents along the pipeline route, are sandwiched between the highly pressurised incoming gas and the proposed terminal (refinery) at Ballinaboy. Because of this reality our private lands and residential properties will be totally devalued and our good health will be destroyed by this development as it is non sustainable. We ask that An Bord Pleanala refuse planning permission for this dangerous unprecedented concept.

Yours sincerely

Brid Mc Garry
Brid Mc Garry B. Agr. Sc. (Food Science & Chemistry)

Teresa Mc Garry & Family
Teresa Mc Garry & family

Encs. (Appendice's A, B, C, D, E, F, G, H, I, J, K, L, M, N)

Gortacragher
Rossport
Ballina
Co. Mayo

6438
€20 cash
28/1/04

3/3343 (as submitted by Shell E & P Ireland Ltd. on 17/12
proposal to construct a natural gas terminal (refinery)
Mayo. and to remove >450,000m3 liquid peat slu
ea of cutaway peatland at Srahmore, near Bangor Erris, C
p Ltd. on behalf of Shell E&P Ltd.

dy C Pyle dated 12/12/03 (copy enclosed) it states clearly
proposal regarding peat deposition, the new applicat
[illegible] changed substantially from that previously considered by the relevant planni
authorities". Therefore our concerns in relation to the original proposals (P00/2934 and P01/9
still stand and we have no intention of repeating them as they are already on file in the plann
office of Mayo County Council. These concerns were upheld by An Bord Pleanála's inspectors.

* An Bord Pleanála's Senior Inspector Mr Kevin Moore and Dr David Ball (an emin
hydrogeologist) recommended that the application be refused on a number of grounds including
high risk posed by the transfer of peat from one location to another and the unacceptable risk to
health and safety of the local community and the general public on the public road adjoining the s
Mr Ball conducted a report on the "Assessment of the proposed development in relation to so
peat, bedrock, groundwater and surface water and their influence on other planning issues un
consideration". The board of An Bord Pleanála unanimously refused the proposed application w
direct reference to the issue of peat removal. An Bord Pleanála's register reference is PL 16 1260

* Mayo County Council have refused planning permissions for developments incorporat
septic tanks in close proximity to Carrowmore Lake due to poor soakage and thus a risk
pollution. In relation to proposal P01/900 Mr Kevin Moore stated in his report that "It is a pol
of the planning authority (i.e. Mayo County Council) as set out in the current Mayo Cou
Development Plan to protect the Carrowmore Lake area of outstanding natural beauty, designa
an area of special scenic importance . . . The proposed development would seriously injure
amenities of the area, would conflict with the policy of the planning authority and would contrav
materially the objectives of the current Mayo County Development Plan. The development wou

Mayo County Council
Aras An Chontae
Castlebar

Ref No.: P03/3343

30/01/2004

Brid & Teresa McGarry
Gortacragher
Rossport
Ballina
Co. Mayo

A Chara

I wish to acknowledge receipt of submission received from you on 28/01/2004 in connection with planning application by SHELL E & P IRELAND LIMITED for CONSTRUCT GAS TERMINAL FOR THE RECEPTION AND SERAPATION OF GAS FROM THE CORRIB GAS FIELD, AND FOR A PEAT DEPOSITION SITE, RESPECTIVELY. THE DEVELOPMENT WILL CONSIST OF THE CONCURRENT DEVELOPMENT OF TWO SITES LOCATED 11 KILOMETRES APART, APPROXIMATELY, AND IDENTIFIED AS THE SITE OF THE GAS TERMINAL FOR THE RECEPTION AND SEPARATION OF GAS FROM THE CORRIB GAS FIELD IN THE TOWNLAND OF BELLAGELLY SOUTH AND THE SITE OF THE PEAT DEPOSITION SITE IN THE TOWNLANDS OF SRAHMORE AND ATTAVALLY, BANGOR ERRIS. THE DEVELOPMENT AT THE BELLAGELLY SOUTH SITE WILL CONSIST OF: A GAS TERMINAL FOR THE RECEPTION AND SEPARATION OF GAS INCLUDING PLANT AND EQUIPMENT; PROVISION OF 4,935 SQ M (GROSS FLOOR AREA), APPROXIMATELY, OF BUILDINGS; ACCESS ROADS; 40 NO. CAR PARKING SPACES; AND ANCILLARY DEVELOPMENTS, OF WHICH 13 HA, APPROX, WILL BE DEVELOPED INRESPECT OF THE GAS TERMINAL'S FOOTPRINT. THE PROPOSED DEV. WILL OF THE BELLAGELLY SOUTH SITE WILL ALSO CONSIST OF; THE EXCAVATION AND REMOVAL OF 450,000 CUBIC M at BELLAGELLY SOUTH SRAHMORE ATTAVALLY.

The matters referred to by you will be taken into consideration by the Council before a decision is made on the application. Notice of the Council's decision on the

application will be given in accordance with the requirements of the Planning and Development Regulations, 2001. This may be in the form of:

(a) posting the notice directly to you; or

(b) publishing the notice in a newspaper circulating in the area where the proposed development is situated.

Please note that in the event of an appeal being lodged by you, An Bord Pleanala will require a copy of this letter of acknowledgement.

Mise, le meas

RUNAI CHONDAE

Gortacragher
Rossport
Ballina
Co. Mayo

6438
€20 cash
28/1/04

28th January 2004

The Planning Section
Mayo County Council
The Mall
Castlebar
Co. Mayo

Re : Planning Application Ref No P03/3343 (as submitted by Shell E & P Ireland Ltd. on 17/12/03 and validated on 18/12/03) for the proposal to construct a natural gas terminal (refinery) at Ballinaboy, Bellagelly South, Co. Mayo. and to remove >450,000m3 liquid peat slurry (>650,000m3 in P01/900??) to an area of cutaway peatland at Srahmore, near Bangor Erris, Co. Mayo, by Bord na Móna Energy Group Ltd. on behalf of Shell E&P Ltd.

A Chara,

In a letter to Teresa Mc Garry from Andy C Pyle dated 12/12/03 (copy enclosed) it states clearly in paragraph two **"Apart from the new proposal regarding peat deposition, the new application has not changed substantially from that previously considered by the relevant planning authorities".** Therefore our concerns in relation to the original proposals (P00/2934 and P01/900) still stand and we have no intention of repeating them as they are already on file in the planning office of Mayo County Council. These concerns were upheld by An Bord Pleanála's inspectors.

* An Bord Pleanála's Senior Inspector Mr Kevin Moore and Dr David Ball (an eminent hydrogeologist) recommended that the application be refused on a number of grounds including the high risk posed by the transfer of peat from one location to another and the unacceptable risk to the health and safety of the local community and the general public on the public road adjoining the site. Mr Ball conducted a report on the "Assessment of the proposed development in relation to soils, peat, bedrock, groundwater and surface water and their influence on other planning issues under consideration". The board of An Bord Pleanála unanimously refused the proposed application with direct reference to the issue of peat removal. An Bord Pleanála's register reference is PL 16 126073.

* Mayo County Council have refused planning permissions for developments incorporating septic tanks in close proximity to Carrowmore Lake due to poor soakage and thus a risk of pollution. In relation to proposal P01/900 Mr Kevin Moore stated in his report that "It is a policy of the planning authority (i.e. Mayo County Council) as set out in the current Mayo County Development Plan to protect the Carrowmore Lake area of outstanding natural beauty, designated an area of special scenic importance . . . The proposed development would seriously injure the amenities of the area, would conflict with the policy of the planning authority and would contravene materially the objectives of the current Mayo County Development Plan. The development would

therefore, be contrary to the proper planning and development of the area". The proposed Srahmore peat deposition site is located downstream from Carrowmore Lake and is composed of cutaway bog. Bord na Móna Energy Ltd intend to deposit peat slurry on this site into a large basin-shaped depression. The Owenmore and Munhin rivers drain from the Srahmore site into Tullaghan Bay. The Munhin river also enters Carrowmore Lake. Concerns arise with respect to potential siltation of these watercourses. The Munhin is a key salmonoid river (Annex II of the E.U. Habitats Directive). Resulting siltation of Munhin river and Carrowmore Lake will have a detrimental effect on the salmonoid and other species resulting in blocked gills, clogging of spawning beds etc. Siltation will also effect the drinking quality of the resultant drinking water for consumers during the treatment process as Carrowmore Lake provides domestic water for most of the Erris area. The increased probability of silting to Tullaghan Bay must also be considered.

* There will be elevated dust emissions due to haulage vehicles and onsite vehicles generating exhaust fumes to the localised environment. With reference to the previous application Mayo County Council in their schedule of conditions insisted that the road between Ballinaboy and Bangor (L1204) was not to be used by heavy vehicles. This road is sandwiched between Carrowmore Lake (cSAC - Natura 2000) and Sliabh Fyagh (cSAC), both protected areas under European legislation. In the proposer's amended traffic plan the proposed volume of traffic and the additional volumes of material for transportation to and from the site along this road poses a real threat to these fragile ecosystems and the possibility of further landslides occuring (see below).

* There will be elevated noise levels generated by this activity.

* There will be elevated releases of carbon during peat slurry removal from Ballinaboy to Srahmore. Also phosphates and nitrates due to removal of planted conifer forestry (Coillte owned land). This will have highly negative impacts in relation to eutrophication if allowed to be washed into local water courses. Silting also leads to eutrophication.

* There is also a potential for flash flooding where unstable peat slurry has been spread out over a wide area of cutaway bog at Srahmore.

* The method of peat deposition proposed will have adverse impacts on groundwater as the supersaturated, contaminated peat is to be spread out in a depression and its surrounds. The resulting discharge will seep down more readily into the groundwater sources with the potential to alter the existant water table and ground water systems.

* Within the peat slurry itself there will be an elevated probability of suspended solids and turbidity release due to the mixing of the peat. The high levels of rainfall in this area will accelerate this and the peat will increase in bulk.

* A baseline study of flowrates in the Srahmore area would need to be conducted over a period of a least two years to gain a better assessment of drain loadings, rainfall etc.

* We must also consider seriously the effect of flash flooding bearing in mind the multitude of landslides which occurred on the 19th September 03 in Dooncarton, Glengad, two miles from Ballinaboy, where flooding also occurred as a result. 89.3mm of rainfall was recorded in Dooncarton

on that day. During the proposed process of removing liquid peat from the Ballinaboy site there is a strong possibility of leaching to local watercourses such as Lenamore river, Glenamoy river (salmonoid rivers) and Sruhawaddacon Bay (SPA and cSAC).

* The removal and deposition of saturated peat and other elements to an area of cutaway saturated peat will distort the underside and the surrounding peat structure. This will lead to a sink which could lead to a bog burst and potential pollutants effecting local catchments. The Derrybrien event in County Galway is one such example of a bog burst.

* Loose peat slurry will be very prone to erosion. Elevated rainfall would erode the peat surface further and thus increased runoff would occur.

* Have Shell E & P Ltd. and Bord na Móna Energy Ltd submitted any referenced documentation that attempts to describe the successful deposition of supersaturated peat on underlying cutaway peat. Have the relevant authorities considered the real risk to human health with respect to contaminated buried carcasses on the Ballinaboy site, an issue which was raised at the oral hearing into the proposed gas terminal (refinery) at Ballinaboy and which is referred to in the Terminal EIS Volume 1, 8.4.6. The quantities of peat in this case and the proposals for the removal and deposition of same are unprecedented. Securing for infinity a minimum of >450,000m3 of peat slurry and miscellaneous in an area of high rainfall under these circumstances is a concept. A failure at any level would constitute a serious health and safety hazard. Bord na Móna have a very poor environmental track record locally and nationally in relation to the control of silt and the protection of water courses.

* The Board of An Board Pleanála in their summing up of the findings stated "Finally, the Board noted that alternatives are available for the development of the Corrib Gas Field". This was backed up by Inspector Moore in his report under the heading 2.0 Alternatives where the board were unsatisfied with the information provided by the proposer despite specifically being requested to address an alternative option. There has been no feasibility study produced to date on the offshore option or on alternative sites. The technology is available to recover and process natural gas and oil at greater depths and harsher sea conditions than those found in the Corrib Field and is already employed by Statoil and other companies in Norwegian waters. This has been the international standard for a substantial number of years.

We trust that Mayo County Council will take our genuine concerns on board with respect to this proposed project. Our experience with the planning section of M.C.C. to date has been one of inconsistencies in providing accurate information and it is a source of regret to us that this still appears to be the case as appendix A (attached herewith) will demonstrate.

Yours sincerely

Bríd Mc Garry.
Bríd Mc Garry,

Teresa Mc Garry
Teresa Mc Garry

Shell Exploration & Production

Ap/Sm

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Ms Teresa McGarry
Gorthacragher
Rossport
Ballina
Co. Mayo

12 December 2003

Dear Ms McGarry

Subject: Corrib Natural Gas Project

I am writing to confirm that we have reached the decision to submit a new planning application for an onshore gas terminal at the Bellanaboy Bridge site. This intention will be advertised in the Irish Independent on Saturday, 13th December and the application will be lodged before the end of December.

The new application will incorporate the proposal for the removal of peat from the proposed site and deposition at the Bord na Móna cut-over peatland at Srahmore. This new proposal was well received during extensive consultations and at the recent exhibitions. Apart from the new proposal regarding peat deposition, the new application has not changed substantially from that previously considered by the relevant planning authorities.

We understand that the planning application, once submitted, will be available for members of the public to view at the Mayo County Council offices in Castlebar and the local council office in Belmullet. The local authority has also advised us that nine days will be added to the statutory period to compensate for time lost over the Christmas and New Year holiday season.

An Environmental Impact Statement (EIS) to accompany the planning application has been prepared and, under the Planning and Development Act 2000, the local authority is responsible for addressing requests for copies. Copies of the non-technical summary of the EIS will be available on our website **www.shellireland.com** once the application has been lodged.

May I take this opportunity to thank you for your support throughout 2003 and to wish you a very Happy Christmas and a Peaceful New Year.

Yours sincerely

Andy C Pyle
Managing Director

Appendis A

Our experience with the planning section of M.C.C. to date has been one of inconsistencies in providing accurate information to us in our evaluation of this proposed project P03/3343.

Planning Application Ref No P03/3343 was submitted by Shell E & P Ireland Ltd.to Mayo County Council between 2.30 p.m. and 3.00 p.m. on 17/12/03 and validated on 18/12/03 between 5.30 p.m. and 6.00 p.m. (after regular office hours). This was verified in a telephone conversation I had with Mr. Ian Douglas, Chief Planner on the 19/12/03 in which I requested a letter stating the above details. I was informed that it would be attached to a box of EISs which I had ordered on the 19/12/03 for collection on the 22/12/03 at a cost of 100 euro.

On the 22/12/03 I collected the box of EISs and again spoke to Mr Ian Douglas. However the letter I requested was not attached to the box as agreed. Mr Douglas then informed me he would forward the requested details to me by post after Christmas and needless to say I have not received this information.

On 22/12/03 I also made enquiries about the cd rom equivalent of the EISs and was informed that one cd rom was available to the public which covered all of the information in the EIS volumes. This was not available for purchase at the time I called to the office (12.30 p.m.). Mayo County Council closed their offices on the 23/12/03. I enclose the following extracts from the Mayo News written by Liamy Mc Nally (DE FACTO) dated 07/01/04, 14/01/04 and 21/01/04 which illustrates the incompetency of Mayo County Council officials in this matter. It emerged that there were in fact four cd roms.

Signed by: Brid Mc Garry.

DE FACTO columns by Liamy MacNally.

THE INCOMPLETE EIS

AN EIS must be completed with the planning application. That is the law. Copies of the EIS should be made available for purchase by the public. That is also the law. The complete EIS for this application was not submitted with the original planning application. An official in Mayo County Council planning department notified me last Tuesday (December 30th) that further information regarding the EIS had been received. The planning application was made on December 17th. Copies of the EIS were not available to all people who wished to purchase a copy after December 17th – not Shell's fault or Mayo County Council. Shell had submitted the required number with the planning application. It is just a quirk of the Irish legal system. The law states that such copies must be made obtainable "as soon as may be available." How is that for legalese?

It puts Mayo County Council planning officials in a difficult position. Should the 5-week window for observation/objection begin from the date all the information was submitted? This was a request of the Friends of the Irish Environment, after one of their members was unable to buy a copy of the EIS. If information was outstanding why did Mayo County Council validate the planning application? Can the application be validated when all the information was not to hand on the day of validation? All the parties involved are big enough, brave enough and have adequate supports, both financially and otherwise, to ensure that every 'i' is dotted and every 't' crossed.

Mayo News 07\01\04

Corrib Gas Project Revisited

FOLLOWING last week's column, the Managing Director of Shell E&P Ireland Ltd, Mr Andy Pyle, wrote: "In an article written by Liamy McNally in the paper on Corrib under the heading "Incomplete EIS" it is stated that "The complete EIS was not submitted with the original Planning Application". This purported statement of fact is totally and completely untrue and has the potential to mislead the public and also to undermine our planning application in the eyes of the public. I would ask that this be corrected at the earliest stage by the newspaper.

Reply: Andy Pyle is correct. The complete EIS was submitted with the original planning application to Mayo County Council. That submission was made on hard copy (folders and maps) and is the submission used for validating the application, which was done by Mayo County Council. The incomplete EIS mentioned in the article should have referred to the CD copy of the EIS which is made available to the public. Public consultation is an integral part of the planning process and it is up to the applicant to ensure that complete information is made available to the public. This copy was incomplete, as verified by a senior council planning official on December 30th last. This does not in any way invalidate the Shell application and I am happy to clarify the matter on record.

Mayo News 14\01\04

THE CORRIB GAS PROJECT

THERE is also more confusion on Mayo County Council's handling of the Shell Corrib Gas project. The following is the timetable of the availability of the CD version of the EIS to me, as a member of the public:

Dec 17th: Planning application and EIS submitted by Shell to Mayo County Council.

Dec 19th: CD copy of EIS requested from Mayo Co Co – not available.

Dec 22nd: Still not available, despite assurances on Dec 19th.

Dec 23rd: Contacted by Mayo Co Co to say EIS CD available. Offered one CD and informed that all information was contained thereon. Asked the official to check – on his return he said there was another CD, which was handed over. The fee of €20 was paid to Mayo Co Co. About ten minutes later I received a call from Mayo Co Co - there were another two CDs that also form part of the EIS. Returned to collect same.

Dec 30th: Informed by Mayo Co Co that they had been advised by Shell that the CDs did not contain all the relevant information. Another CD issued.

Jan 16th: Received a registered letter from Mayo Co Co with another CD and the details as follows.

"The applicant has brought to our attention that a number of files were inadvertently omitted from the digital version of the EIS given to Mayo County Council on CD and copied to you. The missing files, contained in the enclosed CD and labelled to match the folders contained in your earlier CDs are as follows.

There is a Chapter 5 contained on the CD however it is an old draft of this chapter. This new file which contains the most recent census data is the version of chapter 5 contained in the hard-copy of the EIS.

Additional Note: Waste licence application drawing WLA_300 series.pdf and WLA_series.pdf were sent to you on disk in error – these do not form part of the planning application or EIS. To ensure that any submission you may wish to make in relation to the missing files can be considered, you should make a submission based on the information contained in the original discs before 30th January 2004 in the normal way. Submissions on the missing files up and including (sic) 19th February 2004 will be considered by Mayo County Council as supplementary to your first submission. This is to ensure that the Council can give consideration to your full submission...

Confused? In short, the time for submissions on (some of) the EIS has been extended. Some people have been waiting since December 19th for CD copies of the EIS. Can any Mayo County Council official explain why? Can this disrespect for the rights of the public be classed "Government Policy"?

Mayo News 21\01\04

Gortacragher
Rossport
Ballina
Co. Mayo

1st April 2004

Mr Ian Douglas S.E.P.
The Planning Section
Mayo County Council
The Mall
Castlebar
Co. Mayo

Re : Planning Application Ref No P03/3343 as submitted by Shell E & P Ireland Ltd.

Dear Mr Douglas,

This is a submission based on planning application P03/3343 and the information submitted by the developer to Mayo County Council on 11th March 2004 in response to a request by Mayo County Council for further information on 17th February 2004.

We refer to the above and wish to make a number of observations.

Volume 1 ; Item 2 - "Written confirmation from the relevant regulatory authority that the design of the proposed gas pipelines from the Terminal compound to the site boundary is suitable to ensure the structural stability of the pipelines constructed in deep peat soil".

The Seveso II Directive applies to the transport of dangerous substances in pipelines inside the refinery establishment(s) therefore the upstream pipeline containing raw inpure wet gas at elevated pressure(s), the control umbilical and discharge pipeline etc. are within the remit of the Directive and thus safety aspects with respect to this reality have not been taken into account by Mayo County Council and The Health and Safety Authority. At the last oral hearing conducted by An Bord Pleanála in November 02 the N.A.O.S.H. report prepared by Mr John Colreavy stated on page 5 that "The Directive does not apply to pipelines or the road transport of dangerous goods outside the boundary of the establishment". He did not fully assess the health and safety implications in relation to the upstream pipeline section within the boundary as was his remit and what was assessed was based on dry not wet gas. In reality as the term "establishment" refers to the whole area under the control of an operator and as the Corrib Field(s) is to be controlled and operated by Shell E&P (as operator) and partners etc. this upstream section of pipeline from the landfall to the proposed terminal (refinery) should fall within the establishment. Please refer to Appendix A whereby Ms Breda Gannon S.E.P. stated on 6/8/02 that " . . all information received with respect to the gas terminal and upstream pipe forms part of the application for planning permission". Mr Colreavy did not address the impact of gas explosions precipitating landslides in his assessment. After the Dooncarton landslides on 19/09/03 this is a very real issue.

We refer to a request for "written confirmation from the relevant regulatory authority" and response by the developer as follows : "The import pipeline is to be constructed in accordance with the consent obtained by Shell on 15th April 2002 from the Department of the Marine and Natural Resources persuant to Section 40 of the Gas Act 1976. A copy of the consent is provided. This consent is subject to technical and environmental conditions with which Shell is obliged to comply". It is unclear from the letter of the 15/04/02 to Mr Brian Ó Catháin, Managing Director, EEI Ltd. Corrib House, 52 Lower Leeson Street, Dublin 2 by Frank Fahey T.D. (Minister for the Marine and Natural Resources) as to whether this is the actual consent to construct the upstream pipeline, as it states the following "I will be grateful if you would acknowledge and indicate your acceptance of the above conditions". There is no response from Mr Brian Ó Catháin on record to indicate that he accepted the conditions referred to and therefore how can we accept that this is the actual consent.

We believe that Technical Condition 2 ("the pipeline route is to be fixed near inhabited buildings to ensure that a minimum proximity distance of 70 metres is achieved") cannot be complied with because there are a number of inhabited houses within the 70 metre zone along the upstream route.

Referring to Technical Condition 22 we quote the following "Duration, likely frequency and noise associated with flaring of both the HP and LP flares should be kept to a minimum in accordance with best industrial practice". The Department of the Marine and Natural Resources has no jurisdiction over the proposed terminal (refinery) and their jurisdiction over the upstream pipeline(s) is highly questionable. Will flaring be in operation to reduce the wellhead pressure of 345 BARG to 150 BARG in increments along the upstream route from the landfall to the terminal (refinery)? If so these "flares" will require planning permission as well as other ancillary equipment such as a proposed "single in-line joint / termination unit" to be located on our private lands (refer to Ballinaboy Bridge Terminal EIS P00/2934 under 5. Alternatives p 5-9) and valve station at the Dooncarton landfall. We refer you to Appendix B (Bord Gáis Mayo-Galway Gas Pipeline EIS Non Technical Summary dated May 2001 by ARUP). On page 3 the following is stated "Gas pipelines do not require planning permission. However any above ground installations, other marker posts, such as block valve stations require planning permission from the relevant Local Authority". Therefore the upstream associated infrastructure would require planning permission. We also refer you to Andrew Johnston's report (commissioned by the Department of the Marine and Natural Resources) page 21 under the title summary "in-ground utility crossing" and "inside above ground installations".

We refer you to Appendix C whereby the onshore line is set at 345 BARG (pipeline specification 344 BARG) and the onshore Terminal (refinery) is set at 150 BARG at the pig receiver. This would strongly indicate that depressurisation by some means such as flaring along the proposed upstream route would have to occur to have an arrival pressure at the proposed Terminal (refinery) of 150 BARG. This projected reality is unprecedented in the world and poses an unacceptable risk to human and animal health and wellbeing.

What regulatory authority will mitigate against the effects of the proposed blasting on adjoining residential properties and on Dooncarton mountain?

We refer you to Appendix D - A critique of the operational methodology and process components at the proposed Ballinaboy Bridge Gas Terminal, County Mayo, Eire by Mr Peter Rossington

B.Sc (Hons) M.R.S.C. He states on page 3 "The EIA admits that around year nine of the proposed plant's twenty year lifespan mechanical refrigeration will have to be installed . . . . For anybody not familiar with gas processing, the installation of a major chilling plant is not a simple operation. Major construction will be required at the Terminal in year nine, the extent of which will nearly equal the major construction currently proposed. This construction will once again result in large scale disruption to the life of local residents. If it is taken into account that mechanical refrigeration is a more efficient processing technique than adiabatic expansion, it will be required in year nine of the terminal's life anyway and local residents should be inconvenienced as little as possible by the proposed terminal, then Enterprise Oil should incorporate mechanical chilling into the current design of the Terminal" Also on page 3 he states the following "The EIA makes reference to the use of propane as the refrigerant medium in the proposed mechanical chilling system to be installed in year nine. Whether a refrigerant system is installed either in year nine, or at the beginning when it should be present, it is surprising to see that propane is being considered as the chilling medium. Propane is a highly flammable gas that by its presence alone causes increased risk for local residents and terminal operators alike . . ."

This development is not in compliance with Seveso II Directive (Mechanical Refrigeration implications and the use of propane have not been addressed) with respect to health and safety criteria whereby the developer must supply and include all the types and cumulative quantities of the anticipated products / byproducts used in the gas processing industry. Therefore the legal requirement which must be implemented as a result of Seveso II is that technical advice on the risks arising from the establishment must be available when planning decisions are made.

As this mechanical refrigeration unit will require major construction this will also involve the removal of colossal amounts of peat and dóib with associated siltation and other negatives such as disruption to local residents, effects on the roads structure etc. Where will this displaced peat and dóib be removed to? This development will also present problems from a visual point of view with the further removal of trees due to the health and safety criteria and also the interaction of other chemical processes on site. According to the Seveso Directive these and other questions must be addressed NOW.

We refer you to a report "Corrib Gas Pipeline Project - Report on Evaluation of Onshore Pipeline Design Code", prepared by Andrew Johnston dated 28th March 2002, submitted to the Department of the Marine and Natural Resources for assessment re. the upstream pipeline and quote the following from page 11 under the heading 4.2 Key Aspects of the Corrib Gas Pipeline. " The circumstances include the fact that the pipeline has an unusually high design pressure and transports unprocessed wellfluid, which is a WET GAS and therefore corrosive when combined with carbon dioxide (CO_2) in the gas". The Health and Safety Authority derived their conclusions with respect to its modelling assessments re. potential impacts based on DRY GAS. Wet gas usually contains hydrogen sulphide which is corrosive. Therefore it is our considered opinion that the planning application would need to be modified to reflect this reality. This report is damning with respect to the upstream section and we urge you to study it carefully. (Appendix E)

We refer you to the proposal to route a large section of the upstream pipeline and misc. through our private lands. This proposed pipeline has three 90 degree turns along this section of the route (Appendix F). This is unprecedented for highly pressurised gas, as explained previously. There is

o mention of the matter of the change of use of this property i.e. from agricultural to commercial use. We have been issued with documentation in relation to compulsory acquisition without any authority and we question the legality of these documents. It would appear that compulsory acquisition powers were not transferred to Mr Frank Fahey (Marine Minister) under the Gas Act 1976 as amended and Mayo County Council would need to seek legal advice on this issue. There is little point in assessing a proposal for a Terminal (refinery) if there is no feeder supply into it from source. The compensatory terms are completely inadequate given the nature of this proposed development.

With reference to Volume 1 ; Item 6 "Phosphate Hotspots" Independent assessment would need to be conducted to verify the readings submitted. Phosphate could leach from the peat in transit to Srahmore. The information provided by the developer in relation to phosphate hotspots is not complete and does not take account of the mechanical refrigeration unit referred to earlier.

In our previous submission re. P03/3343 (dated 28/01/04) we referred you to "the risk to human health with respect to contaminated buried carcasses on the Ballinaboy site, an issue which was raised at the oral hearing into the proposed gas terminal (refinery) at Ballinaboy and which is referred to in the Terminal EIS Volume 1, 8.4.6." This matter will also apply to the area for the proposed mechanical refrigeration chiller.

With respect to Volume 1 ; Item 20 the Point-of-Ayr gas terminal is located on the shoreline with a flare stack in isolation and with no forest plantation in the vicinity. How can this be compared to the current proposal for Ballinaboy which is surrounded by mature coniferous forest (a potential fire hazard). In the Point-of-Ayr the terminal' s location is highly significant as the incoming gas is depressurised and received on the shoreline for processing. In Ballinaboy however the proposal is to allow highly pressurised gas and misc. to traverse inland for a distance of nine kilometres through residential areas, again unprecedented. Please refer to Appendix G where it is stated that "The Point-of-Ayr was developed at a cost of £1.1 billion (sterling) and employs approximately 550 people and contributes an estimated £15 million in goods and services into the local economy each year. The Point-of-Ayr Terminal was built in 1995 . . . ." The proposed Ballinaboy Terminal is to cost in the region of 150 million euro which alone reflects the inadequacy of this proposal, utilising some of the worst gas terminal design that maximises emissions, minimises energy efficiency and maximises disturbances in the area - for an estimated 15 to 20 years supply of gas!!!

We have real concerns with respect to copious, miscellaneous emissions into the air which will be directed by the prevailing south westerly winds directly towards our village in Gortacragher. The upstream pipeline has been described in the An Bord Pleanála report on page 76 by Mr David Taylor, on behalf of the proposer, as "it is the only one of a kind that he is aware of". Is is any wonder then that no competent or regulatory authority has taken responsibility for it which puts the whole concept into perspective. It creates a health and safety hazard which has not existed previously. We, as residents along the pipeline route, are sandwiched between the highly pressurised incoming gas and the proposed Terminal (refinery) at Ballinaboy. Because of this reality our private lands and residental properties will be totally devalued by this development as it is non sustainable.

Having perused the response to further information we have come to the conclusion that the

information provided by the developer is incomplete and inadequate. We have made our concerns known to Mayo County Council in previous submissions which were later vindicated by An Bord Pleanála. The latest application P03/3343 is flawed in the extreme from a planning, engineering, health and safety, environmental and academic perspective. We believe that Mayo Council Council have no option but to refuse planning permission for what is a concept and unprecedented.

Yours sincerely

Bríd Mc Garry.
Bríd Mc Garry B. Agr. Sc. (Food Science and Chemistry)

Teresa mc Garry
Teresa Mc Garry

Encs.

Appendix H

COMHAIRLE CONTAE MHAIGH EO

MAYO COUNTY COUNCIL

MEMORANDUM

TO:	Mr R. Norton, Director of Services Mr P. Hynes, Director of Services Mr S. Granahan, Director of Services Mr J. Beirne, Director of Services/County Engineer Mr I. Douglas, Senior Planner Ms B. Gannon, S.E.P., Planning Section
FROM:	Mr J. Walsh, A.O., Corporate Affairs
DATE:	25th July, 2002
SUBJECT:	FREEDOM OF INFORMATION REQUEST - FOI 287

Attached please find copy of request for information under the Freedom of Information Act, 1997, received from William Fry, Solicitors, Fitzwilton House, Wilton Place, Dublin 2.

The Freedom of Information Act refers to records created on or after 21st October, 1998.

I would be grateful if you could provide a report on the records as requested to the undersigned not later than Wednesday, 7th August, 2002.

Thanking you.

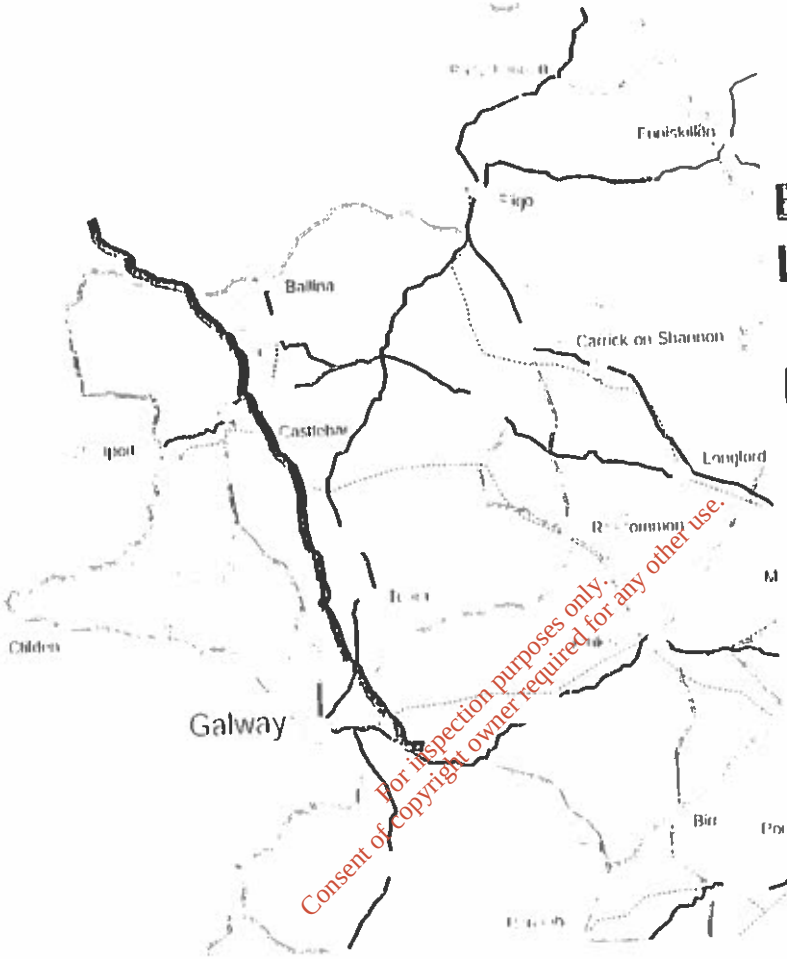
J. Walsh

SSO Please respond - all information received with respect to the gas terminal + upstream pipe forms part of the application for planning per [illegible] The [illegible] available for inspection during office hours [illegible]

ppendix D

BORD GÁIS
TRANSMISSION BUSINESS UNIT

MAYO-GALWAY GAS PIPE LINE



ENVIRONMENTAL IMPACT STATEMENT

Non-Technical Summary

MAY 2001

ARUP

2 Environmental Impact Assessment

BGE must obtain the consent of the Minister for Public Enterprise to construct and operate a gas pipeline. For gas pipelines greater than a certain size and length BGE must submit an EIS to the Minister to accompany the application for consent. The Minister may attach conditions to his approval.

Gas pipelines do not require planning permission. However any above ground installations, other marker posts, such as block valve stations require planning permission from the relevant Local Authority.

The EIS has been prepared in accordance with the requirements of the European Communities Environmental Impact Assessment (Amendment) Regulations 1999, which specify the projects requiring an EIS and the information to be provided.

The principal elements of the environmental assessment process, up to submission of the EIS, which were followed during this environmental impact study, are described below:

Scoping - determining the issues to be part of the study, including further issues identified by Consultees, and the availability of data

Determination of baseline conditions - determining the criteria with reference to which the likely environmental effects of the proposed development were to be evaluated

Consultation - undertaken throughout the assessment process in order to inform interested parties and invite comment

Evaluation of significant effects/determine mitigation - an iterative process whereby the significance of potential effects is determined and design improvements or appropriate mitigation identified in order to reduce adverse effects

Determination of significant environmental effects - once mitigation/design improvements have been incorporated, the significance of residual environmental effects was determined

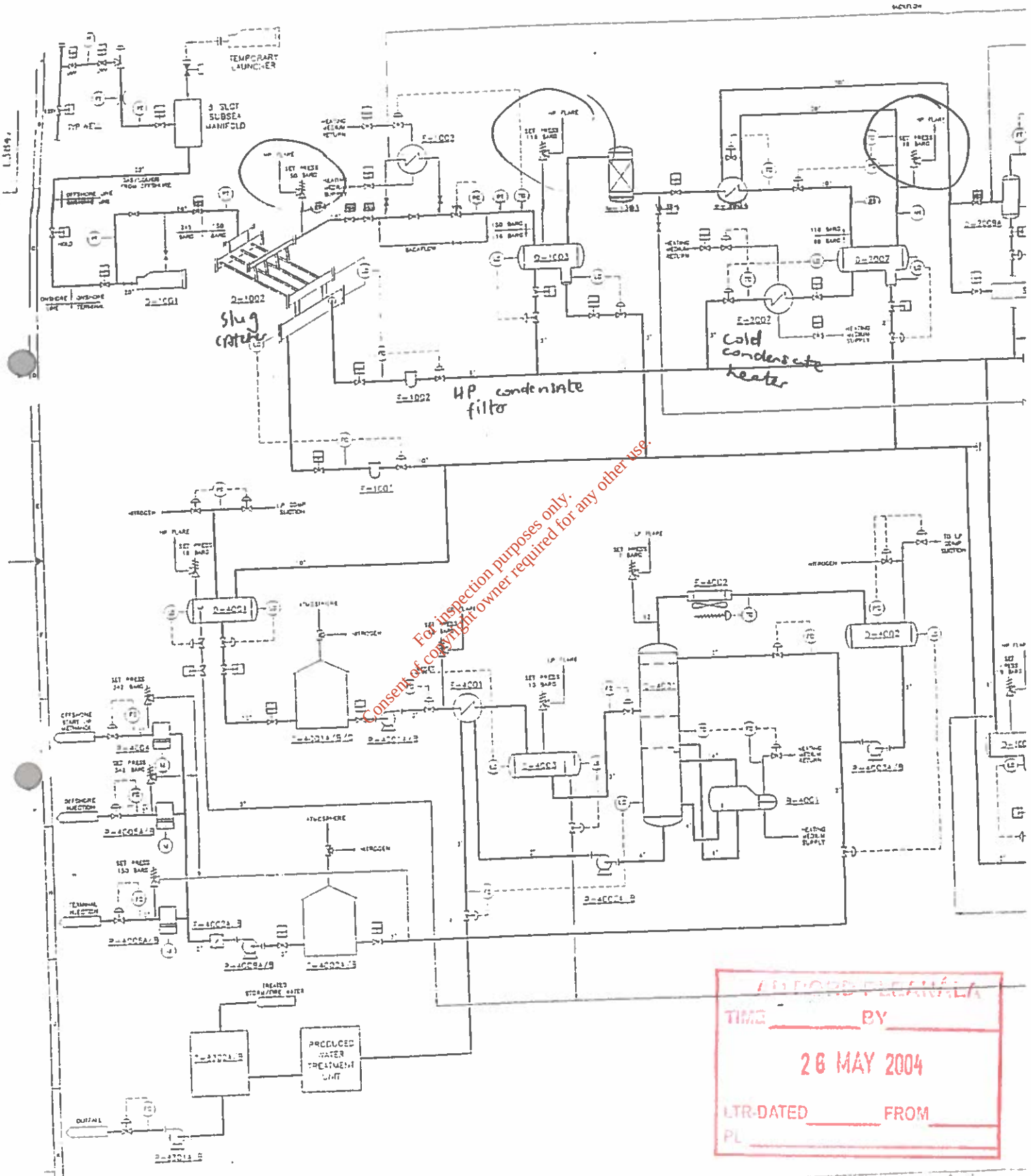
Reporting - the findings of the assessment are reported in an EIS, which is a public document

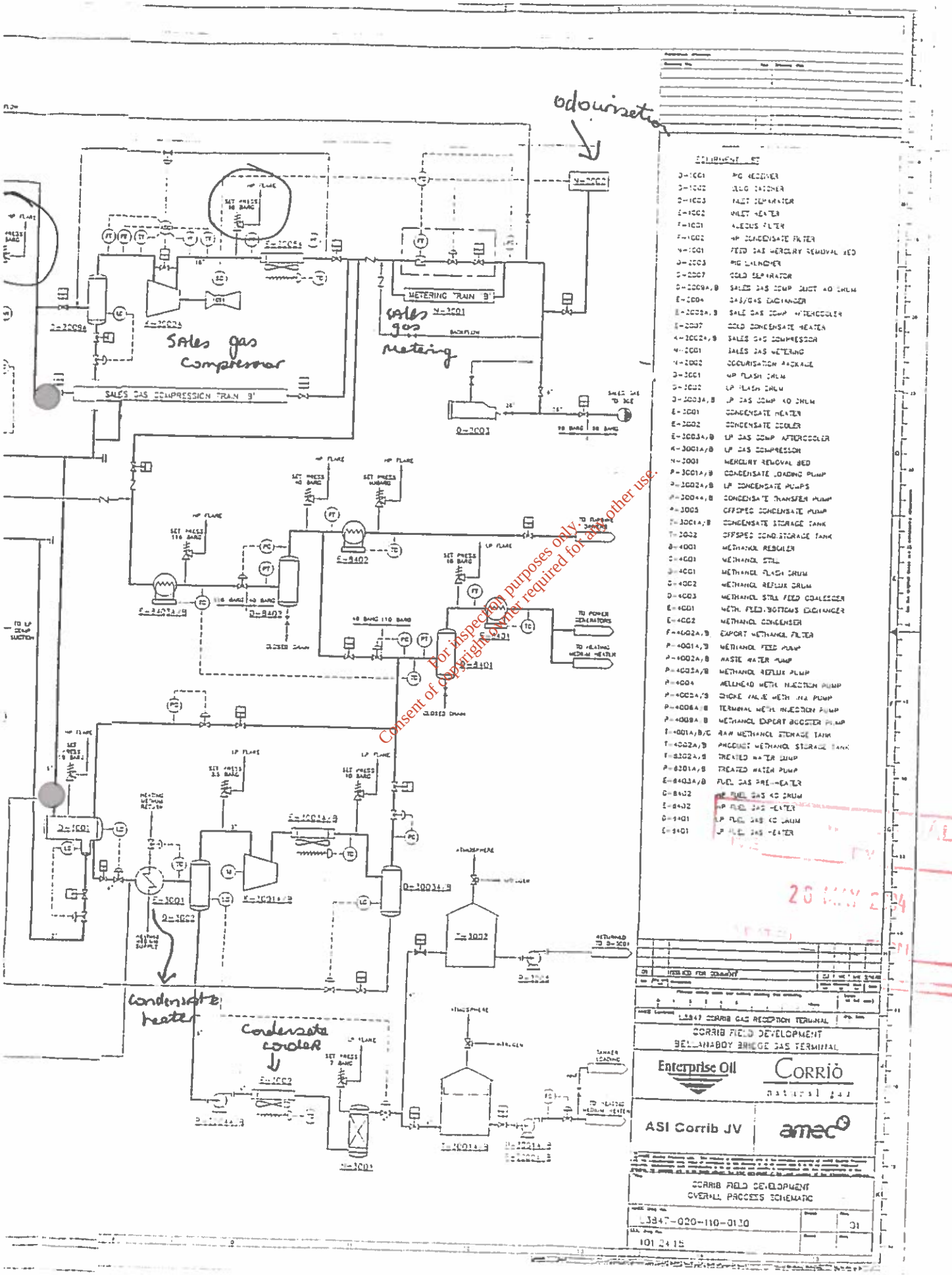
Consultation

Consultation is a very important part of the environmental assessment process. Consultations took place with government departments and other agencies during the environmental assessment. The main organisations contacted were:

- Dúchas (Parks and Wildlife Section)
- Birdwatch Ireland
- Irish Peatland Conservation Council
- Department of Zoology, TCD
- Dúchas (Research, Bogs and Wetlands)

Appendix C





CRITIQUE OF THE OPERATIONAL METHODOLOGY AND PROCESS COMPONENTS AT THE PROPOSED BELLANABOY BRIDGE GAS TERMINAL, COUNTY MAYO, EIRE.

BY PETER ROSSINGTON B.Sc. (Hons) M.R.S.C.

The benefits of using natural gas as a fuel for power generation in an expanding economy are well known. In fact, in section four of the Environmental Impact Assessment (EIA), for the proposed Bellanaboy Bridge gas terminal, they are even documented. It is stated that, "As the demand for energy increases, it is expected gas will have will have an increasing importance because of the efficiency of energy use in combined cycle gas turbine generators and the resulting relatively benign environmental impact of the emissions". From this statement, and other similar ones throughout the EIA, it is possible to think that Enterprise Oil and its partners understand the importance of energy efficiency and the need to keep toxic emissions to an absolute minimum. However, when the operational methodology and process components for the proposed terminal are studied, the impression is given that at their own facilities Enterprise Oil apply other principles. The proposed Bellanaboy Bridge terminal incorporates some the worst gas terminal design, that actually maximises emissions, minimises energy efficiency and, due to the need for residual construction throughout its lifespan, maximises disturbance for local residents.

Throughout the EIA, the impression is given that Enterprise Oil care greatly about the environment, but their words seem meaningless when the equipment specification is studied and the consequential emissions are considered. In most peoples minds, minimising the impact to the local environment means employing processes and equipment that produce the minimum emissions possible with current technology. However, minimising the impact on the local environment to Enterprise oil seems to mean, with a few exceptions, meeting current legislative requirements for emissions. Many local residents around the proposed terminal have realised the distinction between these two very different definitions given to the same term, and have consequently become very concerned about what this might mean for their health and local environment. This is very understandable when the history of industrial development, and its effects on the environment, is considered. For example, discharges of toxic metals from factories in both Europe and the United States for many years met the legislative requirements of various national governments until it was discovered huge areas of estuaries, rivers and lakes were highly polluted. A classic example of this was lake Michigan, which in the late 1970's was found to contain unacceptable levels of mercury and cadmium. The cause of the pollution was numerous plants discharging supposedly "safe" industrial effluent into the lake. Many of the plants responsible for the pollution were not fitted with technology that could have reduced the emissions of heavy metals to virtually nil, even though it was in existence and well proven.

To truly have a minimum impact on the environment, Governments and companies must adopt a target zero approach, and use technology and practices that minimise or completely stop toxic emissions and maximise energy efficiency. This is something Enterprise Oil has not done at the proposed Bellanaboy Bridge terminal.

.e proposed Bellanaboy terminal sweet gas from the Corrib field will be processed to ional transmission line standards by adiabatic expansion through a Joule-Thompson valve. he adiabatic expansion of the gas will cause cooling and consequently the drop out of water and hydrocarbon vapour in the gas, which in turn will give it an acceptable dew point for transmission. Whilst not requiring any energy inputs adiabatic expansion does result in a significant pressure reduction, which consequently results in the requirement for downstream compression of the gas to transmission line pressure. This compression does require energy input, and at the terminal it is proposed that this should come from a gas fired turbine compressor package that will be a large producer of nitrogen oxides and carbon monoxide.

At many gas terminals, adiabatic expansion is not the preferred method of cooling the gas for dew point control. Instead, the gas is fed through a series of heat exchangers, cooled on one side by a mechanical refrigeration unit that uses either propane or a HCFC refrigerant medium. This method does not result in a significant pressure drop in the gas pressure, and therefore, providing input pressure is above transmission line pressure, compression after treatment is not required. Mechanical refrigeration also requires the input of mechanical shaft energy and at many terminals this is supplied either by gas fired engines or turbines. These engines can also be large producers of nitrogen oxides and carbon monoxide. However, at smaller processing units, large electrical motors are sometimes used as the source of mechanical shaft energy. (An example of a plant that utilises this technology is the old Hamilton Brothers plant located within the Amoco complex at the Bacton terminal, Norfolk, United Kingdom. Two processing streams with a combined processing capability of 500 mmscfd operate of two large electrical motors powering two compressors using KLEA refrigerant.)

Adiabatic expansion is not the most suitable processing technology for the proposed terminal for two principle reasons :-

1. Emissions are maximised per unit of gas processed
2. Adiabatic expansion can not process gas for the proposed lifetime of the terminal

Emissions are maximised per unit of gas processed because of two factors :-

a. Compression of natural gas is more energy intensive than refrigerant compression
b. Turbine driven machinery is only 30 - 35% efficient at converting fuel energy to mechanical shaft energy

The EIA states that a 7.7MW turbine is required for the compression of the gas after the Joule-Thompson valve, but if a mechanical chilling system was used, only a 2MW turbine would be required for processing the same amount of gas.[1] Assuming both turbines produce similar levels of emissions per megawatt generated, the higher energy input of the 7.7MW turbine would result in approximately three and a half times more emissions than the 2MW machine. Therefore, adiabatic processing is three and a half times more energy intensive, and polluting, than mechanical chilling.

Unfortunately, turbine driven machinery also suffers from the drawback that it is very inefficient, with only 30-35% of the input energy being converted to mechanical shaft energy. Electric motors are far more efficient at converting input energy into mechanical shaft energy, with efficiencies as high as 90%. Electric motors also have the advantage that they do not directly produce nitrogen oxides or carbon monoxide

[1] Figure taken from a 500 mmscfd plant using a Ruston TA1750 for mechanical compression.

efore, an electrically driven refrigerant compressor, if powered in a certain way, is far re advantageous for the environment and energy efficiency. (Electricity generation also esults in emissions of nitrogen oxides and carbon monoxide, so it is possible to argue that using electrical motors does not really stop pollution. However, this point will be addressed later.)

The EIA admits that around year nine of the proposed plant's twenty year lifespan, mechanical refrigeration will have to be installed. The natural drop off in the inlet pressure, as the wells are used and become depleted, will result in insufficient adiabatic expansion and cooling to meet the dew point requirements. Therefore, mechanical refrigeration will have to be installed and used to ensure the export quality of the gas. For anybody not familiar with gas processing, the installation of a major chilling plant is not a simple operation. Major construction will be required at the terminal in year nine, the extent of which will nearly equal the major construction currently proposed. This construction will once again result in large scale disruption to the life of local residents. If it is taken into account that mechanical refrigeration is a more efficient processing technique than adiabatic expansion, it will be required in year nine of the terminals life anyway, and local residents should be inconvenienced as little as possible by the proposed terminal, then Enterprise Oil should incorporate mechanical chilling into the current design of the terminal.

Two further issues should also be considered about the gas processing, and they are :-

1. The type of refrigerant used in any mechanical chilling system
2. The need for the installation of the proposed gas compressors

The EIA makes reference to the use of propane as the refrigerant medium in the proposed mechanical chilling system to be installed in year nine. Whether, a refrigerant system is installed either in year nine, or at the beginning when it should be present, it is surprising to see that propane is being considered as the chilling medium. Propane is a highly flammable gas that by its presence alone causes increased risk for local residents and terminal operators alike. If Enterprise Oil truly wants to reduce the risks for their operations staff, and local residents, they should not select either propane or ammonia as the chilling medium. Instead, a modern HCFC stable refrigerant should be selected. While HCFC still poses a potential threat to the environment, through depleting the ozone layer if released, proper controls should ensure minimal refrigerant is released from the system.

Whilst mechanical chilling is preferential to adiabatic expansion followed by gas compression, it is important to stress that it is the opinion of the author that the gas compression units still be completed in the original construction phase of the terminal. As the wells become depleted and the gas pressure falls it is likely that some compression will be required to meet the export pressure requirements. If the compressors are not installed in the original construction phase, this could again cause disruption for local residents at a later date when they are installed. As they will not be required in the initial stages of operation, if mechanical chilling is used, a set of bypass pipework will additionally be required. This however should not be difficult to incorporate in the design. It is important to stress that the compressors should be driven by electric motors, and not turbines as currently envisaged.

It is stated in the EIA that there is no external grid power for the site and therefore gas driven electrical generators are required. This is again an example of where Enterprise Oil could have chosen better equipment and have missed opportunities to minimise the impact of the proposed terminal on the environment.

virtually acknowledged by everybody involved in fossil fuel generation that the only way meet the requirements of the Kyoto protocol is to build more combined heat and power (CHP) plants that increase the efficiency of generation by utilising waste heat. As well as helping to meet the requirements of the Kyoto protocol these plants also offer the advantage of cutting the net toxic emissions from power plants. At the proposed Bellanaboy Bridge terminal, Enterprise Oil plan to generate electricity using gas fired compression engines that really do not allow for large scale utilisation of waste exhaust heat. In addition to selecting engines that do not allow for much utilisation, Enterprise Oil have also not incorporated any waste heat utilisation into their design.

Earlier in this critique it was argued that the main mechanical shaft energy requirements of the terminal should be met by electric motors, due to the efficiency of energy conversion and the fact that electric motors produce no direct pollution. Despite electric motors not producing any direct pollution, it must be acknowledged that electricity generation does result in the emission of nitrogen oxides, carbon monoxide and in some cases, depending on the fuel, particulate emissions as well. However, if the electrical power for the electrical motors is supplied by a CHP plant, the net toxic emissions for the terminal overall can be greatly reduced.

At the proposed terminal, a 15 MW base duty (43 MW net thermal input) gas fired turbine generator, with a waste heat boiler, should be part of the design. This would meet the electrical power requirements of the plant, both at the beginning and end of its life, and its thermal power requirements, but reduce the output of nitrogen oxides and carbon monoxide by as much as 82% and 97% respectively.[2] Modern gas turbines can be equipped with abatement technology to produce less than two and a half parts per million of nitrogen oxides and one hundred parts per billion carbon monoxide per cubic metre of exhaust gas. It is more than likely at the beginning of the proposed terminals life, 15 MW of electrical power will greatly exceed the power demand of the plant. Therefore, the terminal design should incorporate a power cable to the grid, and any excess power should be exported for sale. As the nearest grid point seems to be some miles away, this will increase capital cost, but this should not be used as a reason by Enterprise Oil to install the plant if they truly care about the environment and the effects of their operations on the local environment.

The greatest advantage of a CHP plant would be that the proposed heating medium heater would not be required. It is stated by the EIA that the greatest impact on air quality will come from emissions of nitrogen oxides, and, whilst nitrogen oxides will be one of the major emissions from the proposed terminal, more toxic emissions that are likely to have a very negative impact on health should be of greater concern. It is proposed by Enterprise Oil that the heating medium heater should be fired on stabilised natural gas condensate from the Corrib field. This is very concerning because it is likely that the condensate will contain a number of toxic heavy metals that will be released into the environment when the condensate is burnt. The EIA gives no major details on the different heavy metals present in the condensate, apart from mercury, and therefore the likely emission rate of them. It admits that if the condensate is not treated emissions of mercury will be unacceptable, but only mentions treatment of the condensate for mercury. However, the type of treatment for mercury removal is not described. The EIA should give details on all the metals present and the likely emission rates, as well as the details of the proposed treatment system for metal removal.

Another undesirable consequence of using condensate as fuel is emissions of all particulates will be higher than if the plant was fired on gas or not used because of the presence of a CHP plant. The EIA gives no details of what the likely ambient concentrations of particulate matter

[2] Based on the figures calculated in appendix I of this critique

Appendix E

Corrib Gas Pipeline Project

Report on Evaluation of Onshore Pipeline Design Code

Report prepared by:

Andrew Johnston

28 March 2002

28 March 2002

Corrib Gas Pipeline Project

Report on Evaluation of Onshore Pipeline Design Code

Table of Contents

28 March 2002

Corrib Gas Pipeline Project

Report on Evaluation of Onshore Pipeline Design Code

1.0 Introduction

Enterprise Energy Ireland Ltd is developing the Corrib Gas Field located approximately 65 km offshore from the County Mayo coastline. The gas is transported from the offshore facilities to the onshore terminal via a 91 km long 20" pipeline, 9 km of which is routed onshore from the landfall to the terminal.

The onshore section of the Corrib Gas Pipeline operates under certain conditions which are unusual, and consequently it is important that careful consideration is given to the selection of the pipeline design code, to ensure that the design takes into account best public safety considerations.

In order to investigate both the applicability of the selected design code, and how the Corrib Gas Pipeline design and operating conditions conform to the code requirements as well as internationally accepted design and construction techniques, this report presents the following:

- An evaluation of those codes which are relevant to the design of onshore gas pipelines, and
- An assessment of design and construction aspects which affect the integrity of the onshore pipeline section.

In doing this, the report identifies the following key aspects of pipeline design and construction which have particular relevance to the Corrib Gas Pipeline, and comments on how the design accommodates them, taking into account the specified code requirements:

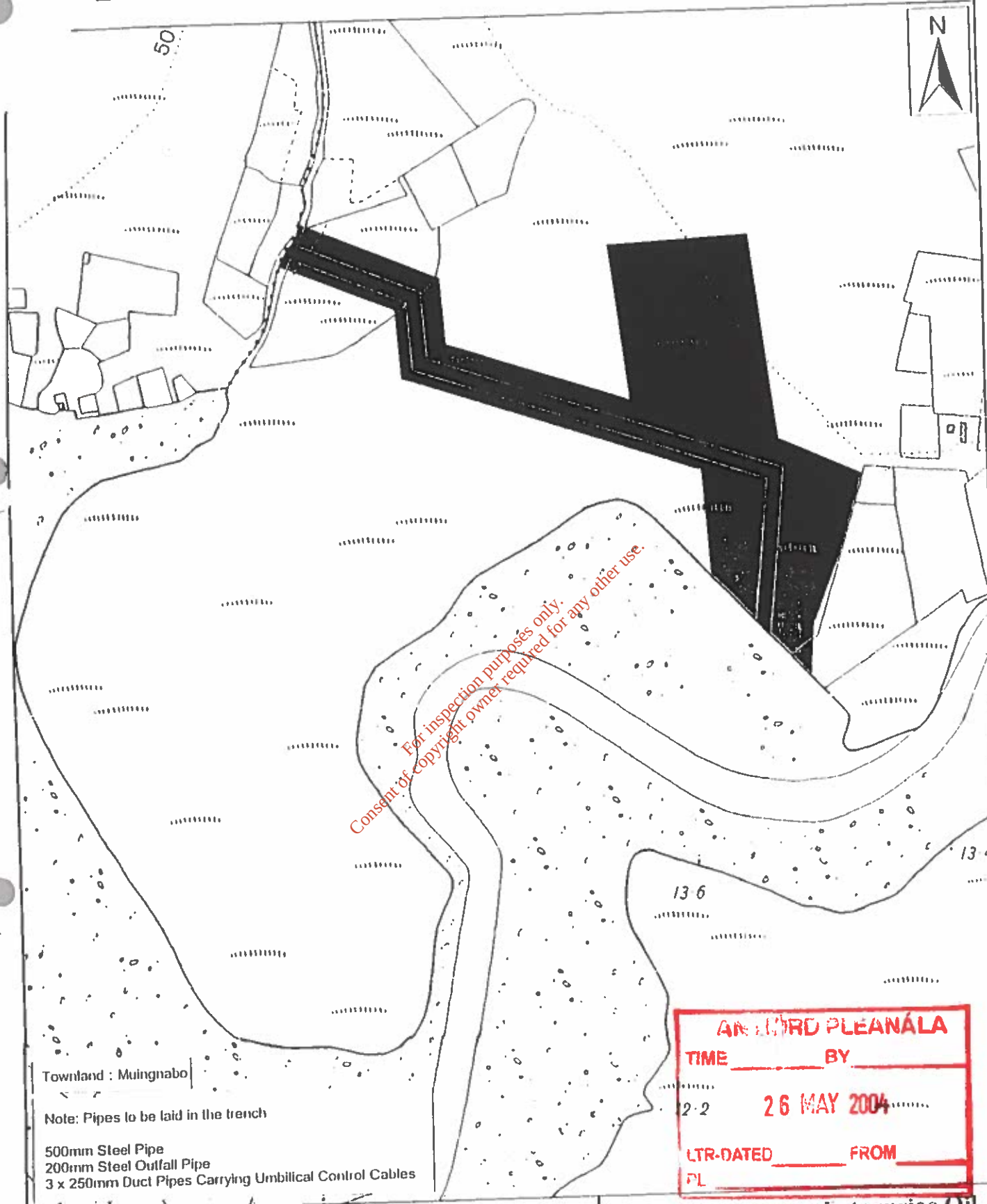
- Design methodology
- Operating conditions
- Pipeline corrosion
- Public Safety
- Welding and testing
- Pipeline material quality
- Protection from interference

The report addresses the whole length of the onshore pipeline, from the landfall point to the terminal, including the two crossings of Sruwaddacon Bay, and the road crossings. The limits of the onshore pipeline are from the mean low water level to the first valve upstream of the pig receiver at the terminal and this section of pipeline includes a valve station near the landfall.

The report uses as a basis design documentation prepared by Enterprise Energy Ireland Ltd., J P Kenny Ltd. and Granherne/Allseas, and

28 March 2002

Appendix F



PROJECT CORRIB - OFFSHORE LANDLINE

Owner/Repuled Owner (shown in yellow):

Name: Teresa McGarry
Address: Gortacrogher, Rossport, Ballina, County Mayo

Approximate Permanent Wayleave Length	725m	Width 14m
Approximate Permanent Acquisition Area (shown in Red)	10150 sq m	
Approximate Deviation Area (shown in Green)	64107 sq m	
Approximate Total Area	74257 sq m	

Ordnance Survey Reference No(s) 992 8

Corrib Field Development Project
Enterprise Energy Ireland Limited
Corrib House
52 Lower Leeson Street
Dublin 2

Enterprise Oil

Drawing Ref 22257/OD10/30660
Sheet 1 of 1

Drawing By N Meadows
Scale 1 5000
Version D

Appendix G

The recent report by the Western Development Commission has shown that the region has lagged behind the

130 jobs during construction
60 direct and indirect jobs during operation.

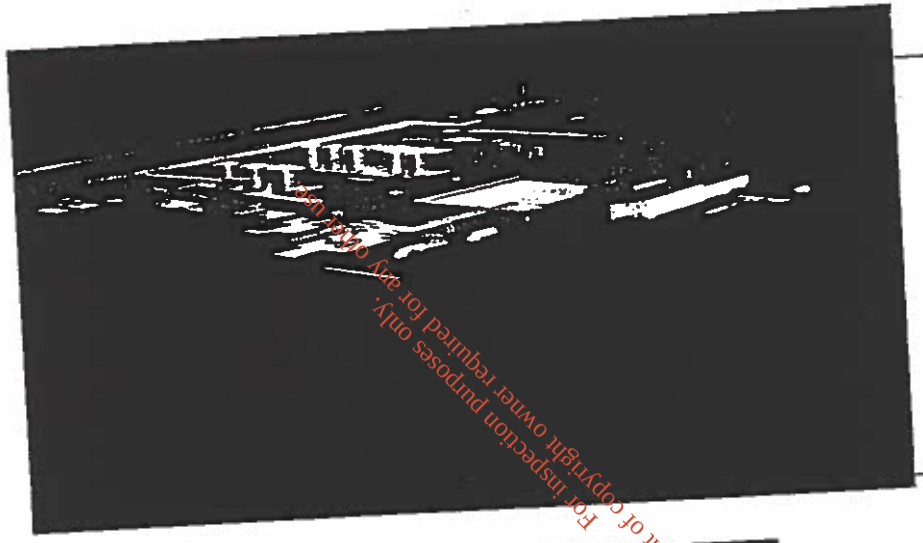
CORRIB natural gas News Letter Issue August 200

The Bellanaboy Facility

A dedicated team has been working on the development of the Bellanaboy facility to ensure top quality design and excellence in environmental standards, as well as compliance with the highest European standards of environmental protection.

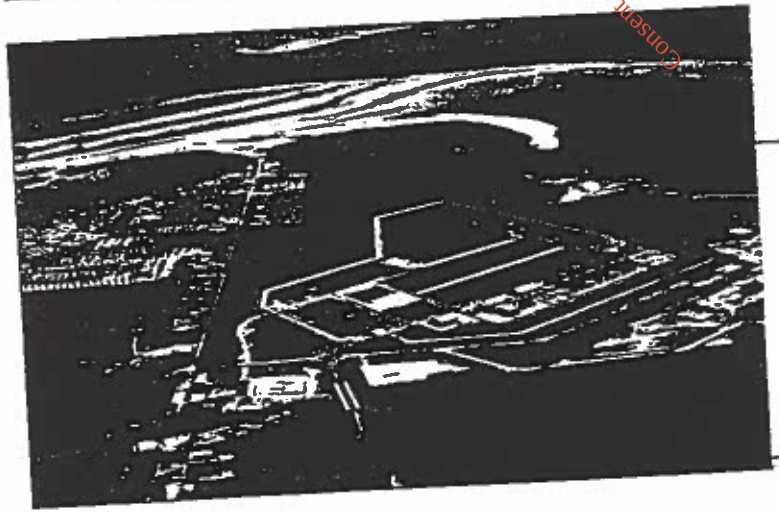
The facility will comprise a number of attractively designed low-rise buildings. These include administration, control room buildings, laboratory and power generating buildings as well as offices and a staff canteen.

The building finishes have been selected to merge with the local landscape in an attractive manner. The site, which was bought from Coillte, is well screened from adjacent roads by mature trees and it has been used over the years for research in improved crop productivity. For the most part, the facility will not be visible from the surrounding road network.



An architectural model of the proposed Onshore Gas facility, Bellanaboy, County Mayo.

The proposed Bellanaboy facility, which is subject to planning permission and Environmental Protection Agency licensing, is designed to world-class standards and will look broadly similar to the onshore Point-of-Ayr facility, North Wales. However, while the Point-of-Ayr facility is located close to the town of Talacre, as the photograph below shows, the Bellanaboy facility will be constructed within an existing forest and secluded behind a deep screen of trees around the site perimeters.



The Point-of-Ayr Onshore Gas Terminal - Broadly comparable in size and style to the proposed Bellanaboy facility.

Developed at a cost of £1.1 billion, the Point-of-Ayr Terminal employs approximately 550 people and contributes an estimated £15 million in goods and services into the local economy each year. The Point-of-Ayr Terminal built in 1995, has made a substantial contribution to attracting new industry into the region and is a source of considerable pride for the local community.

4.9.2 Description of the umbilical

A number of options for construction of the umbilical are presented in **Section 5**. The final selection of the umbilical specification will be made during the detailed design phase of the project in 2001. The umbilical will provide the following:

- electrical power supply levels of approximately 4kVA;
- data transmission;
- low pressure hydraulic fluid supply of 210 bar g to the subsea wells;
- high pressure hydraulic fluid supply of 610 bar g to the subsea wells;
- methanol injections supply of up to 150 bbl/d (1 m^3/hr) for well start-up/shutdown; and
- methanol injection supply of up to 450 – 550 bbl/d (3 – 3.7 m^3/hr) for continuous injection at either the satellite wells or the subsea manifold as required.

The final umbilical design will be based on proven technology providing high levels of reliability and system availability. There will also be a requirement to leave cores within the umbilical free for future expansion of the system if that becomes necessary.

The onshore termination unit (OTU) will be positioned at the landfall and be completely buried. It is expected that it will be constructed of stainless steel (or possibly a composite), and have approximate dimensions of 2.5 m x 1.2 m x 1 m deep. The OTU provides a connection point between the offshore umbilical and the onshore umbilical. The structure of the onshore umbilical is identical to that of the offshore except that the individual elements are not cased in an external sheath. Instead they will be laid in a concrete or composite trough with a cover in order to provide additional mechanical protection during operational use.

The fluid supply cores within the umbilical will be constructed of either super duplex steel or thermoplastic hoses.

4.9.3 Description of the proposed outfall pipe

This is likely to be 8" in diameter and provisionally made of polyethylene (PE) onshore and carbon steel offshore. It will be buried through out its length from the terminal to the landfall in the same trench as the 20" gas line. From the landfall it is likely to be strapped to the 20" gas line, from which it will gain stability. At a short distance from the outfall it will be laid away from the 20" line and will come to the seabed. In this situation it is likely to be held in place by concrete saddles. It may have a diffuser element on the end, which will assist in the diffusion of the effluent, as it enters the sea.

4.10. Statutory Approvals

The statutory approvals/licences/consents that will be required for the Terminal are:

- a Petroleum Lease (to allow the field to be developed);
- planning permission for the Terminal ;
- an IPC Licence (and/or IPPC Licence) for the operation of the Terminal;

Appendix C

MAYO COUNTY COUNCIL
Planning and Development Section,
Aras An Chontae, Castlebar.

Telephone No.:
(094) 24444

LOCAL GOVERNMENT (PLANNING AND DEVELOPMENT) ACTS 1963-1999
PLANNING AND DEVELOPMENT ACTS 2000-2002
PLANNING AND DEVELOPMENT REGULATIONS 2001
NOTIFICATION OF DECISION TO GRANT PERMISSION

TO: **SHELL E & P IRELAND LIMITED**
C/O TOM R. PHILLIPS &
ASSOCIATES
8-11 LOWER BAGGOT STREET
DUBLIN 2

Ref. No. in
Planning Register:
P03/3343
Application Received
On: 17/12/2003
Validation Date:17/12/2003
Additional Information
Received On: 11/03/2004

Notice is hereby given that Mayo County Council has on 30th April 2004 decided to GRANT PERMISSION to the above named, for development of land, in accordance with documents lodged, namely

Re: Planning application for the development of a gas terminal for the reception and separation of gas from the Corrib Gas Field, and for a peat deposition site, respectively.

The development will consist of the concurrent development of two sites located 11 kilometres apart, approximately, and identified as the site of the gas terminal for the reception and separation of gas from the Corrib Gas Field in the townland of Bellagelly South, Bellanaboy Bridge, County Mayo (the Bellagelly South site) and the site of the peat deposition site in the townlands of Srahmore and Attavally, Bangor-Erris, County Mayo (the Srahmore site), respectively.

The development at the Bellagelly South site will consist of: a gas terminal for the reception and separation of gas including plant and equipment; provision of 4,935 sq m (gross floor area), approximately, of buildings; access roads; 40 no. car parking spaces; and ancillary developments, of which 13 ha, approximately, will be developed in respect of the gas terminal's footprint. The proposed development of the Bellagelly South site will also consist of: the excavation and removal of 450,000 cubic metres, approximately, of peat from the Bellagelly South site, off site, to the Srahmore site; civil works, inclusive of foundations and piling; the provision of a single storey control building with a gross floor area of 400 sq m, approximately, inclusive of a control room, offices, equipment rooms, kitchenette, locker room and toilets; the provision of a single storey administration building with a gross floor area of 1,015 sq m, approximately, inclusive of a gatehouse, offices, a conference room and an emergency response room, canteen, kitchenette, laboratory, archive room, first aid room, store rooms, lockers, changing rooms and toilets; the provision of a maintenance building with a gross floor area of 800 sq m, inclusive of a warehouse, stores, mechanical workshop, welding and fabrication shop, instruments and electrical workshops, a plant room, toilets and a maintenance vehicle shed; a weighbridge; and a lattice antenna structure of 22 m in height, approximately, for site-wide radio communications. The development of the Bellagelly South site will also consist of: a diesel storage tank of 75 cubic metres capacity, approximately; a nitrogen generation unit; an air compressor package; a utility area (for plant); a power generation and switchroom building with a gross floor area of 525 sq m, approximately, for the production of electricity for the proposed gas terminal, to include 3 no. generator sets each with a capacity of 1.3 MW; an emergency generator with a capacity of 650kW; 1 no. emergency generator diesel day-tank and 1 no. diesel distribution pump; a high pressure and low pressure flare tower of

0 m in height, approximately; a ground flare with a stack height of some 12 m, proximately; a transformer building with a gross area of 410 sq m, approximately, to include a dv switchroom; a heating medium heater with a stack height of 20 m, approximately; 3 no. flare nock out drums; 2 no. low pressure gas compressors; a methanol recovery system comprising of 1 no. methanol still of 33 m in height, approximately; a heating medium storage tank with a capacity of 40 cubic metres, approximately; a sales gas compressor building with a gross floor area of 890 sq m, approximately, to include 2 no. sales gas compressors, each with a 7.7 MW ISO rated gas turbine driver; a gas-to-gas heat exchanger; a corrugated plate interceptor; effluent feed/treated water sumps; a water treatment building with a gross floor area of 235 sq m, approximately, containing a multi-media filter, ultrafiltration and nanofiltration membrane units, ion exchange beds, an activated carbon filter and a sludge treatment facility; 3 no. condensate storage tanks, of 10 m each in height, approximately, and 10 m each in diameter, approximately; 2 no. product methanol tanks of 8.4 m each in diameter, approximately, and 10 m each in height, approximately; 3 no. raw methanol storage tanks 13.5 m each in diameter, approximately, and 10 m high, approximately; a fire water pond with a capacity of 7,200 cubic metres, approximately; a used firewater pond with a capacity of 5,000 cubic metres, approximately; a firewater pump building with a gross floor area of 660 sq m, approximately, to include 4 no. fire water pumps, each with capacity of 600 cubic metres per hour, approximately, and 4 no. diesel engine drivers, each rated at 265kW (absorbed), approximately; a finger type Slug Catcher; an inlet pig receiver with a withdrawal footprint of 15 sq m, approximately; a sales gas metering unit with a footprint of 200 sq m, approximately; an odorant tank with a capacity of 10 cubic metres, approximately; a sales gas pig launcher with a loading / thdrawal footprint of 15 sq m, approximately; an Onshore Terminal Termination Unit (OTTU) measuring 2 m long by 1 m wide by 2.5 m high, approximately; an electricity substation; a Road Tanker Loading / Unloading area; a waste storage area occupying an area of 990 sq m, approximately; the provision of a number of pipetracks and piperacks joining elements of plant together; the provision of 2 no. settlement ponds and associated drainage arrangements; landscaping works; stock proof fencing around the perimeter of the proposed development; security fencing around the terminal and settlement ponds inside the stock proof fence; paved internal access roads; provision of vehicular access to the R314 via an improved forestry access road and the provision of entrance walls and gates; the reconfiguration of the existing entrance from the site to the R314 to include the widening of the entrance and the provision of a deceleration lane; realignment of the R314 to the south of its current location, at the site entrance, over a length of 115 m, approximately, to the west of the centreline of the existing site entrance and over a length of 80 m, approximately, to the east of the centreline of the existing site entrance (over a total length of 195 m, approximately); an emergency vehicular access road to the county road running between Pollatomish and the R314 via; an improved forestry access road; a new maintenance access and maintenance road from the R314 to the 2 no. settlement ponds; and all other site development works and landscaping above and below ground.

The development will simultaneously consist of the development of a peat deposition site of 117 ha, approximately, at the Srahmore site. The development of the peat deposition site will consist of: the construction of a hardstanding peat reception area of 5,112 sq m, approximately; the provision of a temporary administration building with a gross floor area of 108 sq m, approximately, inclusive of offices, canteen and toilets. The development of the peat deposition site will also consist of: the provision of a new entrance and access road to the peat deposition site from the R313; the construction of internal circulation routes; the construction of a surface water swale along the southern and western boundaries of the site; the provision of 5 no. surface water settlement ponds (2 no. ponds of 800 sq m each; 3 no. ponds of 400 sq m each, approximately). Deposition of peat will take place within an area of 63 hectares approximately. The peat deposition site will also entail the provision of a controlled overflow area of 12 hectares approximately; an oil interceptor; a settlement tank of 28 cubic metres approximately; the provision of a temporary weighbridge and a temporary wheelwash. The development of the peat deposition site will also consist of 5 no. car parking spaces located adjacent to the administration building and 20 no. parking spaces for haulage vehicles at the peat reception area at a site of 160 ha, approximately, in the townland of Bellagelly South, Bellanaboy Bridge, County Mayo, and a site of 117 ha, approximately, in the townlands of Srahmore and Attavally, Bangor-Erris, County Mayo - Shell E & P Ireland Ltd.

based on the reasons and considerations as outlined in the First Schedule and in accordance with the 75 condition(s) set out in the Second Schedule attached hereto entitled "Schedule of Conditions".

on behalf of Mayo County Council

Signed On: 30th April 2004

AN BORD PLEANÁLA
TIME _____ BY _____
26 MAY 2004
LTR-DATED _____ FROM _____
PL _____

5.5. Umbilical

The proposed onshore umbilical system utilises steel tubes for the transportation of hydraulic and methanol supplies. This design philosophy is consistent with that of the Offshore Umbilical System.

However, the use of steel tubes within the Onshore Umbilical System may also present the project with a number of associated issues which will need to be addressed either prior to or during the detail design phase of the work. These include:

- potential transportation and handling problems due to weight of steel tubes on their associated storage reels;
- need for application of additional external corrosion protection coating (epoxy coating or similar covering);
- possible requirement for specialist welding on site;
- potential for increased number of joints/welds due to handling limitations;
- potential for the introduction of increased loads during pulling operations due to increased weight of steel tube elements.

As a means of both addressing and resolving many of the above issues, the Onshore Umbilical System Design Study Report recommended the use of thermoplastic hoses in place of the steel tubes. The use of hoses for both the hydraulic supply and methanol supply services will substantially reduce the weight of each of these supply lines, whilst also eliminating the need for any additional corrosion protection (subject to verification of compatibility issues).

The lighter more flexible construction of these hoses will also make them easier to transport to site and will help to reduce any potential handling and installation difficulties.

To attempt to install these cables and steel tubes as continuous 8,700 m long assemblies will require each element to be pulled through pre-installed conduits from the onshore Terminal site to the landfall site, or vice versa, using large and powerful winches located at either site. The extent of the pulling load needed to complete this operation would be far in excess of the maximum tensile loading of the individual elements and therefore this method of installation was not considered further.

However, the possibility of installing the individual elements as two-piece assemblies, with a single in-line joint in each element is considered to be a technically feasible and practical solution. This umbilical configuration will require each of the Onshore Umbilical System elements to be manufactured as 4,350 m long units (approximately), with the inclusion of a single in-line joint/termination unit located immediately before the second river crossing on the northern bank of the Glenamoy river (see attached map).

The installation process will then require the initiation of a pull through of the individual elements through pre-installed conduits at each of the river crossings with the remaining cable or tube sections then being laid into an open pre-cut trench alongside the onshore pipeline.

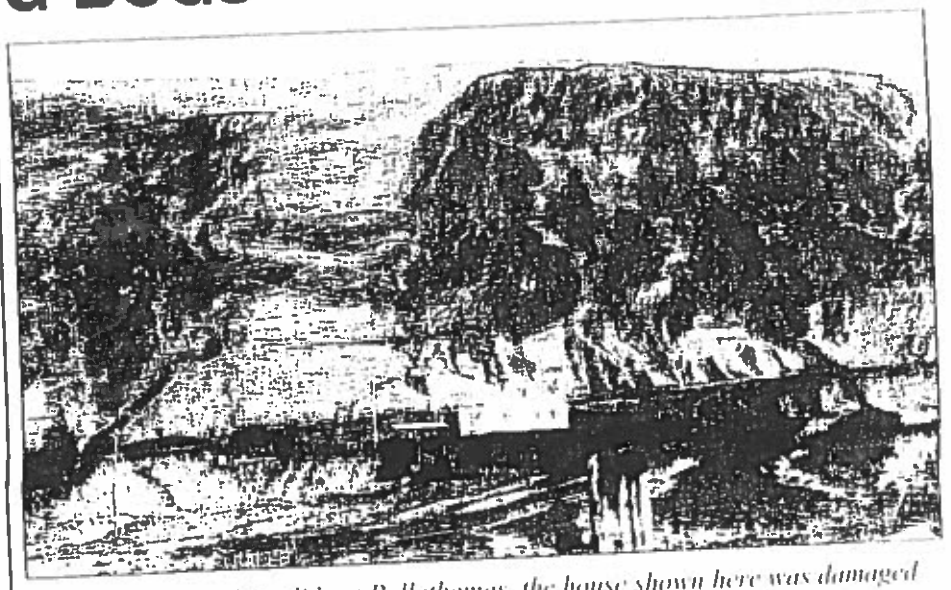
Appendix E

MOVING BOGS – PART ONE

Patsy Mara of Tullywood, Baylin, Co Westmeath, recently informed Scéal na Móna that he once heard someone describe the appearance (when walking) of a very large woman as "like a moving bog". Indicative perhaps that the concept of moving bogs wasn't at all alien to ordinary Irish midlanders, which is understandable when we realize that at least 40 cases of bogs moving or "bursting" were recorded in the last century. This has recently led the Geological Survey of Ireland (GSI) to set up a national "hazard" database that will outline the possibility of such future occurrences as bog slides in potentially hazardous areas throughout the country. That would mean that future planning submissions, etc., may have to take the possibility of such environmental impacts as bogslides into account. The GSI interest had been aroused by the two major 2003 bogslides (see Photos) at Pullathomas in the blanket bogs of Mayo in the North East of the country and at Derrybrien (and the Slieve Aughty Mountains) in the east Galway.

How hazardous moving bogs can be is shown by what happened in 1896 outside Killarney in Co Kerry, when the only known Irish fatal incident associated with such shifting bogs occurred. Robert Lloyd Praeger, the famous Irish botanist who died in 1953, explained in his monumental book, "The Way That I Followed":

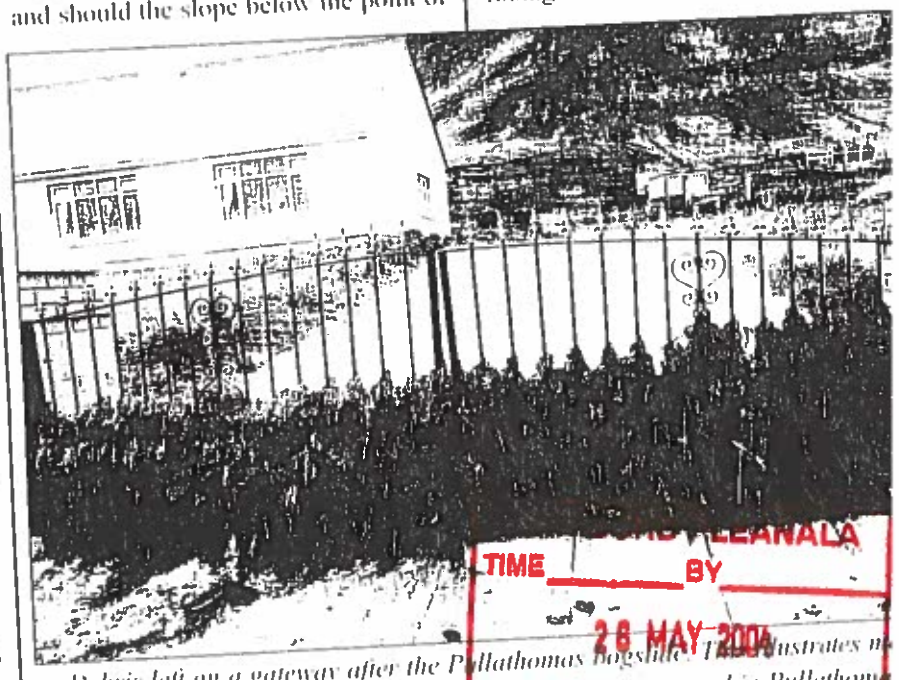
"It was on peat-covered hills near Gneevegullia, out to the north-east of Killarney, that there occurred, three days after the Christmas of 1896, and extensive bog-burst that attracted much attention on account of the tragic circumstances accompanying it, a family of eight persons [who were asleep at the time], their home and their livestock, having been carried away and buried... A vast mass of peat and water precipitated itself down the valley, the flood ceasing only when it entered the Lower Lake of Killarney, fourteen miles distant". Evidence of the environmental impact of this occurrence still exists: when Wayne Trodd and Dr Deelan Murray of UCD took core samples on Lough Leane in 2001 for an EU project they found a layer of peat silt that the bog burst had deposited in the lake.



A section of the bog slide at Pullathomas, the house shown here was damaged and had to be evacuated.

Praeger, who had been sent by the Royal Dublin Society to investigate the incident, explains how bog bursts generally occur. "In certain conditions, the lower layers of a bog may become so highly charged with water that under the pressure of the superincumbent mass of the bog gush out at the lowest point of the floor, dragging the wreck of the more solid upper levels after them. If the bog be large and deep, a great flood of semi-liquid matter may be ejected; and should the slope below the point of ejection be steep, a devastating torren may result".

It has been suggested however tha this year's Irish bogslides were cause by the blanket bogs being desiccated b the unusually dry summer weather, t the extent that they were late vulnerable to the heavy rain whic dislodged them. The GSI also sugges that both events occurred in areas poorly permeable bedrock. The "flo of semi-liquid matter" associated wi the Derrybrien bogslide made excit television viewing, since for the fi time ever RTE Newsreels captur footage of an actual moving bog!



Debris left on a gateway after the Pullathomas bogslide. This illustrates m than words the difference between [illegible] that moved in Pullathom compared with that at Derrybrien.

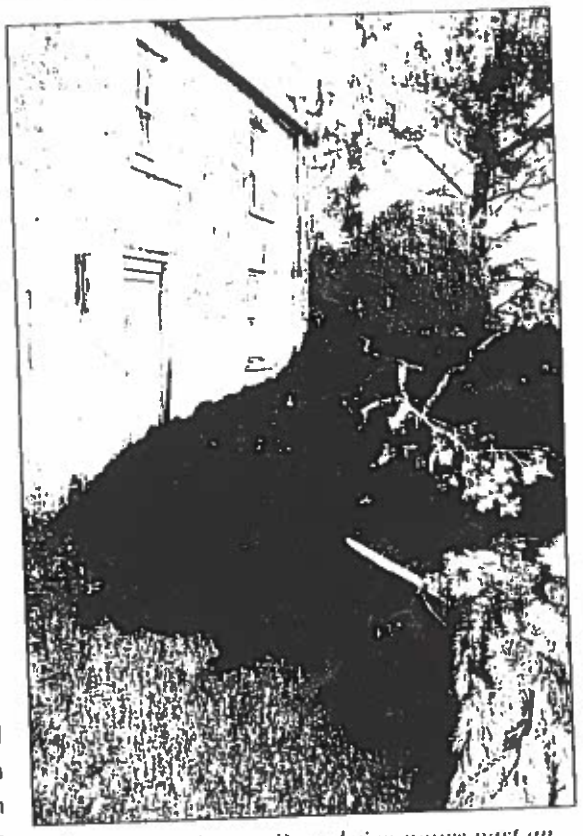
Thankfully there were no fatalities associated with the 2003 bog slides, but both will now result in massive compensation claims. The Derrybrien bogslide has been referred to in the media as an "own goal" for the Irish green lobby in that it occurred on a mountain where a new windfarm is being constructed by Hibernian Wind Energy, a subsidiary of the Electricity Supply Board (ESB). The Government has stated that if the windfarm is found to be responsible for the bogslide the local residents will be compensated. Mayo County Council has recommended a €5 Million remedial plan to offset the damage caused by the Pullathomas bogslide, and locals in that region have been blaming work associated with the Corrib Gas terminal site for causing that avalanche. Proposals to construct the terminal at Bellanaboy, some two miles from the site of the bogslide, were initially turned down by An Bord Pleanála since peat disturbance at the site would cause environmental problems. Bord na Móna and Shell E&P Ireland Limited are presently investigating the option of removing 650,000 cubic metres of peat from the Bellanaboy 15-hectare site and spreading it over cutover bogland at Srahmore near Bangor Erris as part of a rehabilitation process. Concerns have been expressed however that this operation may lead to the siltation of nearby Carrowmore lake, a local reservoir, and Mayo County Council specialists have stated that had the Corrib pipeline already been in place it would have been severed by the Pullathomas bogslide and a "catastrophic disaster" would have occurred. Concerns have also been expressed that the actual site below Dooncarten hill chosen by Shell for its terminal is also surrounded by blanket bog and potentially unstable.

While this article was being finalised a bog burst occurred in Tullywood Bog not far from Patsy Mara's residence in Westmeath. Media accounts suggest that some 48,000 tonnes of bog moved forward in this slide, but perhaps this is a conservative estimate since a few hundred yards of the upper bog (highbank) there slipped forward to push the lowbanks ahead of it in a similar occurrence to what happened in Kilnaborris (Blackwater) Bog in County Galway in the 1930s and Clonfert Bog near Banagher in the first decade of the last century. Children (including the editor's father) who travelled to Esker schoolhouse the morning of the bog slide were amazed to find a new bend in the road, caused by the Clonfert bogslide, on their way home. Val Hough, who lived beside and cut turf on Kilnaborris said the bogslide there rendered a large portion of the bog useless for cutting turf (with the slane) since the bog was "all mixed up".

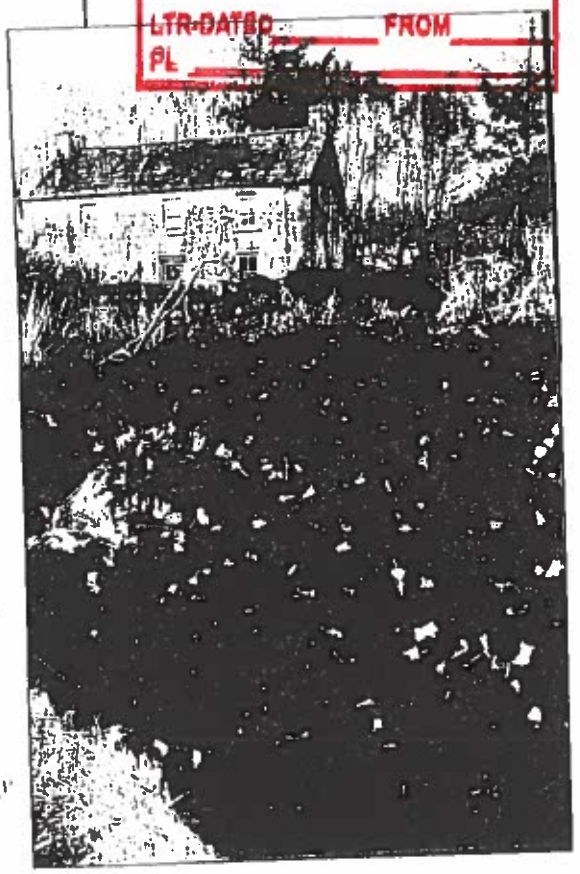
The bog at Tullywood is a beautiful example of a raised bog, surrounded by evergreen forests where turf had been excavated (rather crudely using modern techniques) along a narrow front. This has obviously led to an outburst of pressure along that front since the bog is very wet. Obviously the Tullywood incident is totally different to those at Pullathomas and Derrybrien, since no incline is involved. The pressure at Tullywood results from the natural raised mound of the raised bog above the surrounding mineral soil.

The Irish Environmental Protection Agency (IEPA) recently reported that the bogs of Ireland are in danger of drying out as the temperature rises due to global warming. An IEPA climate report states that "in just 30 years, peat formation could fall by a quarter from current levels, as a temperature increase of just 1 to 2 degrees can have a significant impact."

The situation is so critical that researchers at Trinity College Dublin believe that one species of heath [not specified] may disappear altogether within 50 years. Is this suggested deterioration associated with global warming responsible for, in part, the Pullathomas bogslide - can we expect further such occurrences in the future?



The moving bog at Derrybrien pours past an abandoned farmhouse.



Continuing onward the Derrybrien bogslide engulfed everything before it - this heavy material has the dangerous consistency of quicksand.

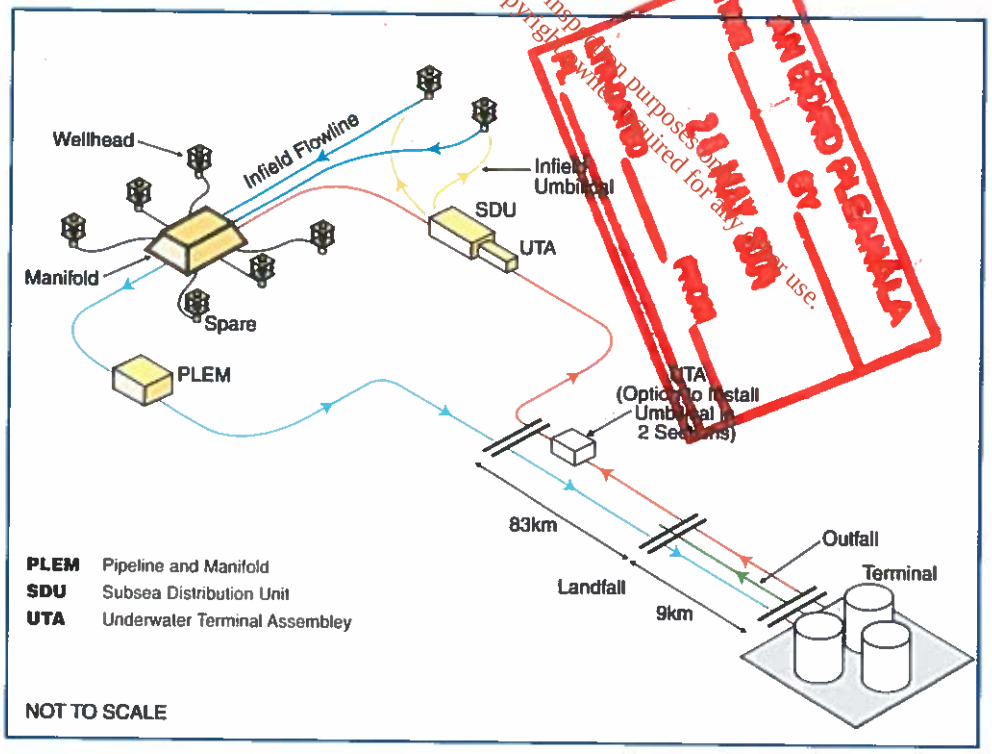
Appendix. F

Bottom of 'boreen' at shoreline fractured + cratered

Photograph Above
Broadhaven Bay, Co. Mayo.

Operations/Maintenance

Periodic inspection surveys from survey vessels will be carried out in the field and along the subsea pipeline. There may also be an occasional requirement for the offshore pipeline to be cleaned or inspected internally using a pipeline integrity gauge, or for intervention work on a well. Pigging and well intervention activities would require a vessel to be stationed in the Corrib field for a short period. On the whole, there will be a limited need for operational or maintenance work on the Corrib facilities or pipeline, due to the high reliability of the systems installed.



Photograph Above
Herring Gull

Photograph Below
Layout Diagram

Decommissioning

An assessment of the options for decommissioning the facilities will be made at the end of the field life. Wellheads and protection frames will be removed and brought to shore for recycling or disposal. Decommissioning options currently considered for the umbilicals and pipelines include full or partial removal. The final choice will be discussed and agreed with the relevant authorities.

Connaught Telegraph 19/5/04

Terrorist fears threat to Mayo gas pipeline

Report by **Tom Kelly** | tkelly@con-telegraph.ie

A LEADING Irish environmentalist has expressed fears that the proposed pipeline from the Corrib gas field in North Mayo could represent a target for a terrorist attack.

Dublin-based Green Party T.D., Deputy Eamon Ryan, revealed he was told by experts that there is no international precedent for such a lengthy pipeline from the shore to the processing point.

Speaking on the Maritime Security Bill 2004 in Dail Eireann, Deputy Ryan stated: "It is interesting that the convention to which we are signing up addresses the safety of platforms when it comes to possible terrorist attacks.

"One of the great risk I see here, if someone were sufficiently demented to try to take on such terrorist activities, is in the proposed development of the gas pipeline from the Corrib gas field, which hits the Irish mainland near Pullathomas, County Mayo, before travelling overland for some 9 km. to the proposed processing station.

"I am told by experts in the field that there is no international precedent for such a lengthy pipeline from the shore to the processing point. The very existence of that pipeline in itself poses quite a risk for the area given possible blockages or other damages that can be caused to it. However, in Iraq at the moment, some of the targets most difficult to protect against terrorist activity are those very pipelines.

"Yet in this country, for reasons about which I am not very clear, we cannot put a processing plant at a landfall elsewhere or provide offshore processing facilities. I am genuinely concerned that, if someone were sufficiently demented and wished to target this country's offshore facilities, that person would not have to go offshore.

"He or she could look at those 9 km. of pipeline, which would be almost impossible to guard, and decide that a small device there would do incredible damage to this country."

Meanwhile, Sinn Fein T.D. Martin Ferrin asked the Minister for Communications, Marine and Natural Resources, **Dermot Ahern**, who will be responsible for accidents that occur along the route of the proposed Corrib gas pipeline, not covered by the terms of the planning permission granted by Mayo County Council.

Minister Ahern replied: "These issues fall within the responsibility of Shell E& P Ireland Limited, the developers of the Corrib project. In my consideration and appraisal of the pipeline proposal, I commissioned a technical evaluation of the onshore pipeline. The evaluation, entitled Corrib Gas Pipeline Project, Report on Evaluation of the Onshore Pipeline, Design Code, was carried out by a pipeline technical expert, Mr. Andrew Johnson.

"Mr. Johnson's report stated that the onshore pipeline design code has been selected in accordance with best public safety considerations and is appropriate for the pipeline operating conditions. Subject to the developers undertakings to comply with a number of conditions laid down in approval and consents granted by my Department, the design is generally in accordance with best national and international industry practice and the pipeline is considered to meet public safety requirements."

Appendix G

Appendix H

HEALTH AND SAFETY AUTHORITY

10 Hogan Place, Dublin 2, Ireland
Telephone [illegible] Fax [illegible]

Ms Imelda Moran,
Church Street
Belmullet,
Co.Mayo.

2[illegible] April 2004.

Proposed Gas Terminal

Dear Ms Moran,

I refer to your request of the [illegible] April requesting information on the HSA report to Mayo County Council.

Whilst the application of the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations preclude the release of much of the information supplied to Mayo County Council except in the context of the Access to Information on the Environment Regulations; it is possible to provide an summary of the key points from the executive summary as follows:

The Authority determined that the risks were at such a level that, according to the land use planning criteria of the Authority for this purpose, it does not advise against the granting of planning permission in relation to this development.

The Authority also makes the following recommendations:

a) Paved areas to be extended to bund walls and arranged so that any accidental releases over bund wall are diverted to the open drains sump

b) Extension of impermeable areas around the slugcatcher such that any potential release is contained.

c) Online Total Organic Carbon monitoring to be installed at silt ponds with provision for automatic re-routing of flow to contaminated firewater pond in event of accidental discharge to system.

d) For the purposes of emergency planning,

arrangements should be made between the applicant and Mayo Co. Co. to provide for traffic control on roads close the terminal in the event of a major accident.

e) For the purpose of control on future development:

Should there be any proposed amendment to the permitted scheme which relates to the control or impact of major accident hazards (as defined by Seveso II Directive) then the amendment shall not proceed until the agreement of the H.S.A. has been obtained.

Health Authority considered the establishment to be the proposed footprint (area within the security fence where the hazardous substances are processed and stored).

The excavation of part of [illegible] Bridge and its deposition [illegible] are outside the scope of the European Communities (Control of Major Accident Hazards Involving Dangerous Substances) Regulations.

Yours sincerely,

John Colreavy,
[illegible] Industrial Unit

Appendix 1

PROPOSED GAS TERMINAL AT BELLANABOY BRIDGE, BELLANAGELLY SOUTH, CO. MAYO & ASSOCIATED PEAT DEPOSITION SITE AT SRAHMORE AND ATTAVALLY, BANGOR, CO. MAYO.

PLANNING REGISTER REFERENCE P03/3343

PLANNING REPORT & RECOMMENDATION.

Iain Douglas
Senior Planner
29th April 2004

circumstances pertain, it is inevitable that the same conclusion and decision must be arrived at. However, if the application is materially different or if the planning considerations are different then the previous decision is not binding. In the case of this current application, P03/3343, change has occurred both in the overall planning context and in the development proposals contained in the application.

Since An Bord Pleanala's decision on P01/900 the overall planning context has changed in two important respects:

- The Planning Context has changed with the adoption of the Mayo County Development Plan 2003-2009.
- The introduction of the Planning & Development Act 2000, in particular section 256 of that Act which links the EPA Act to that Act.

The development as now proposed, while being the same in principle (ie. the provision of a gas terminal), significant different because of the way in which the excavated peat is dealt with, together amendments to the design of the terminal consequent to that change. These change are sufficient to allow reconsideration of the previous decision.

6. MAYO COUNTY DEVELOPMENT PLAN 2003-2009.

Since the last planning application a new county development plan has been adopted by Mayo County Council, the Mayo County Development Plan 2003-2009. The Plan contains both specific references to the development of natural gas and indirect references to the development of the gas network. The Plan also contains other policies and objectives, particularly, Landscape Character, Seveso II sites, Natural Heritage etc. which apply generally to all developments, including this development.

KEY ISSUES.

Natural Resources.

Key Issue:

To ensure that wind-energy and other renewable energy sources, aggregate material and other valuable natural resources including gas, forestry, fishing, aquaculture, fisheries etc are developed to their full potential but in a manner that has due regard to environmental protection, bio-diversity conservation and the preservation of visual, scenic and residential amenities.

Infrastructure Deficiencies.

Key Issue:

The provision of a sound infrastructure base is of fundamental importance to the future development of the county.

Appendix 3

A CRITIQUE OF THE OPERATIONAL METHODOLOGY AND PROCESS COMPONENTS AT THE PROPOSED BELLANABOY BRIDGE GAS TERMINAL, COUNTY MAYO, EIRE.

BY PETER ROSSINGTON B.Sc. (Hons) M.R.S.C.

The benefits of using natural gas as a fuel for power generation in an expanding economy are well known. In fact, in section four of the Environmental Impact Assessment (EIA), for the proposed Bellanaboy Bridge gas terminal, they are even documented. It is stated that, "As the demand for energy increases, it is expected gas will have will have an increasing importance because of the efficiency of energy use in combined cycle gas turbine generators and the resulting relatively benign environmental impact of the emissions". From this statement, and other similar ones throughout the EIA, it is possible to think that Enterprise Oil and its partners understand the importance of energy efficiency and the need to keep toxic emissions to an absolute minimum. However, when the operational methodology and process components for the proposed terminal are studied, the impression is given that at their own facilities Enterprise Oil apply other principles. The proposed Bellanaboy Bridge terminal incorporates some the worst gas terminal design, that actually maximises emissions, minimises energy efficiency and, due to the need for residual construction throughout its lifespan, maximises disturbance for local residents.

Throughout the EIA, the impression is given that Enterprise Oil care greatly about the environment, but their words seem meaningless when the equipment specification is studied and the consequential emissions are considered. In most peoples minds, minimising the impact to the local environment means employing processes and equipment that produce the minimum emissions possible with current technology. However, minimising the impact on the local environment to Enterprise oil seems to mean, with a few exceptions, meeting current legislative requirements for emissions. Many local residents around the proposed terminal have realised the distinction between these two very different definitions given to the same term, and have consequently become very concerned about what this might mean for their health and local environment. This is very understandable when the history of industrial development, and its effects on the environment, is considered. For example, discharges of toxic metals from factories in both Europe and the United States for many years met the legislative requirements of various national governments until it was discovered huge areas of estuaries, rivers and lakes were highly polluted. A classic example of this was lake Michigan, which in the late 1970's was found to contain unacceptable levels of mercury and cadmium. The cause of the pollution was numerous plants discharging supposedly "safe" industrial effluent into the lake. Many of the plants responsible for the pollution were not fitted with technology that could have reduced the emissions of heavy metals to virtually nil, even though it was in existence and well proven.

To truly have a minimum impact on the environment, Governments and companies must adopt a target zero approach, and use technology and practices that minimise or completely stop toxic emissions and maximise energy efficiency. This is something Enterprise Oil has not done at the proposed Bellanaboy Bridge terminal.

At the proposed Bellanaboy terminal sweet gas from the Corrib field will be processed to national transmission line standards by adiabatic expansion through a Joule-Thompson valve. The adiabatic expansion of the gas will cause cooling and consequently the drop out of water and hydrocarbon vapour in the gas, which in turn will give it an acceptable dew point for transmission. Whilst not requiring any energy inputs adiabatic expansion does result in a significant pressure reduction, which consequently results in the requirement for downstream compression of the gas to transmission line pressure. This compression does require energy input, and at the terminal it is proposed that this should come from a gas fired turbine compressor package that will be a large producer of nitrogen oxides and carbon monoxide.

At many gas terminals, adiabatic expansion is not the preferred method of cooling the gas for dew point control. Instead, the gas is fed through a series of heat exchangers, cooled on one side by a mechanical refrigeration unit that uses either propane or a HCFC refrigerant medium. This method does not result in a significant pressure drop in the gas pressure, and therefore, providing input pressure is above transmission line pressure, compression after treatment is not required. Mechanical refrigeration also requires the input of mechanical shaft energy and at many terminals this is supplied either by gas fired engines or turbines. These engines can also be large producers of nitrogen oxides and carbon monoxide. However, at smaller processing units, large electrical motors are sometimes used as the source of mechanical shaft energy. (An example of a plant that utilises this technology is the old Hamilton Brothers plant located within the Amoco complex at the Bacton terminal, Norfolk, United Kingdom. Two processing streams with a combined processing capability of 500 mmscfd operate of two large electrical motors powering two compressors using KLEA refrigerant.)

Adiabatic expansion is not the most suitable processing technology for the proposed terminal for two principle reasons :-

1. Emissions are maximised per unit of gas processed
2. Adiabatic expansion can not process gas for the proposed lifetime of the terminal

Emissions are maximised per unit of gas processed because of two factors :-

a. Compression of natural gas is more energy intensive than refrigerant compression
b. Turbine driven machinery is only 30 - 35% efficient at converting fuel energy to mechanical shaft energy

The EIA states that a 7.7MW turbine is required for the compression of the gas after the Joule-Thompson valve, but if a mechanical chilling system was used, only a 2MW turbine would be required for processing the same amount of gas.[1] Assuming both turbines produce similar levels of emissions per megawatt generated, the higher energy input of the 7.7MW turbine would result in approximately three and a half times more emissions than the 2MW machine. Therefore, adiabatic processing is three and a half times more energy intensive, and polluting, than mechanical chilling.

Unfortunately, turbine driven machinery also suffers from the drawback that it is very inefficient, with only 30-35% of the input energy being converted to mechanical shaft energy. Electric motors are far more efficient at converting input energy into mechanical shaft energy, with efficiencies as high as 90%. Electric motors also have the advantage that they do not directly produce nitrogen oxides or carbon monoxide

[1] Figure taken from a 500 mmscfd plant using a Ruston TA1750 for mechanical refrigeration.

Therefore, an electrically driven refrigerant compressor, if powered in a certain way, is far more advantageous for the environment and energy efficiency. (Electricity generation also results in emissions of nitrogen oxides and carbon monoxide, so it is possible to argue that using electrical motors does not really stop pollution. However, this point will be addressed later.)

The EIA admits that around year nine of the proposed plant's twenty year lifespan, mechanical refrigeration will have to be installed. The natural drop off in the inlet pressure, as the wells are used and become depleted, will result in insufficient adiabatic expansion and cooling to meet the dew point requirements. Therefore, mechanical refrigeration will have to be installed and used to ensure the export quality of the gas. For anybody not familiar with gas processing, the installation of a major chilling plant is not a simple operation. Major construction will be required at the terminal in year nine, the extent of which will nearly equal the major construction currently proposed. This construction will once again result in large scale disruption to the life of local residents. If it is taken into account that mechanical refrigeration is a more efficient processing technique than adiabatic expansion, it will be required in year nine of the terminals life anyway, and local residents should be inconvenienced as little as possible by the proposed terminal, then Enterprise Oil should incorporate mechanical chilling into the current design of the terminal.

Two further issues should also be considered about the gas processing, and they are :-

1. The type of refrigerant used in any mechanical chilling system
2. The need for the installation of the proposed gas compressors

The EIA makes reference to the use of propane as the refrigerant medium in the proposed mechanical chilling system to be installed in year nine. Whether, a refrigerant system is installed either in year nine, or at the beginning when it should be present, it is surprising to see that propane is being considered as the chilling medium. Propane is a highly flammable gas that by its presence alone causes increased risk for local residents and terminal operators alike. If Enterprise Oil truly wants to reduce the risks for their operations staff, and local residents, they should not select either propane or ammonia as the chilling medium. Instead, a modern HCFC stable refrigerant should be selected. While HCFC still poses a potential threat to the environment, through depleting the ozone layer if released, proper controls should ensure minimal refrigerant is released from the system.

Whilst mechanical chilling is preferential to adiabatic expansion followed by gas compression, it is important to stress that it is the opinion of the author that the gas compression units still be completed in the original construction phase of the terminal. As the wells become depleted and the gas pressure falls it is likely that some compression will be required to meet the export pressure requirements. If the compressors are not installed in the original construction phase, this could again cause disruption for local residents at a later date when they are installed. As they will not be required in the initial stages of operation, if mechanical chilling is used, a set of bypass pipework will additionally be required. This however should not be difficult to incorporate in the design. It is important to stress that the compressors should be driven by electric motors, and not turbines as currently envisaged.

It is stated in the EIA that there is no external grid power for the site and therefore gas driven electrical generators are required. This is again an example of where Enterprise Oil have chosen better equipment and have missed opportunities to minimise the impact of the proposed terminal on the environment.

It is virtually acknowledged by everybody involved in fossil fuel generation that the only way to meet the requirements of the Kyoto protocol is to build more combined heat and power (CHP) plants that increase the efficiency of generation by utilising waste heat. As well as helping to meet the requirements of the Kyoto protocol these plants also offer the advantage of cutting the net toxic emissions from power plants. At the proposed Bellanaboy Bridge terminal, Enterprise Oil plan to generate electricity using gas fired compression engines that really do not allow for large scale utilisation of waste exhaust heat. In addition to selecting engines that do not allow for much utilisation, Enterprise Oil have also not incorporated any waste heat utilisation into their design.

Earlier in this critique it was argued that the main mechanical shaft energy requirements of the terminal should be met by electric motors, due to the efficiency of energy conversion and the fact that electric motors produce no direct pollution. Despite electric motors not producing any direct pollution, it must be acknowledged that electricity generation does result in the emission of nitrogen oxides, carbon monoxide and in some cases, depending on the fuel, particulate emissions as well. However, if the electrical power for the electrical motors is supplied by a CHP plant, the net toxic emissions for the terminal overall can be greatly reduced.

At the proposed terminal, a 15 MW base duty (43 MW net thermal input) gas fired turbine generator, with a waste heat boiler, should be part of the design. This would meet the electrical power requirements of the plant, both at the beginning and end of its life, and its thermal power requirements, but reduce the output of nitrogen oxides and carbon monoxide by as much as 82% and 97% respectively.[2] Modern gas turbines can be equipped with abatement technology to produce less than two and a half parts per million of nitrogen oxides and one hundred parts per billion carbon monoxide per cubic metre of exhaust gas. It is more than likely at the beginning of the proposed terminals life, 15 MW of electrical power will greatly exceed the power demand of the plant. Therefore, the terminal design should incorporate a power cable to the grid, and any excess power should be exported for sale. As the nearest grid point seems to be some miles away, this will increase capital cost, but this should not be used as a reason by Enterprise Oil to install the plant if they truly care about the environment and the effects of their operations on the local environment.

The greatest advantage of a CHP plant would be that the proposed heating medium heater would not be required. It is stated by the EIA that the greatest impact on air quality will come from emissions of nitrogen oxides, and, whilst nitrogen oxides will be one of the major emissions from the proposed terminal, more toxic emissions that are likely to have a very negative impact on health should be of greater concern. It is proposed by Enterprise Oil that the heating medium heater should be fired on stabilised natural gas condensate from the Corrib field. This is very concerning because it is likely that the condensate will contain a number of toxic heavy metals that will be released into the environment when the condensate is burnt. The EIA gives no major details on the different heavy metals present in the condensate, apart from mercury, and therefore the likely emission rate of them. It admits that if the condensate is not treated emissions of mercury will be unacceptable, but only mentions treatment of the condensate for mercury. However, the type of treatment for mercury removal is not described. The EIA should give details on all the metals present and the likely emission rates, as well as the details of the proposed treatment system for metal removal.

Another undesirable consequence of using condensate as fuel, is emissions of all particulates will be higher than if the plant was fired on gas or not used because of the presence of a CHP plant. The EIA gives no details of what the likely ambient concentrations of particulate matter

[2] Based on the figures calculated in appendix 1 of this critique

will be from the terminal. This is concerning, because of all of the likely emissions, fine particulate matter is likely to have the most negative impact on health at very low concentrations. It should be shown that the ambient concentration of fine particulates under all conditions will not breach the most applicable air quality standard, that of the United States Environmental Protection Agency, that states fine particulate matter (that under 2.5 microns in size) should not exceed 15 micrograms per cubic metre.

It is greatly concerning that the EIA has also not studied human exposure to toxic species emanating from activities at the proposed terminal. For example, whilst the combustion of condensate might result in acceptable ambient concentrations of metals and other fine particulates, the build up of these substances in the local environment could result in exposure that in the long term could result in health damage. Metals do not just disappear from the environment once released into it, and some organic compounds can also be very persistent. Therefore, exposure can be far greater than that calculated by resultant ambient air concentrations. Most heavy metals accumulate in biological systems and this can have long term consequences for human health. The EIA also does not give any details on the likely exposure to radioactive species that could certainly be released if condensate was used as a fuel. This is completely unacceptable.

Due to the risks it poses to human health, the use of natural gas condensate as a fuel should not be allowed at the proposed terminal. The stabilised condensate should be collected and then tankered off site to a refinery where there should be appropriate equipment for dealing with its metal content. If stabilised correctly, this should pose no more hazard than a tanker moving petrol around.

At many United Kingdom gas terminals over the last few years there has been great effort put into reducing emissions of methane and VOC's, so that the requirements of the Kyoto protocol can be met. While it is impossible to completely stop these emissions, this is again an area where Enterprise Oil have missed opportunities to reduce emissions. By selecting fixed roof tanks that vent to atmosphere, and using a flare for dealing with gas from equipment depressurised for maintenance, annual emissions will be higher than necessary. Depressurisation vents and breather vents should all be fed to a low pressure recycle system. The system could simply consist of a vessel held just below atmospheric pressure by an electric motor driven compressor that operates on demand when the pressure in the vessel rises due to discharges from vents. The compressor should discharge into the inlet of the treatment facilities so that the gas can be re-used rather than wasted. Whilst, if all equipment is working correctly, venting emissions should be reasonably low, plant design should cater for the fact that at times plant can operate incorrectly and cause large emissions. At the Amoco terminal, in Bacton, Norfolk, the condensate stabilisation column malfunctioned. This resulted in emissions from the condensate tank, due to unstabilised condensate, being over one hundred times the estimated and allowed level. It was over a year before it was realised the situation was occurring. A similar situation could easily occur at the proposed terminal.

The EIA also makes no reference to emissions from the methanol reboilers. It is stated that condensed methanol from the still flows to accumulators, and if the accumulators are similar to others on methanol reboilers they will have atmospheric vents on them. Aromatic hydrocarbons found in condensate are appreciably soluble in methanol and will pass into the reboiler with the methanol. They will then evaporate off with the methanol and pass into the accumulator. If the overhead condenser does not cool the methanol and aromatic hydrocarbons substantially, the hydrocarbons will stay in a vapourised state and pass out into the environment through the vents. This can be a cause of significant emissions, and therefore if there are vents on the accumulators they must be connected to a vapour recovery system.

In section 10 of the EIA it is stated that "Enterprise Oil are considering installing air quality monitoring equipment in the vicinity of local housing after the terminal has commenced operation". Any company that is truly concerned about the effects of its operation on local communities would give a firm commitment to monitoring to ensure its emissions are not having an impact on residents health. It is also important that the company, as well as giving a firm commitment to monitoring, are more specific about the type of monitoring to be carried out and what they will offer in terms of compensation if they do break air quality standards or expose residents to harmful emissions. It is concerning that in section 10 it is proposed air monitoring will be carried out using passive diffusion tubes. Air monitoring must be carried out using real time monitoring equipment, so that any large scale emissions are not averaged out and it can be seen if short term air quality standards are broken. The following emissions must be monitored by Enterprise Oil, and preferably by the methods listed :-

1. Nitrogen oxides, analysed using a chemiluminescence monitor.
2. Carbon monoxide, analysed using a non-dispersive infrared monitor.
3. Ozone, analysed using an ultraviolet absorption monitor.
4. Benzene, xylene, toluene and ethyl benzene, determined by gas chromatography.
5. Mercaptan, determined by gas chromatography.
6. PM2.5 & PM10 particulates, determined by a beta attenuation monitor.

In addition to the above continuous monitoring, quarterly analysis should be carried out on the composition of the particulate matter. This monitoring must check that emissions of mercury, radioactive substances and other metal are highly limited and within orders of magnitude close to background levels.

Whilst the treatment of different aqueous effluents, with different characteristics, precludes the use of one simple water treatment system at the terminal, the proposed treatment system, and its operational methodology, pose many questions and concerns. For example, it is concerning that the EIA for the aqueous effluent uses many assumptions and relies on further work being undertaken on the performance of many pieces of equipment. It is also concerning that no figures are given on the volume of waste that will be produced as the result of the treatment plant, the impact of this waste on the environment or on safeguards if one or more pieces of equipment fail to perform adequately.

The aqueous effluent poses a threat to the aqueous environment because of two principle types of contamination;

- heavy metals in the produced water
- organic compounds in both the produced water and collected water

(Collected water being the term used for collected rainwater, sanitary water and firewater. The term organic is used in its chemical sense of referring to carbon based compounds and not in the sense of something being environmentally friendly.)

The proposed treatment system is supposed to deal with the contamination in both types of water and produce a reasonably pure effluent, but few answers are provided in the EIA on what the concentration of species will be in the final effluent and what will occur if the system doesn't perform correctly and the effluent isn't to specification. The EIA states that the concentration of the different contaminants in the effluent will be at, or below, EQS levels, but does not state clearly what these are.

The primary concern of what will occur if effluent leaving the treatment plant isn't to specification must be addressed by Enterprise Oil. The EIA states that monitoring will be undertaken to ensure effluent is at the required specification, but again the EIA is short on actual detail. From information in the EIA, it seems possible that the concentration of heavy metals in the effluent will only be determined once a year. Therefore, in theory, the dissolved air flotation (DAF) unit for removing heavy metals could malfunction one week after measurement and not be corrected until a year later, in which time large amount of heavy metals might be discharged. To guarantee the protection of the environment, Enterprise Oil must install online monitoring for all the following of the following parameters :-

- pH
- total organic carbon
- suspended solids
- polyaromatic hydrocarbons and phenol
- ammonia and total nitrogen
- sulphides
- all heavy metals

Probes, ion specific probes, continuous sampling chromatographs and specific component analysers are available for measuring all of the above parameters. The results from the online equipment must be fed into a computer control system that will stop discharge of the effluent, by an interlock, if any of the parameters are out of specification. The interlock could be as simple as a relay switch that stops the discharge pump working if the effluent is out of specification. It must be part of the systems design that the interlock can not be easily over ridden by anybody on the plant, and if it is, must be done in the presence of an independent witness.

The concern about the actual performance of the plant must also be addressed by Enterprise Oil. Hard data on the treatment plants performance must be given. Stating that EQS levels will be met is not satisfactory. The concentration of some pollutants, for example heavy metals, might be several magnitudes of order larger than natural background concentrations, and will consequently mean that the receiving environment (Broadhaven Bay) is still effectively a dump for industrial effluent. For contaminants such as heavy metals, the concentration in the effluent should be equal, or less, than natural background levels found in seawater in Broadhaven Bay.

One of the principles listed in the EIA for the management of wastewater is "recycle where practicable". This is an excellent principle, but does not seem to have been greatly incorporated into the design of the water treatment plant. Treatment of such a complex effluent as the produced water will always result in some sort of external waste, but the current design does seem to maximise the production of this waste. Improvements could be made on the recycling of contaminants if other technologies were employed.

For example, if the produced water was flash distilled to remove salts before being mixed with collected water, tertiary treatment of the effluent could be by reverse osmosis (R.O.), with back up treatment by GAC if the R.O. plant failed or very large volumes needed to be treated quickly, as would be the case in the event of a fire. An R.O. plant could concentrate the organic pollutants in the raw water by as much as 9 times, while 90% of the incoming effluent could be discharged as clean water. The concentrated effluent on the raw water side of the membranes could then be recycled to the condensate / methanol separation vessel, allowing maximum recovery of organic pollutants. A small proportion of the clean water from the R.O. plant could be fed to the flash distillation unit to re-dissolve the precipitated salts.

This solution, still contaminated with heavy metals, could then be fed to the DAF for heavy metal removal. The cleaned saline solution could then be mixed with the clean water from the R.O. plant to produce a solution fit for discharge. If certain ion exchange resins were used for the removal of heavy metals it might also be possible, if the correct metallurgical works exist, to reclaim many of the metals. The DAF unit precipitates heavy metals as the insoluble hydroxides or sulphides. These precipitated salts are then removed with other suspended solids in filter systems. However, by mixing the precipitated salts with other suspended solids, reclamation becomes far more complex and difficult. (In the supposed BAT assessment of treatment technologies for effluent clean up, ion exchange is stated as having the same problems as membrane technology. Whilst the assessment of membrane technology is far from perfect, the comment about ion exchange resins is very short on facts. There are at least two manufacturers who produce complexing resins especially for the removal of heavy metals from aqueous streams. Due to the fact that these resins only interact with the unique d-electron chemistry of heavy metals, they will not suffer from the normal drawbacks of ion exchange resins.)

Whilst it is possible to argue this system will require extra energy, has increased complexity and hence a greater risk of malfunction, it is also possible to argue that it brings many advantages. For example, if the DAF unit were to malfunction, only the salts produced in the flash distillation unit would have to be tankered off site for disposal, where as with the current system all off the effluent would have to be taken off site for disposal. The argument about extra energy use would also not be applicable if, as suggested earlier, a CHP plant was installed to meet the power and heat requirements of the site. It should also be remembered that vacuum distillation could be applied to the flash unit, therefore only minimally increasing the amount of energy used in the plant.

From conversations with local residents around the proposed terminal, it seems that Enterprise Oil are promoting the Bellanaboy terminal as a state of the art facility, and consequently local residents have nothing to fear from its presence or operation. However, as this critique has shown, the proposed terminal is far from being state of the art and does not incorporate technology that will minimise emissions, or maximise energy efficiency. Therefore, whilst the pollution impact of the terminal might be reasonably small, it can not be said to negligible, and local residents are right to be concerned. If Enterprise Oil are truly concerned about their impact on the environment and the communities in which they wish to operate their facilities, they must now consider re-design of the terminal to incorporate many of the components mentioned in this critique and truly produce a state of the art facility.

Peter Rossington B.Sc. (Hons) M.R.S.C. P.G.C.E.
20th September 2001.

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Kingston upon Hull, HU5 2RH, United Kingdom.
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Appendix 1

Below is a table that shows the major nitrogen oxide and carbon monoxide emission sources for the proposed terminal. For each component at the terminal the predicted emission level is shown. The last column shows the power required for an equivalent piece of equipment if a CHP plant was installed instead.

(The CHP power required was calculated from the power rating of the component, assuming an equivalent electrical motor was 90% efficient and an equivalent thermal plant was 60% efficient. Although not part of the current design, refrigeration units have been included to show future power requirements.)

Component	Power Rating (Megawatts)	Thermal Input (Megawatts)	NOx (tonnes per year)	CO (tonnes per year)	Power Req'd (Megawatts)
Heater	5.0	7.1	7.262	1.816	8.3 (thermal)
Compressor	7.7	25.7	18.789	25.053	8.6 (electrical)
Generators	2.1	2.4	49.270	85.067	2.1 (electrical)
Refrig. Units	2.0	5.0	N/A	N/A	2.3 (electrical)
TOTALS		40.2	75.321	111.936	

As can be seen, if refrigeration units are included, the thermal input for proposed components is nearly equal to a 15 MW base duty (43 MW net thermal input) CHP plant.

However, while there is little difference in thermal input, the effect of a CHP plant on emissions must be considered.

The proposed components result in 75.321 tonnes of nitrogen oxides per annum and 111.936 tonnes of carbon monoxide per annum.

A 50MW base duty (125 MW net thermal input) General Electric LM6000 gas turbine, fitted with the latest abatement equipment, will produce 43.8 tonnes of nitrogen oxides per annum and 8.760 tonnes of carbon monoxide per annum.

If a 15MW base duty turbine produces similar emission figures to the LM6000 per MW, then the expected nitrogen oxides and carbon monoxide emissions will be :-

15/50 x 43.8 = 13.14 tonnes of nitrogen oxides per annum
15/50 x 8.76 = 2.62 tonnes of carbon monoxide per annum

Therefore, the reduction in NOx from the CHP plant would be :-

$$\{(75.321 - 13.14) / 75.321\} \times 100 = 82.5\%$$

The reduction in CO from the CHP plant would be :-

$$\{(111.936 - 2.62) / 111.936\} \times 100 = 97.6\%$$

Appendix K.

Gortacragher
Rossport
Ballina
Co Mayo

15/10/01

Mr Frank Fahey
Minister for the Marine and Natural Resources
Leeson Lane
Dublin 2

Re: Brown-coloured insoluble slick

I wish to draw your attention to the fact that I have observed a brown-coloured insoluble slick along Sruwaddacon Bay (cSAC and SPA), an estuary to the south west of Broadhaven Bay (cSAC). This latest pollutant extends as far as the Glenamoy and Muingnabo rivers which are key salmonoid spawning grounds.

I would also like to draw to your attention the fact that Enterprise Energy Ireland had a floating platform facility at the mouth of Sruwaddacon Bay in late September 2001 and since that time I have made the above observations.

I enclose copies of correspondence to date with The North Western Regional Fisheries Board. In a letter dated 25/09/01 which I received from Vincent Roche, CEO I draw your attention to paragraph two. Mr John Hegarty informed me that he sent a message by fax to the pollution section of the Department of the Marine and Natural Resources. However, according to Vincent Roche, Mr Hegarty *"reported the incident to the Department's Marine Rescue Co-ordinating Centre"* and that The North Western Regional Fisheries *"Board was not notified of any threat to the Glenamoy river by MRCC in recent weeks or months"*. There is a conflict here, which needs to be clarified.

I have sent a sample of this pollutant to a laboratory for analysis (as The North Western Regional Fisheries Board have neglected to carry out any analysis to date) and I have a series of photographs (enclosed) which I have distributed to various other individuals and relevant organisations. As it is the remit of the Department of the Marine and Natural Resources to protect our marine environment I trust that you will act accordingly.

Yours sincerely

Brid Mc Garry

c.c.

Western People 03/10/01

Broadhaven 'slick' nothing to do with us: EEI

ENTERPRISE Energy Ireland has rejected out of hand the speculation that a "slick" discovered in Broadhaven Bay has anything to do with their operations in the area, *writes CHRISTY LOFTUS.*

The company has checked with all of its contractors that there have been no discharges from any of their vessels operating in the area. They added that EEI was not currently conducting any seismic surveys in the Erris area and that its last small survey was completed over a month ago.

Their comments came following media speculation over the weekend that the slick- thought locally to be the result of a discharge from a vessel at sea- resulted from work undertaken in connection with the planning of the gas pipeline to the planned terminal and the discharge pipe.

An Enterprise Energy spokesman added that the company concluded dye dispersion tests in the Bay in late August using a very small quantity of a harmless biodegradable vegetable dye. This dispersion test he said, "had no impact on the marine environment and is completely unrelated to reports of a coloured slick in the Bay.

"Enterprise Energy conducts all its work in the Erris area and offshore to the highest environmental protection standards and is committed to do so at all stages of the development and operation of the Corrib gas field," said the spokesman.

Mayo News 31\10\01

Origin of Broadhaven Bay pollution uncertain

A SPOKESPERSON for the Department of the Marine and Natural Resources said last night that further investigation of the material which appeared in Broadhaven Bay in North Mayo last month showed that it was organic in nature, "but there is no conclusive evidence of its source or origin." This is a rowback on an earlier suggestion that the pollution had been traced to waste mushroom compost, a suggestion that has been vigorously denied locally.

Reports of a brown slick in the bay were received by the Department on 5th September and an analysis of samples taken indicated that it was not an algal bloom. Further information received suggested waste compost as the cause of the slick. Erris Inshore Fishermen had earlier claimed that the slick could be linked to seismic tests being undertaken offshore by Enterprise Energy Ireland as part of the development of the Corrib Gas Field Project. This claim was very strongly refuted by EEI who said there was not a shred of evidence to suggest that it was the source of the pollution in the bay. It confirmed, however, that dyes had been used to examine current flows as part of the environmental impact assessment which the company was obliged to provide in advancing the gas field project.

The Department spokesperson said that the fact that the material was found in Broadhaven Bay did not imply that it was of local origin and that, due to current movements, it could have originated from outside the area.

Mystery pollution in Mayo bay identified

THE composition of a slick that appeared in Broadhaven Bay last month has been identified as waste mushroom compost, the Department of the Marine and Natural Resources has revealed.

The compost is thought to have been illegally dumped in the early days of September.

Reports of a brown slick were received by the Department of the Marine and Natural Resources on September 5th and initial descriptions suggested that it may have been a form of algal bloom (red tide).

Both samples of water and sediment were sent to the Marine Institute's Phytoplankton Laboratory and found to contain no indication of an algal bloom in either sample. Subsequently, information was received by the Departmental officials to the effect that waste mushroom compost may have been responsible for the slick.

The Department statement said the matter had been investigated and the Department was now satisfied that illegally dumped waste mushroom compost was the source of the pollution.

Enquiries into the illegal dumping are continuing.

The Department of the Marine and Natural Resources said the fact the material was found in Broadhaven Bay did not imply that it was of local origin and that due to current movements in the sea it could have originated from outside the area.

Mayo News 07/10/01

Enterprise Energy comments on Broadhaven Bay speculation

ENTERPRISE Energy has responded to speculation and comment on local radio (Friday, 28th September 2001) by saying that the company has no connection whatsoever with the coloured slick that has been reported in Broadhaven Bay.

The company also confirmed with all of its contractors that there have been no discharges from any of their vessels operating in the area.

In addition, the company said that Enterprise Energy is not currently conducting any seismic surveys in the Erris area and that its last small survey was completed over a month ago.

An Enterprise Energy spokesman added that the company concluded dye dispersion tests in the Bay in late August using a very small quantity of a harmless biodegradable vegetable dye.

This dispersion test, he said, "had no impact on the marine environment and is completely unrelated to reports of a coloured slick in the Bay."

"Enterprise energy conducts all its work in the Erris area and offshore to the highest environmental protection standards and is committed to do so at all stages of the development and operation of the Corrib gas field".

Photo of 'oily slick' carried via current towards the upper section of the Glenamoy river.

Photo of 'oily slick' taken where the Glenamoy river discharges into Sruwaddacon Bay.

Viewpoint from Gortacraghee 'oily slick' is contained along shoreline towards the Glenamoy river from Sruwaddacon Bay.
Interface between shoreline + water is actual slick.

Opinion&Analysi

Fintan O'Toole

Exploration firms strike it rich here

What's the most valuable piece of real estate in Ireland? Dublin's Grafton Street, perhaps, or some exclusive resort in the west? Charles Haughey's former estate at Abbeville or Michael Flatley's magnificent mansion in Cork?

Actually you could have all of these for a relative pittance compared to a large patch of bleak seabed, 350 metres beneath the heaving ocean and 70 kilometres west of Achill Island. The Corrib gas field that lies beneath it is probably worth around €20 billion. The good news is that it belongs to all of us. The bad news is that it's been given away.

One of the classic images of under-development is that of ordinary Nigerians risking their lives to siphon off oil from pipelines leaving their home areas. They live in a place with abundant natural resources, and they carry the environmental burden of oil production. But they can't afford to buy the oil themselves. The benefits of what is rightly theirs have been carved up between dodgy local élites and huge transnational corporations.

This, of course, is what happens to them, the wretched denizens of the Third World. But what's happening with the Corrib field is not all that different. Earlier this year, An Bord Pleanála refused permission for the developers of the field, Enterprise Oil, a company bought by Royal Dutch Shell for £3.5 billion sterling, to build a terminal in north Mayo. The main ground for refusal was the company's bizarre proposal to shift an entire bog – some 650,000 cubic metres of peat – thus creating a huge environmental risk. Now the pressure is on to give the company what it wants.

While the immediate argument is about the tension between economic development and the protection of local communities, there is a larger dimension to the issue. It is, crudely, the issue of what's in it for us. We are collectively the owners of this fantastic resource. But in reality, it's been given away for remarkably little.

Between 1975 and 1992, any company producing oil or gas in Irish waters was required to pay royalties to the Exchequer. The State also had the right to participate in the development of the resources. After a slump in exploration, however, the Fianna Fáil/Progressive Democrats government decided, in 1992, to introduce new terms for the oil and gas companies. Stating that "since the Government do not consider that direct State involvement in this area of activity is appropriate, the pursuit of their policy objectives requires that competent private sector companies be encouraged to invest in the search for and production of oil and gas in Irish waters", it set about luring the companies back in with astonishingly generous terms.

All royalties and production levies were abolished. The pitch to the companies was an object plea to come hither: "Most importantly, the treatment in Ireland of profits generated by oil and gas production compares very favourably with other countries. Furthermore, the structure of the tax regime is such that greatest potential benefit can accrue to those who make early commitments to exploration licences and the drilling of wells . . . The industry will find in Ireland an attitude which is receptive to and encouraging of its efforts."

Corrib gas field is probably worth €20 billion

The terms are indeed extraordinarily alluring. As the official information for would-be prospectors puts it, "There is no State royalty of any form. There is no State participation of any form." The fees charged are derisory: between €83 and €335 per square kilometre a year for a deepwater exploration licence, between €27 and €111 a year for a so-called frontier exploration licence, and €3,785 a year for a square kilometre of ground that is actually producing oil or gas.

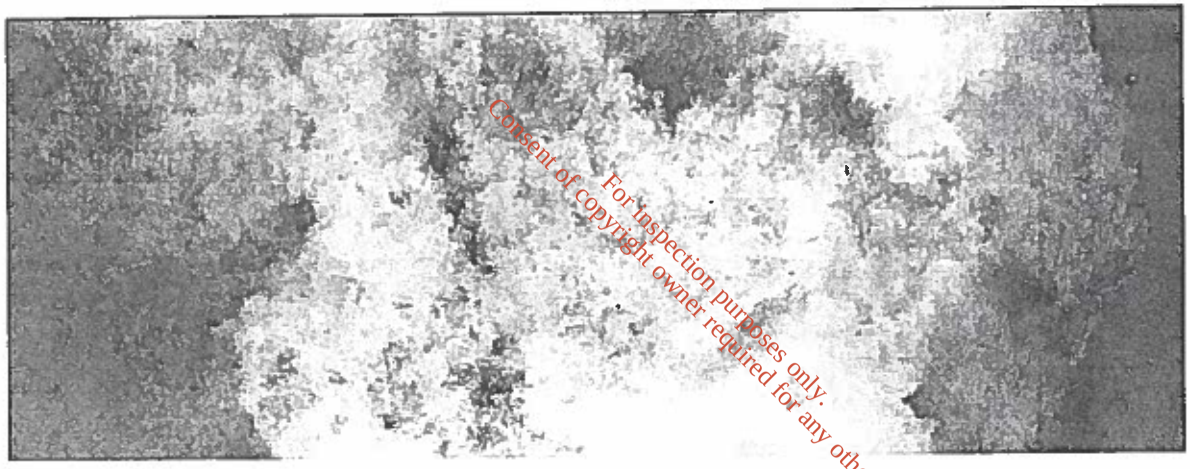
When it gets the Corrib field up and running, Enterprise Oil will be able to sell the gas to us at full market rates. The only money that will accrue directly to the Exchequer is a 25 per cent corporation tax on its profits at a much lower tax rate than most ordinary workers have to pay in Ireland. And it applies of course to other recent and potentially lucrative finds, such as the Seven Heads field off Cork and the Dooish well off Donegal.

In the UK, for example, where the terms were set by Tory governments not noted for their severity on private companies, licences signed before 1993 require the companies to pay a special tax of 50 per cent of profits after certain allowances, itself a reduction from the previous rate of 75 per cent. Companies that signed their licences after 1993 have to pay a special ring-fenced corporation tax (to prevent them from offsetting losses elsewhere against oil and gas revenue) of 30 per cent, and a supplementary tax of 10 per cent. They also pay very substantial fees for the concessions they operate. None of this has prevented the oil giants like Shell from investing in the North Sea, or from making very handsome profits.

We may well be stuck with the terms given to companies like Shell when they started to explore off Ireland in the first place. But significant increases in tax on oil and gas profits must surely remain within the rights of a sovereign government. Even Shell, looking at social welfare cutbacks and squalid public provision, must reckon that a State that is so generous to them is great gas altogether.

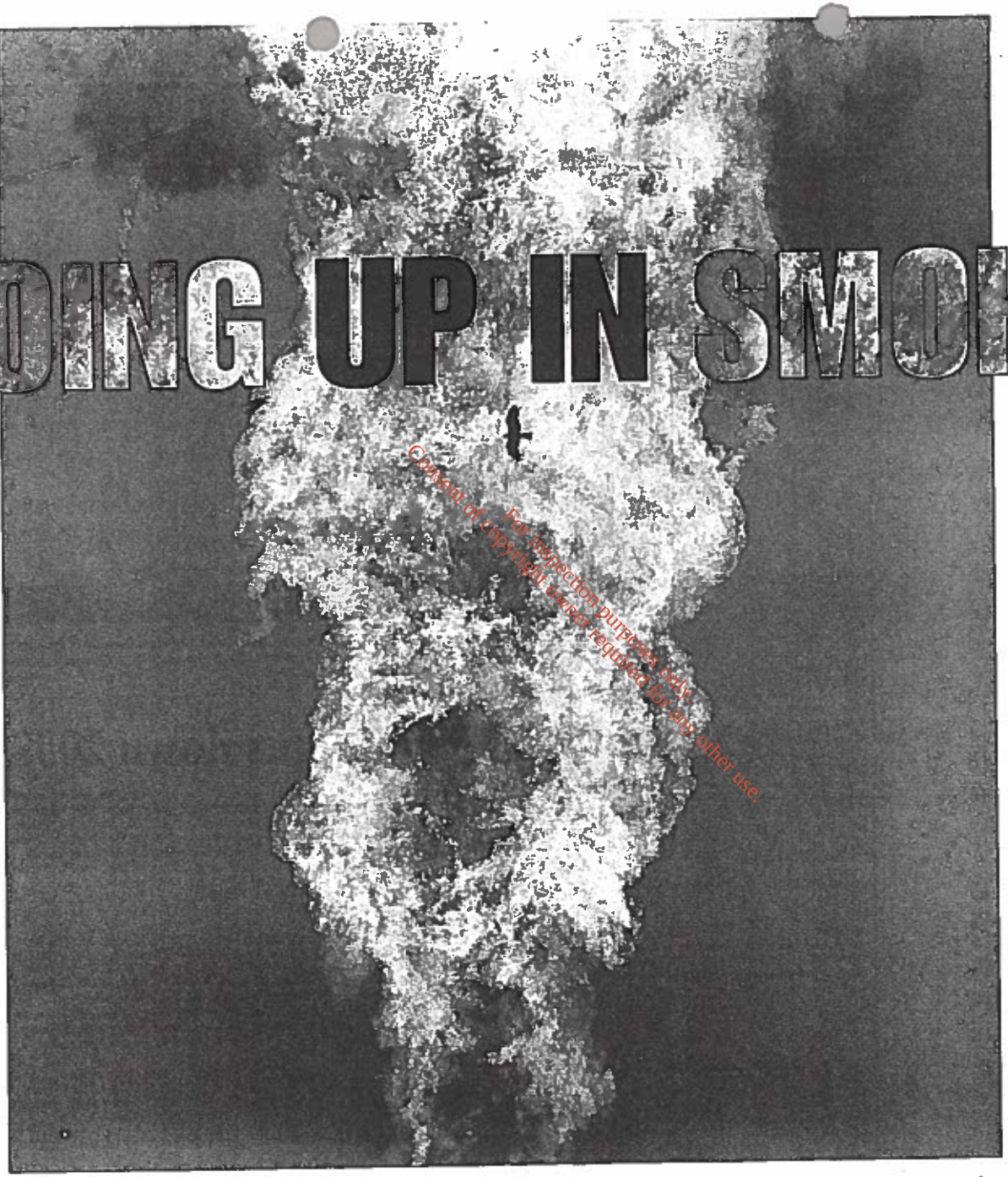
25:11:2003

The State is giving away our natural resources for nothing, says **Padhraig Campbell**



We must refuse to settle for a few jobs and slurry

GOING UP IN SMOKE



When the oil companies of the Corrib North consortium of Statoil, Shell and Marathon failed in their attempt to build a massive 80 acre refinery at Bellanaboy near Pollatomish, in North Mayo, it was quite obvious that they would do everything in their power to overturn that decision.

The speed at which key Fianna Fáil politicians pushed for a fresh application for planning permission for Bellanaboy, and their refusal to even consider the alternative of another location (or the environmentally and socially more suitable option of the construction of an offshore gas processing platform) echoed the oil companies declaration — Bellanaboy or nothing.

The reason behind this is quite simple: the 500 acre Coillte forest given to the Corrib North consortium by the former Marine Minister Frank Fahey. When planning permission was given by Mayo County Council to build the refinery at Bellanaboy, permission was also given to expand the refinery as deemed necessary in a certain time frame. The oil companies and other expert observers know that there are potentially massive oil and gas reserves in our western waters.

As more "discoveries" are hooked into the planned Corrib North sub-sea production structure 36 miles off the north Mayo coastline, the refinery at Bellanaboy can grow and grow in the 500 acres. Fianna Fáil has done all in its power to facilitate and enable the oil industry in it's quest to grab Ireland's oil and gas reserves.

In 1987 the then Energy Minister Ray Burke did away with royalties; introduced tax write-offs and ended Ireland's automatic right in any oil/gas discovery. In 1992 the then Finance minister, Bertie Ahern reduced the oil tax to 25%, the lowest in the world. Frontier Licences, which the oil companies could sit on for up to 20 years, were also introduced that year.

The oil companies snapped up the best prospects on our West, North, South and East coasts. When one considers Ireland's waters are 10 times that of the land area, it is an awful lot of potential to give away.

When the Taoiseach spoke in the Dáil on November 19 in terms of Ireland becoming an exporter of gas, perhaps he forgot that we would stand to gain hardly anything as things currently stand, from any such exports.

The West coast of Ireland contains the Atlantic Margin, an area that the oil industry feels has massive potential. When Corrib North was discovered in 1996, Irish oil rig workers aboard the rig confirmed the find was massive. This, of course, was denied by the oil companies.

Wood Mackenzie, the international oil consultants, said in 1998 that Corrib North could have up to seven tcf (trillion cubic feet) of gas. At current prices one tcf is worth around €3 billion.

It is therefore all the more incredulous that this State has no independent verification procedures. The oil companies can choose to tell us what they like.

The Government slavishly accepts the line that we have very little out there and we need to do all that we can to attract the oil companies in with generous terms and subsidies.

The subsidies come in terms of tax breaks and the building of distribution infrastructure such as the Ballinaboy to Craughwell pipeline and the two interconnectors from Scotland, which the State was tricked into building on the basis that "Kinsale gas was running out." One of the interconnectors can be reverse flowed, and when the Corrib field is hooked into the Bord Gais ring main at Craughwell in Galway, it is effectively being exported at this point as the Bord Gais ring main becomes part of a European ring main.

Of course, although plans are being made with Bord na Mona to shift 600,000 tonnes of bog slurry to a site around 10 miles from Belanaboy, in the immediate vicinity of Carramore lake the localities water source, no new planning application will be made until the National Infrastructure board is in place.

This will then deny any right of appeal to local people when permission is given for this (expanding) refinery. It is indeed fortunate that locals did appeal the planning permission.

For if the five-mile shore-to-refinery pipeline had been laid, the landslides that happened at Polotomish would almost certainly have smashed the section of pipeline that would have been run under the landslides at Dooncartonhill, with catastrophic results.

There are still unanswered questions about the effects of heavy trenching and rock breaking work carried out as preparatory works for the pipeline route in 2002 and the constant movement of heavy lorries at the base of Dooncarton/Glengad hills where the landslides occurred.

Allied to that, the flooding of Bellanaboy Wood when the Bellanaboy river burst its banks due to the avalanches, makes the Bellanaboy/Pollotomish area too unstable for the construction of the refinery and all associated works.

The people of Mayo and Ireland should benefit to the maximum extent possible from the oil and gas off our shores. A more suitable onshore site such as the empty asahi plant in-Killala or, preferably, the construction of a shallow-water platform in a suitable bay in Mayo, providing thousands of construction jobs and long term support and operator jobs is the way that the development of Corrib should go.

Also, in the immediate national interest, the seriously out-dated 1992 oil and gas terms should be changed to ensure that this country benefits from her own oil and gas, which could make such a huge difference in tax revenue, health, education, infrastructure and jobs.

It is time we woke up and refused to settle for just a few jobs and loads of bog slurry.

● Padhraig Campbell is spokesman for SIPTU's National Offshore Committee

Appendix M received by An Bord Pleanála in audio tape format with appeal from Bríd and Teresa McGarry on 26th May, 2004.

Interview with Liamy McNally of Mid West Radio re Submissions not being on file in May County Council re:P03/3343 dated 13.04.04 (Tuesday) by Bríd McGarry

Liamy McNally: Some residents from North Mayo are concerned that submissions they made to Mayo County Council on the Corrib Gas project are not on the public file in the Council offices. All submissions from the public on planning matters should be available on the planning file in the Council offices. However submissions on the Corrib project made on April 1st last were not on the file as of this morning, according to Bríd McGarry.

Bríd McGarry: Now I was informed by a member of the public that my submission and two others indeed were not on the public planning file as per last week with respect to submissions which were made to the Planning Section of Mayo County Council. Now this is with respect to the further information submitted by Shell E and P on 11th March and unfortunately I have been informed today that they are still not on file so that would appear to me to reflect that their absence from the file displays a total and absolute disregard or contempt for our concerns. Questions are to be asked as to why they were and are not on display to the general and to the wider public and I would like to know what the implications are with respect to the integrity of the Planning Section of Mayo County Council with respect to this reality.

Liamy McNally: When did you put in your submission Bríd, and the other submissions you're talking about, where they submitted before the closing date, of whatever it was, April 1st or April 2nd?

Bríd McGarry: They were submitted on 1st April.

Liamy McNally: So they were submitted on time.

Bríd McGarry: Oh absolutely. Perhaps its because of the reality of this proposed concept that they are not on file. Because as far as I'm concerned this project is totally and fundamentally flawed from a number of criteria, from planning, health and safety, environmental and legal perspectives.

Liamy McNally: Speaking of legal perspectives, what's the legal status of not putting your submission on the public file, or do you know?

Bríd McGarry: I'm not aware of that Liamy, but as far as I'm concerned it is a function of the Planning Section of Mayo County Council to ensure that submissions submitted by the public are available for viewing to the public and this has been violated as far as I'm concerned. Now Liamy also this reality raises a serious question with respect to other submissions being on file or not being on file as the case may be at this stage. I cannot clarify that issue for you Liamy, but going on what I have incurred it is a very serious question. Now I'm aware of three omissions at this stage, including my own, and perhaps that will expand on further investigation and as far as I'm concerned its totally unacceptable behaviour with respect to the serious project which has devastating implications for the wider public.

Liamy NcNally: Have you made any representation to Mayo County Council once you discovered that your submission was not on the public file?

Bríd McGarry: I have not made any representations yet but this has only been brought to my attention very recently and because of the Holy Week that was in it, you know, Mayo County Council are only back in the office today I believe, but I will be following it up because it's is an absolute contempt.

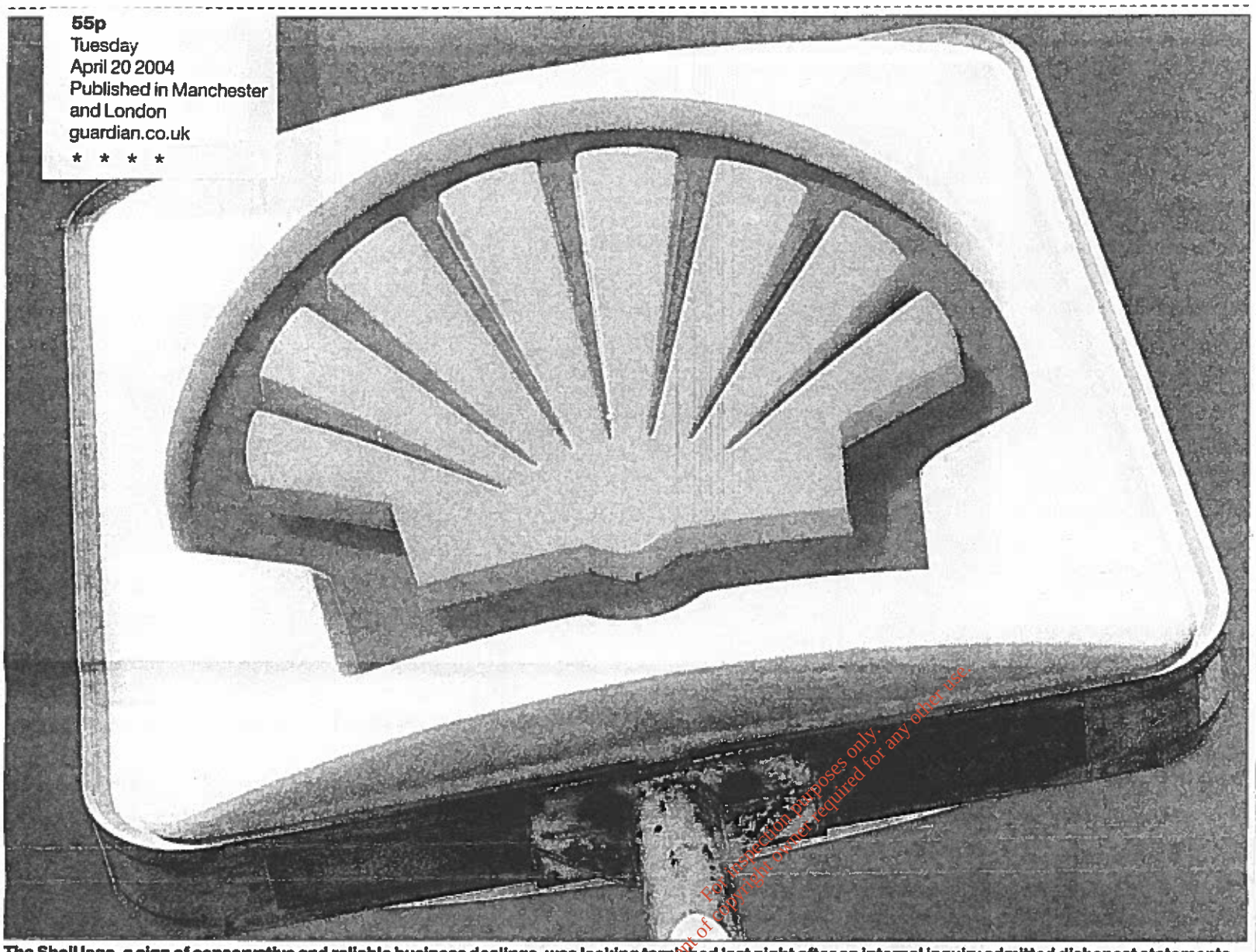
Liamy NcNally: And that was Bríd McGarry from North Mayo. Now a spokesman for Mayo County Council confirmed to Mid West News this evening that since lunchtime today all submissions made to the Council are now on the public planning file.

The Guardian NORTH

Appendix N.

'I am becoming sick and tired of lying ...' The internal email that lifted the lid on one of Britain's biggest companies

55p
Tuesday
April 20 2004
Published in Manchester
and London
guardian.co.uk
* * * *



The Shell logo, a sign of conservative and reliable business dealings, was looking tarnished last night after an internal inquiry admitted dishonest statements

Shell admits it misled investors

Terry Macalister

Shell deliberately misled investors about the financial health of the world's third largest oil company, an internal inquiry revealed yesterday.

The Anglo-Dutch company sacked its chairman Sir Philip Watts and his exploration director Walter van de Vijver earlier this year after admitting it had overstated the amount of oil and gas reserves it had in the ground by more than 20%.

Yesterday it said the figure was nearer 25% and admitted Sir Philip and Mr Van de Vijver had known about the problems for at least two years and possibly as long as seven.

Extraordinary messages between senior directors, revealed yesterday, increase the likelihood of them facing criminal charges from the US justice department which is investigating events.

The most damning statement comes in an email from Mr Van de Vijver to Sir Philip dated November 9 2003, which says: "I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

The firm, which controls over 1,000 petrol stations in Britain, also said finance chief Judy Boynton had been forced to leave her post.

Financial analysts use the reserves figure for valuing oil companies and yet the Shell figures were put together by one part-time staff member, it admitted yesterday in the findings of a report commissioned by Shell's audit committee.

The two top Shell executives insisted publicly as recently as early this year that difficulties with reserves only came to light late in 2003.

But on February 11 2002 Mr Van de Vijver forwarded a note to other senior executives warning the company's figures were 2.3bn barrels of oil higher than they should have been to meet the rules of the Wall Street regulator, the securities and exchange commission.

"Recently the SEC issued clarifications that makes it apparent that the group guidelines are no longer fully aligned with SEC rules," said Mr Van de Vijver in the note published yesterday.

And yet on May 28 2002 Sir Philip appears to completely dismiss this warning when he tells Mr Van de Vijver to leave "no stone unturned" to ensure even higher oil and gas figures are reported publicly.

Lord Oxburgh, joint chairman of the group, said the latest findings contained in a review by US lawyers Davis Polk & Wardwell had revealed "disturbing deficiencies" inside one of Britain's most prestigious companies.

He insisted he had been kept in the dark about the serious discrepancies between what was being said publicly rather than privately by the firm.

Lord Oxburgh promised a huge shake-up in the way Shell was run, saying new systems had already been put in place which he insisted "deals with our past mistakes and sets a new standard for the future".

Sir Philip's replacement, Jeroen van der Veer, rejected suggestions that the problems resembled the high profile scandals that had destroyed American companies such as Enron. "This is not a major financial scandal," he insisted.

But business experts said the crisis at Shell was the biggest since the Guinness affair in the 1980s and involved a company that was previously considered one of Britain's most conservative and reliable firms.

Emails reveal deceit, page 18

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Business

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World Bank Iraq debt relief opens door for other poor countries **21**

Trail of emails reveals depths of deceit at the heart of Shell

Finance chief shifted as oil group promises change

Terry Macalister

Shell promised to accelerate its review into its controversial dual company structure yesterday as part of a series of initiatives aimed at restoring confidence in the scandal-hit oil group.

The commitment came alongside a third downgrade of reserves and an admission that it would need to refile financial figures in the United States, knocking off $100m (£55m) from its earnings annually for the 2000 to 2003 period.

Standard & Poor's announced it would be downgrading the company's prized AAA credit rating to AA+. But the share price, which yesterday changed little, has already been badly mauled since the problems were made public.

Confidence in Shell was further undermined yesterday by a dramatic and damning report into senior management's behaviour regarding the downgrading of reserves earlier this year, which triggered the company crisis.

American law firm Davis Polk & Wardwell collected a series of emails from former chairman Sir Philip Watts and exploration director Walter van de Vijver, who were both dismissed earlier this year, showing they knew about the reserves problems at least two years ago — if not as far back as 1997.

Shell's joint chairman, Lord Oxburgh, accepted the report in full and while expressing his full confidence in Sir Philip's successor, Jeroen van der Veer, promised to draw a line under the past. "We believe that following the actions we have announced, Shell will be able to re-engage

to draw a line under the past. "We believe that following the actions we have announced, Shell will be able to re-engage with its stakeholders and re-establish confidence in our behaviour as a business and employer."

While the company had expressed little enthusiasm in previous statements about its unusual Anglo-Dutch structure, it was much more forthcoming yesterday. The world's third largest quoted oil group said it was already "exploring all possibilities for improved governance and structure", and would bring its conclusions to the delayed annual meeting on June 28.

It has shifted finance director Judy Boynton to another post and said it will look outside as well as inside the firm for a full-time successor. Her role will be filled for the time being by group controller Tim Morrison. Ms Boynton is expected to receive a payoff in June.

Meanwhile Shell's ruling committee of managing directors has assumed responsibility for reviewing and signing off reported reserves, and reserves auditors now report to the group's internal audit.

Sir Philip Watts was party to an increasingly acrimonious exchange of emails about the overbooking of reserves
Photograph: Martin Argles

But the group has so far turned its back on demands it should have all its reserves figures audited by an outside firm. The reserves downgrade yesterday brings the total to 4.35bn barrels of oil equivalents to the end of 2002 with an additional 500m for 2003. Only 90% of Shell's oil and gas reserves have been reviewed, raising the possibility that there could be more, if relatively small, downgrades.

City analysts were pleased with some initiatives but questioned whether Lord Oxburgh and other non-executives should have done more. Fadel Gheit, from Oppenheimer & Co in New York, said he was unconvinced the senior executive team accepted the scale of the problem. "I am not 100% convinced this is the end of the [bad news] story. But the report was very thorough, and I never honestly believed this kind of thing could happen at Shell." He said the findings of the report only emphasised the need for a unified board.

The problems with reserves in fact go back eight years, according to the Davis Polk & Wardwell report, which shows figures were overbooked on the Gorgon field in Australia in 1997.

Mr Van de Vijver, as head of exploration, complains in emails to Sir Philip that "RRR [reserves replacement ratios] remains below 100%, mainly due to aggressive booking in 1997-2000", a period when Sir Philip was in charge of that department.

The two were increasingly at odds over the fact that Shell's public position was different to what they knew to be true. "I must admit that I become sick and tired of arguing about the hard facts, given where we are today. If I was interpreting the disclosure requirements literally (Sorbanes[sic]-Oxley Act, etc) we would have a real problem," says Mr Van der Vijver on October 22 2002, referring to the US Sarbanes Oxley act on corporate behaviour.

In November Mr Van de Vijver told his staff in a note: "We finalised our plan submission and could easily leave the impression that everything is fine. The reality is we would not have submitted this plan if we 1) were not protecting the group reputation externally ... 2) could have been honest about past failures (...reserves manipulation)". In September 2002, the exploration head wrote a "strictly confidential" personal note to file reviewing the decision to lower production growth targets, which disappointed the stock market in September 2001. He concludes: "Bottom line was that both reserves replacement and production growth were inflated: Aggressive/premature reserves bookings provided impression of higher growth rate than realistically possible."

But it was only in late 2003 that the senior management decided what they termed Project Rockford must be introduced, downgrading reserves to bring them into line with private assessments and requirements from the securities and exchange commission, the US financial watchdog. This led to the first big announcement in January 2004.

Mr Van de Vijver was given legal advice from within the company about the potential problem caused by the downgrade which suggested, "disclosure [to the SEC] cannot await the next Form 20-F appearing in April 2004". The exploration head immediately emailed one of the note's authors, saying its conclusions were "absolute dynamite, not at all what I expected and needs to be destroyed". It was not shredded because the staff member took in-house legal advice not to do so.

But the most damaging email was one written on November 9 2003 by Mr Van de Vijver after receiving what he considered to be an unfairly critical performance review from Sir Philip. The Dutch exploration head wrote to his chairman: "I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

But when the downgrade of reserves was finally revealed to the public, Sir Philip suggested that overbooking was an issue that had only recently surfaced.

He was quoted on January 16 2004 explaining: "During the fourth quarter of last year, in-depth reserves studies were completed that triggered a broad review of our previously booked proved reserves ... Based on those reserves, I believe that individuals concerned worked in good faith to the interpretations in use when the bookings were made, following proper processes and that there was no evidence of any misconduct."

At a press and analyst conference on February 5, Mr Van de Vijver indicated the difficulties had only been understood because of a new look at Nigerian reserves. "There were two events in 2003 that were the catalyst for what we announced on January 9. The first was a detailed review in Nigeria ... The other area where we last year put a lot of effort in was around Oman."

Davis Polk & Wardwell concludes that the booking of "aggressive" reserves and their continuing place on Shell's books were only possible because of deficiencies in controls. The internal reserves audit function was understaffed and under-trained, says the firm's report. "This function was performed by a single, part-time former Shell employee; his cycle of field audits was once every four years; he was provided with virtually no instruction concerning regulatory requirements or the role of an independent auditor and no internal legal liaison."

'I'm getting sick and tired about lying' Walter van de Vijver

Extracts from the emails

'Recently the SEC issued clarifications which make it apparent that the group guidelines are no longer fully aligned with SEC rules' — **Van de Vijver to Shell committee of managing directors, February 11, 2002**

'Given the external visibility of our issues (lean organic development portfolio, RRR low, F&D unit costs rising), the market can only be "fooled" if 1, credibility of the company is high; 2, medium and long-term portfolio is real and/or 3, positive trends can be shown on key indicators' — **Van de Vijver to managing directors committee with copy to Ms Boynton, September 2, 2002**

'I become sick and tired of arguing about hard facts given where we are today. If I was interpreting the disclosure requirements literally (Sorbanes [sic] Oxley act, etc) we would have a real problem' — **Van de Vijver to Sir Philip, October 22, 2002**

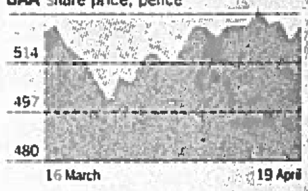
'We finalised our plan submission and could easily leave the impression that everything is fine. The reality is however we would not have submitted this plan if we 1, were not protecting the group reputation externally ... 2, could have been honest about past failures [...reserves manipulation]' — **Van de Vijver to staff members, November 2002**

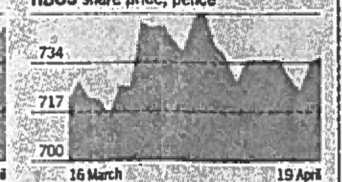
In September 2002, Mr Van de Vijver wrote a 'strictly confidential' personal note to file and reviewed the decision to lower production growth targets which disappointed the stock market in September 2001. He concludes: 'Bottom line was that reserves replacement and production growth were inflated: Aggressive/premature reserves bookings provided impression of higher growth rate than realistic'

'I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings' — **Van de Vijver to Sir Philip, November 9, 2003**

City briefing

Popular shares

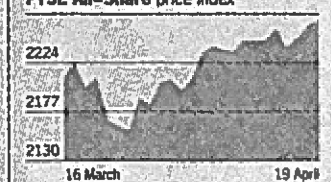

BAA share price, pence

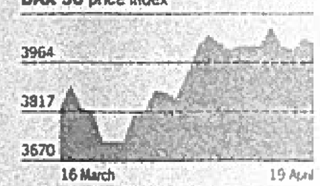

HBOS share price, pence

	Price (p)	Change
Abbey National	435.00*	-4.00
Alliance & Leicester	832.00*	-4.00
BAA	527.00	+5.50
BG Group	344.50*	-2.50
BP	492.00	-5.00
Bradford & Bingley	287.00*	+0.75
British Airways	291.75	-1.75
British Energy	8.39	+0.04

	Price (p)	Change
Centrica	232.25	-2.00
Corus	41.00	
HBOS	736.00*	+2.00
Marks & Spencer	277.50	+13.00
mmO2	101.75	+1.75
Nat Grid Transco	434.75	+0.50
Northern Rock	753.50	+2.50
Shell Transport Regd	389.75*	-3.00

Key markets


FTSE All-Share price index


DAX 30 price index

	Close	Change	Year high	Year low	% move
FTSE 100	4546.2	+8.90	4559.10	4309.40	+0.20
FTSE 250	6286.1	+27.70	6388.80	5834.10	+0.44
FTSE All-Share	2264.90	+5.00	2275.51	2159.56	+0.22
Nasdaq Cmp	2,020.41	+24.67	2153.83	1901.80	+1.24
Dow Indl	10437.85	-14.12	10737.70	10048.23	-0.14
DAX	4025.07	-8.91	4151.83	3726.07	-0.22
CAC 40	3743.43	-8.16	3785.36	3518.45	-0.22
Nikkei 225	11764.21	-60.35	12127.82	10365.40	-0.51

Exchange rates

	Rate	Change
Pound/dollar	1.8093	+0.0061
Pound/euro	1.5040	+0.0052
Euro/dollar	1.2030	-0.0001
Dollar/yen	108.590	+0.3550
Sterling index	105.4	+0.3
Libor	4.370	unch
UK 10-year gilt	100.39	4.95%
US 10-year T-bill	97.24	4.35%
German 10-yr bund	100.01	4.12%

Interest and inflation

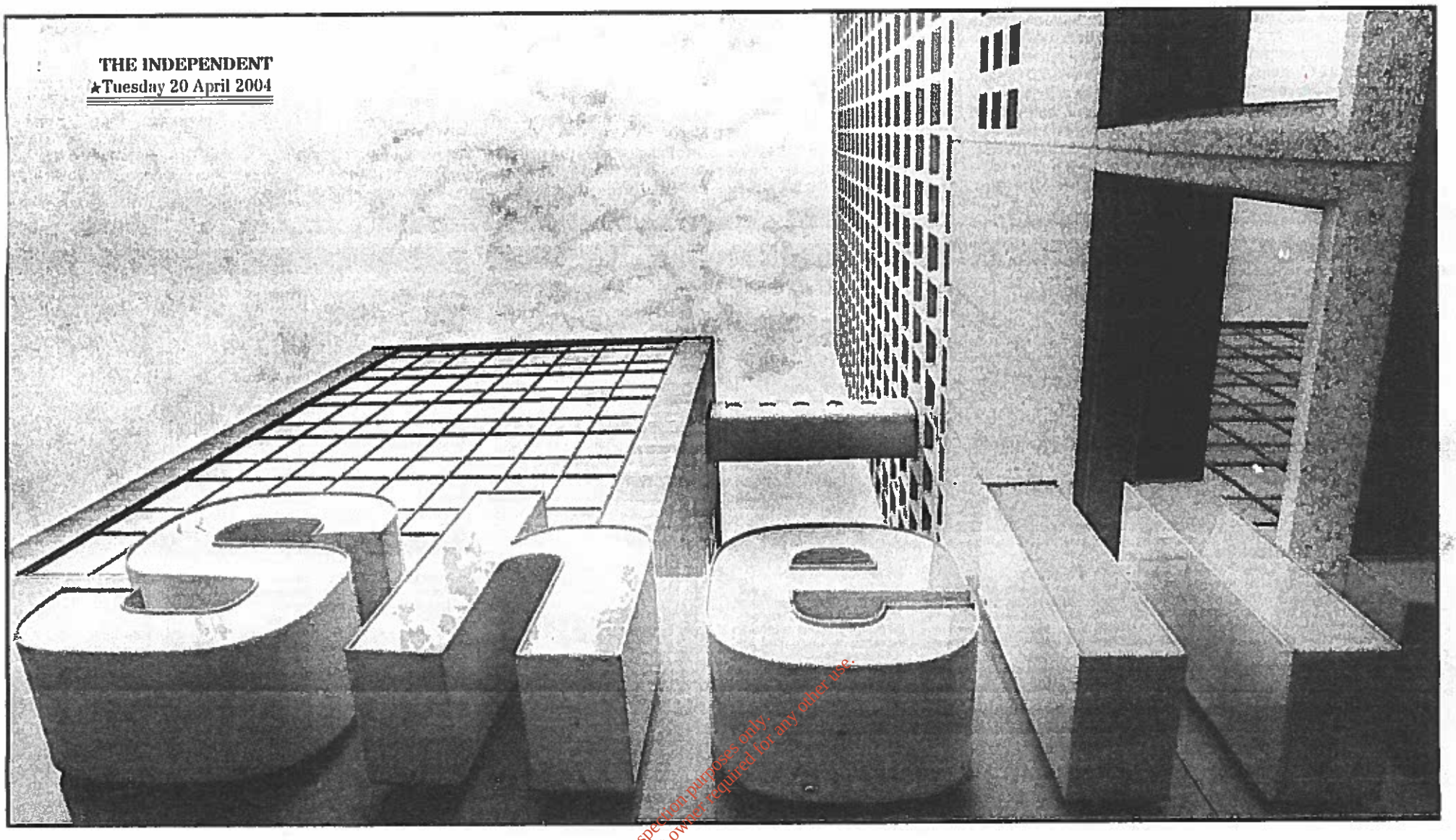
	Rate
B of E base rate (Feb 5)	4.00%
Finance House base rate	4.50%
Halifax mortgage rate	6.00%
CPI (Feb 110.4 +0.3) annual rate	1.3% (-0.1%)
RPI (Feb 183.8 +0.7) annual rate	2.5% (-0.1%)
Nationwide house price index	280.9 (+8.5)
Annual change	+17.1%
Brent Oil ($) May	34.02 +0.29
Gold ($)	406.35 +4.50

Tourist rates Bank sells

Australia Dollars 2.31	Hong Kong Dollars 13.38	Pakistan Pak Rupee 104.01
Barbados Dollars 3.32	India Rupee 79.35	Singapore Dollar 2.89
Brazil Real 5.26	Israel Shekels 7.69	South Africa Rand 11.10
Canada Dollars 2.31	Japan Yen 188.30	Sweden Kronor 13.20
Cyprus Pounds 0.84	Malaysia Ringgit 6.43	Switzerland Francs 2.23
Denmark Kroner 10.71	Malta Lira 0.61	Thailand Baht 64.66

Appendix N

Lies, cover-ups, fat cats and an oil giant in crisis



Shell admits deceiving shareholders

SHELL WAS embroiled yesterday in Britain's biggest corporate scandal for almost 20 years after it admitted a three-year plan to deceive its shareholders.

The City reacted with astonishment after the crisis-stricken multinational released details from an internal report that exposed how the company had deliberately overstated its oil and gas reserves for several years.

BY KATHERINE GRIFFITHS

Judy Boynton, the finance chief, became the third boardroom casualty of the furore that followed the shock 20 per cent downgrade in reserves three months ago. The Shell affair, the most damaging scandal in the UK since the Guinness debacle 18 years ago, has already led to the departure of the chairman, Sir Philip Watts, and the head of exploration and production, Walter van de Vijver.

The pair were savaged in the damning, independent report commissioned by Shell for appearing to know that reserves failed to meet market rules as far back as 2001. The report listed a bewildering array of e-mails sent between increasingly desperate executives. In one, Mr van de Vijver told Sir Philip last November: "I am sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

A month later, Mr van de Vijver, responding to an internal report that suggested Shell's position on the reserves was a violation of US securities law, wrote: "This is absolute dynamite, not at all what I expected and needs to be destroyed."

The prospect of criminal charges being brought against some Shell executives appeared increasingly likely last night.

Sacked chairman savaged in report

The report was designed to get to the bottom of an affair that has rocked confidence in the stewardship of Shell since the disclosure that its reserves had been overstated.

It says Mr van de Vijver repeatedly e-mailed Sir Philip over a period of nearly two years to inform him of concerns

Continued on page 4

Revealed: the bitter power battle that put Shell in the firing line

AN EXTERNAL investigation into Shell's overstatement of its oil and gas reserves revealed in detail yesterday the roles played by the main protagonists in the scandal; Sir Philip Watts, who resigned as chairman last month, and Walter van de Vijver, the company's former chief executive of exploration and production.

The findings of the investigation, undertaken by Davis Polk & Wardwell, an American law firm, at the request of Shell, make grim reading for both men but will have proved particularly uncomfortable for Sir Philip, one of Britain's most respected businessmen. It reveals a company torn apart by a power struggle between Sir Philip and Mr van de Vijver. While the two vied for influence over the once-proud Anglo-Dutch oil giant, a culture of fear was allowed to develop in which ordinary workers lived in fear of their jobs.

All the time, says the report, Shell allowed a situation to arise whereby its oil and gas reserves were overstated, misleading stock markets around the world, and the company's legions of international shareholders. While its conclusions stop short of apportioning blame – that will be the job of the various regulatory and financial inquiries going on in Europe and the United States

By Damian Reece
City Editor

– it pulled no punches in revealing what Shell's top executives knew about the impending scandal, and when they knew it.

It reveals warnings given by Mr van de Vijver about the crisis as far back as February 2002 and the ensuing attempts to gloss over the problem in public – an effort in which Sir Philip and Mr van de Vijver were heavily involved. Finally, it also reveals a company lacking crucial internal controls, run by two separate boards of directors, where the chain of command had broken down.

Shell's famous advertising catch line used to be "You can be sure of Shell" but the report reveals, as far back as 1997, this was patently not the case and, as e-mails and internal memos from Mr van de Vijver showed, probably even earlier than that.

In mid-2001, Mr van de Vijver succeeded Sir Philip as Shell's chief executive of exploration and production, after Sir Philip's promotion to chairman. There was a perception within Shell and the stock market that Sir Philip's success was down, at least in part, to his ability to meet or exceed reserve expectations. But Mr van de Vijver believed the reserves booked under Sir Philip's time in the job were "aggressive" or "premature". They were non-compliant with Shell's own guidelines and, implicitly, guidelines for measuring oil reserves laid down by the Securities and Exchange Commission (SEC) in the US.

This antagonism is revealed in a series of extraordinary e-mails and memos dating from February 2002. By November last year, Mr van de Vijver had become so angry that in an e-mail to Sir Philip he said: "I am sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

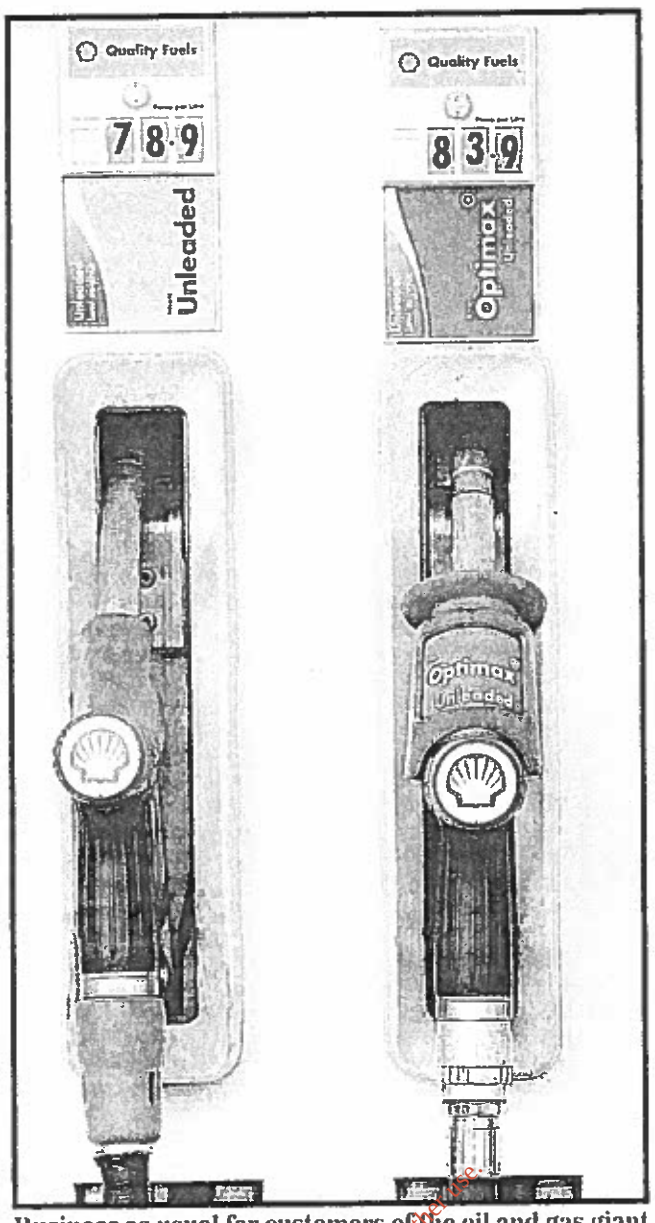
Even before November last year, Mr van de Vijver had been issuing warnings. In February 2002, he told Shell's management committee the company may have overstated reserves by 2.3 billion barrels because it was ignoring SEC guidelines. Sir Philip asked for a further presentation, delivered in July 2002, but before he had even received it he was directing Mr van de Vijver by e-mail, in May that year, to "leave no stone unturned" in making sure Shell's reserves were as high as possible.

By September, however, Mr van de Vijver fired off another memo to Shell's management committee, including Judith Boynton, the finance director, who became the latest victim when she was forced to step down yesterday. He said: "Given the external visibility of our issues ... the market can only be 'fooled' if 1) credibility of the company is high, 2) medium- and long-term portfolio refreshment is real and/or 3) positive trends can be shown on key indicators." Over the next 12 months, Mr Van de Vijver's exasperation with Sir Philip grew.

Finally Shell was forced into action and in late 2003 it began an internal review which resulted in it finally admitting on 9 January this year that it had overstated its reserves. But for Mr van de Vijver and Sir Philip this was only the start of their present troubles. On 2 December 2003, Mr van de Vijver was told in a memo from his own finance staff that Shell must disclose to the market its need to reduce its reserves or be in breach of SEC rules. Responding to the memo, Mr van de Vijver e-mailed: "This is absolute dynamite, not what I expected and needs to be destroyed."

The question remains why there was not another whistleblower. The answer is that those in middle-management who knew, feared they would lose their jobs if they spoke out.

Shell's group reserves auditor, amazingly a part-time post at the company, was quoted in yesterday's report anonymously. He said: "I should have been more forceful in this respect. It would have been a clear break with all my predecessors and it would have probably cost me my job in those days."



Business as usual for customers of the oil and gas giant

THE DAMNING E-MAILS

"You will be bringing the issue to CMD [committee of managing directors] shortly. I do hope that this review will include consideration of all ways and means of achieving more than 100 per cent in 2002 – to mix metaphors... considering the whole spectrum of possibilities and leaving no stone unturned."

May 28 2002. Email from Sir Philip Watts to Walter van de Vijver urging him to achieve 100 per cent reserves replacement ratio (RRR) for 2002

"Given the external visibility of our issues (lean organic development portfolio funnel, RRR low, F&D unit costs rising), the market can only be 'fooled' if 1) credibility of the company is high, 2) medium and long term portfolio refreshment is real and/or 3) positive trends can be shown on key indicators. Unfortunately... We are struggling on all key criteria ('caught in the box'). The immediate risk that we are facing is on the negative spiral of our boxed situation:... RRR remains below 100 per cent mainly due to aggressive booking in 1997-2000."

September 2 2002. Note from Mr van de Vijver to Shell's CMD, copied to Judith Boynton, Shell's finance director, warning of the company's dilemmas

"I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

November 9 2003. Email from Mr van de Vijver to Sir Philip

"This is absolute dynamite, not at all what I expected and needs to be destroyed."

December 2 2003. Email from Mr van de Vijver to a colleague responding to a note detailing Shell's internal legal conclusion that non disclosure of reserves problem would be a violation of US securities law.

"We are heading towards a watershed reputational disaster on Rockford and I do want to stick to some very firm criteria: the problem was created in the 90s and foremost in 1997-00 and any clean up must reflect that... I will not accept cover-up stories that it was OK then but not OK with the better understanding of SEC rules now and that it took us 2 and a half years to come to the right answer."

December 2003. Email from Mr van de Vijver to a colleague on communicating Shell's reserves problem

Lies, fat cats, cover-ups and an oil giant in crisis

Continued from page 1

over the group's reserves. The report, carried out by the US law firm Davis, Polk & Wardwell, paints a picture of Sir Philip resisting attempts by Mr van de Vijver to scale back the amount of oil and gas that the company was telling the outside world it was discovering.

Sir Philip directed Mr van de Vijver to "leave no stone unturned" to hit targets.

The company again cut its reserves estimates in March, and yesterday – saying it was drawing a line under the matter – made further reductions.

The contents of the internal report will be a huge blow to Sir Philip, sacked by Shell along with Mr van de Vijver last month after the company's financial woes became public.

It is unclear whether they will receive any financial settlements, but Sir Philip was paid £1.8m in 2002, and has a pension worth £480,000 a year. Mr van de Vijver is reputed to have earned a salary of more than £1m and a generous pension.

Ms Boynton, the chief financial officer, was forced out after she failed to address the inaccurate nature of Shell's reserves reporting policy. A fourth person, the joint chairman Lord Oxburgh, is expected to resign within the next few days.

Sir Philip and other senior directors are thought to have been named in lawsuits initiated by shareholders in America.

The company said yesterday it had been requested to publish only a summary of its report by the US regulatory authorities.

Attempts to contact Sir Philip at his Berkshire home were unsuccessful.

America's financial regulator – the Securities and Exchange Commission – and the Justice Department are investigating.

The bar on Shell publishing the full result of its investigation sparked speculation that the US authorities did not want to scupper a potential criminal prosecution of Sir Philip, and possibly others, by releasing information that could prejudice the case. Kenneth Vianale, a partner in Florida-based Vianale & Vianale, which has launched a shareholders' class action, said: "Shareholders would like to have full disclosure of the report. But if a company conducts an internal report which is then given to a third party, such as the SEC, lawyers' privilege is waived."

Business, page 36
Outlook, page 39

How a sure thing became a City liability

BY KATHERINE GRIFFITHS

WHEN SIR Philip Watts, chairman of Shell, the world's second-largest oil and gas company, retreated to his Berkshire mansion at Christmas, he had some news to mull over that was going to stun financial markets around the world.

On 9 January Shell broke the news. Because of mistakes in the way it had calculated the amount of fossil fuels it had in oil and gas fields around the world, Shell said, it was going to have to slash its reserves by one fifth.

Shell, seen in the City as one of Britain's safest blue-chip companies, was thrown into crisis. Investors took fright and sold shares, wiping £8bn off Shell's value and sending its stock down 8 per cent.

The mistake claimed the job of Sir Philip, who would have human failings, it is not structural. I personally am satisfied that the deficiencies were restricted to a small fraction of exploration and production."

The message Shell is keenest to convey is that it is not Britain's version of Enron, the financial and energy company

THE PROTAGONISTS

SIR PHILIP WATTS
Until January, the chairman of Royal Dutch Shell had been at the heart of the multi-billion dollar global oil industry. Now, he can devote himself to his Japanese garden in his Berkshire home.

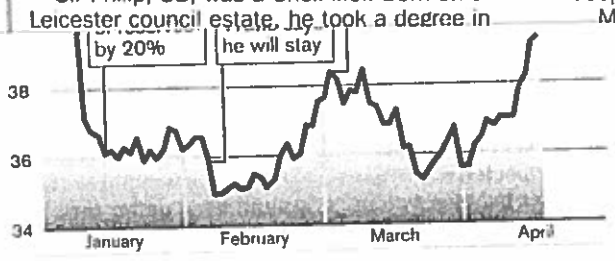
Sir Philip, 58, was a Shell lifer. Born on a Leicester council estate, he took a degree in

WALTER VAN DE VIJVER
The Dutch former head of exploration and production at Shell was once tipped to succeed Sir Philip Watts as chairman. Instead, they both resigned amid plunging share values and the deepest crisis in the company's history.

Mr van de Vijver, 56, who had been with Shell UK and Holland who are now sifting through Shell's documents. The process could take months, if not years, but if shareholders succeed in suing Shell for millions of pounds for misleading them, Shell's fate could end up looking not dissimilar to that of Enron.

JUDY BOYNTON
The American-born finance director of Shell was named two years ago in a list of the most powerful businesswomen in Britain.

But the accolade, recognising 20 years of experience in the oil industry, has done little to



Source: Thomson Datastream

Shell's whodunit script is worthy of fiction

OUTLOOK

JEREMY WARNER

"I AM becoming sick and tired about lying" ... "we are heading towards a watershed reputational disaster" ... "the market can only be fooled if the credibility of the company is high. Unfortunately, we are struggling on all key criteria". It is hard to imagine a greater sense of impending disaster than that communicated in a series of increasingly panic stricken e-mails and memos by Walter van de Vijver, Shell's former head of exploration and production, to his chairman, Sir Philip Watts, and the rest of the Shell management committee as the enormity of the crisis facing one of the world's most admired companies began to sink home.

Nor is it easy to imagine a more damning indictment or demonisation of the former chairman than the one contained in yesterday's internal report into the affair. At one point, Mr van de Vijver is instructed by Sir Philip, with evident menace "to leave no stone unturned" and "include consideration of all ways and means to achieve a 100 per cent reserve renewal ratio", even though Mr van de Vijver was already complaining bitterly about the appaling legacy of overbooked reserves he had been left by Sir Philip, his predecessor as head of exploration and development.

What makes this stranger than fiction report more remarkable still is that what we've had only the sanitised version so far. Large parts of it have been exorcised on the instructions of regulators, so there is presumably worse to come. You simply couldn't have made it up. Some quick minded soul will already be devising a movie script around it. The single, part time former Shell employee who Sir Philip put in charge of auditing Shell's internal reserves estimates, expresses the view that he should have been more forceful in insisting that the company comply with Securities & Exchange Commission rules, but this would probably have cost him his job.

What emerges is cover-up, delusion and management intrigue on a grand scale. Sir Philip is considered to have secured the job of chairman because there was a perception within the group and in the stock market that he had been highly successful while head of exploration and production, in part because of his ability to meet and exceed reserve expectations. As we now know, that perception was built on sand.

Mr van de Vijver is meanwhile depicted as a sulky, brooding presence, unable for reasons of internal politics and because he himself hoped one day to become chairman, fully to stick the knife into his all powerful boss. When he complains that the history of over booked reserves made it impossible to perform the "miracles" expected of him, this is seen by the management committee as more of a case of sniping at his chairman, sour grapes and management failure, than the gigantic regulatory nightmare it was about to become.

Mr van de Vijver began warning of the problem of overbooked reserves the moment he got into the job, but at all points he seems a half hearted whistle blower, who for some reason is unable wholly to shop his autocratic boss. Bizarrely, Mr van de Vijver was for public consumption still going along with Sir Philip's version of events as late as February's press conference, when the discovery of the overreserving was attributed to "catalytic" reviews in 2003. As we now know, the problem had been known about for at least two years previously.

In one of his memos, Mr van de Vijver describes the company as "caught in a box", by which he meant that external perceptions of the company were so far adrift of the reality that it made it hard to admit the truth. The management committee, on the other hand, knew the truth as early as July 2002, when minutes record a recognition of the fact that the debooking of reserves could not be delayed indefinitely.

The internal report expresses the view that the "caught in a box" dilemma had been transmitted to the management committee in "a careful fashion so as not to compromise/undermine the previous leadership". The severity or magnitude of the reserving issues may therefore not have been fully appreciated. This is a nice way of excusing other executives, and explaining their failure to act but, even assuming its veracity, it looks indicative of management almost wholly asleep at the wheel.

Why didn't Mr van de Vijver, or anyone else for that matter, alert the non executives when the problems first became apparent? There are more loose ends here than a bowl of spaghetti. The movie surely won't allow such self-evident riddles in the plot to go unexplained.

Shell is already being described as Britain's Enron, which isn't quite correct, because damaged and crisis-torn though the company might be, bust it ain't. Nor is it even in danger of losing investment grade. None the less, the repercussions will echo for years to come.

To judge by yesterday's report, both Sir Philip and the company face years of debilitating civil and possibly even criminal prosecutions. At every level, the company's management controls have been found lacking. Just as worrying, Shell hasn't been replacing its reserves as quickly as it's been depleting them, which is rather what the trouble shooting business of big oil is meant to be all about. The watershed reputational damage that Mr van de Vijver warned of has come to pass. Nobody can any longer be sure of Shell.

THE INDEPENDENT
Tuesday 20 April 2004

Shell hopes to draw line under fiasco of reserves

BY KATHERINE GRIFFITHS

SHELL YESTERDAY bowed to pressure from investors to change the structure of the century-old company in an attempt to draw a line under internal mistakes at the oil and gas group that forced it to slash its reserves three times since January.

Jeroen Van der Veer, the new chairman of Shell's committee of managing directors, promised "behavioural and cultural change" at the company to ensure its reserving policy was in the future accurate and to create a clearer line of command at the top of the company. Mr Van der Veer said: "We want to foster a culture where bad news can be passed up the line without fear of reprisal."

Lord Oxburgh, Shell's chairman, added that the company had learned a "tough lesson" but would emerge "the stronger".

The company struck a contrite note as it announced a further recategorisation of reserves and confirmed the departure of Judy Boynton as its chief financial officer.

After a review of 90 per cent of Shell's reserves, the company said it was downgrading a further half a billion barrels of oil. That comes after Shell cut its reserves by 3.9 billion barrels – or 20 per cent – in January and made a further cut last month.

While yesterday's reduction was relatively minor, the company acknowledged that it "revealed disturbing deficiencies in our past reserves reporting practice and the manner in which Shell dealt with those issues". Its shares fell from 392.75p to 389.75p.

However, Malcolm Brinded, who has taken over as head of exploration and production at Shell, attempted to assure the financial markets that there would be no major bad news. He said the company had carried out a "painstaking and thorough" review which would "draw a line" under Shell's difficulties.

As had been expected, the company sought to limit the blame for what went wrong at Shell to the "human failings" of a few individuals, according to Lord Oxburgh.

Publishing its keenly-awaited report into its failures, Shell's new board said the findings underlined the fact that its structure was sound. Yet the company has been told very clearly by the investor community that they want to see fundamental change at the Anglo-Dutch group.

As a result, Shell said, it would give more details of its plans for structural change at its annual shareholder meeting in May. In the meantime, it said changes could involve using more external experts to monitor its reserving policy and stepping up the frequency of its internal audits.

Shareholders welcomed Shell's willingness to make changes. Robert Talbut, the chief investment officer for ISIS asset management, said: "The case for change has overwhelmingly been made even from what we have seen today. The report shows that organisationally, culturally and structurally, this company needs quite a of change."

He added: "Investors cannot expect this to happen overnight, but I would expect when the company does say something at its annual meeting in May, the plans need to be reasonably well-baked."

Shell also said it would start to search for new managing directors to replace the three who have now had to step down following the reserving fiasco. As well as Ms Boynton, Sir Philip Watts, the former chairman, and Walter Van de Vijver, have had to resign.

Shell said Ms Boynton would stay on at Shell as a consultant until June. Some reports suggested she could be entitled to a pay-off worth £1m.

The company said it would search externally and internally for a new financial officer. In the interim, the job will be done by Tim Morrison, who has been the group controller since 2002. He joined Shell in 1982.

Sir Philip Watts: Shell is seeking his replacement

Appendix. N

Shell puts crisis blame on 'human failings'

Financial Times 20/04/04

Ex-board member was 'sick and tired about lying'

By Clay Harris in London and Adrian Michaels in New York

Top executives of Royal Dutch/Shell were aware that it was overstating its oil and gas reserves for nearly two years before the news was made public, the Anglo-Dutch oil giant disclosed yesterday.

The group sought to blame "human failings not structural deficiencies" as it published e-mails and memos that showed how two of its most powerful board members were feuding about the reserves issue.

The two – Sir Philip Watts and Walter van de Vijver – were forced out last month after losing the confidence of the board.

Last November, after receiving what he considered an unfairly critical performance review from Sir Philip, Mr van de Vijver responded by e-mail: "I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

Shell suffered a further blow as it cut its proved reserves figure for the third time this year, and said restatements would cut its 2000-03 earnings by an average of $100m (£55m) a year. It confirmed that Judy Boynton would step down as chief financial officer after being criticised in an audit report for being "not effective" in her compliance function.

Aad Jacobs and Lord Oxburgh, non-executive chairmen of the parent company boards, said a probe by Davis Polk & Wardell, the US law firm, had "revealed disturbing deficiencies in our past reserves reporting practices and the manner in which Shell dealt with those issues".

Shell accepted the "difficult findings", he said, and introduced a new regime for reserves accounting and compliance, monitored by external consultants.

Lawyers said the steps taken by a company – such as dismissals, co-operation with authorities and reforms – can be crucial in heading off sanctions against the group as a whole compared with individuals involved. But regulators also take account of how high up in a company the improper behaviour reached, and for how long it went on.

Shell said proved reserves were now 15bn barrels at the end of 2002 – 4.35bn barrels below the original reported figure – and 14.5bn at the end of 2003. It had audited 90 per cent of fields, and any further cuts would not exceed 150m barrels.

Shell withheld the full 450-page Davis Polk report. But the summary shows the tension between Sir Philip and Mr van de Vijver, who felt he inherited unsustainable reserve figures.

Lord Oxburgh said there was "no question of financial impropriety" on Ms Boynton's part, but Shell "needed a really strong and robust person to take the job". Tim Morrison, group controller since 2002, becomes acting CFO.

Shell's credit rating was cut a notch to AA+ by Standard & Poor's. Royal Dutch shares closed €0.06 lower at €41.59, while Shell Transport was off 3p at 389¾p.

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Unsure of Shell

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'Editorial comment'

But at least it is relearning the habit of disclosure

Even for a company that pioneered scenario planning, Royal Dutch/Shell could never have foreseen itself yesterday admitting how its former top two executives persistently lied to investors over the real level of the oil group's proved reserves. Such a cover-up has destroyed the company's long-standing reputation for caution and probity. The fact that Shell published the report, commissioned by its audit committee from independent lawyers, gives some hope that it can regain its lost reputation one day. But, in the short term, yesterday's report is likely to compound the company's legal problems with government investigators and litigious shareholders in the US.

Until yesterday, it was possible to blame the overbooking partly on Shell's history as the most decentralised of the oil majors. For years it functioned as a loose federation of national operating units across the world, and for years this was hailed as making it a model multinational. The 1998 crash in the oil price brought the need for money-saving centralisation. But Shell managed to turn its exploration and production (E&P) activities into a unified global business only last year – which is when Sir Philip Watts, its former chairman, and Walter van der Vijver, its former head of E&P, had claimed their first real knowledge of the reserve overbooking.

But the lawyers' report cites private e-mails from these two dismissed Shell executives that tell a very different story. Immediately he took over from Sir Philip as E&P chief in mid-2001, Mr van der Vijver claims to have realised that Sir Philip had left him with exaggerated reserves, and no margin to downgrade them. Thereafter, Mr van der Vijver repeatedly warns his colleagues about "fooling" investors on the reserves, and complains of being "sick and tired of lying" to the market. But he continues to participate in the lie, even to the extent of destroying certain e-mails. In all, Mr van der Vijver is caught in the quandary of a man who has accepted a high call in liar dice – say four aces and a king – only to discover a mere pair of jacks under the cup, but still he has to pass on a yet higher call. As for Sir Philip, he appears to be ready to accept anything that bolsters his record. In 2002 he was urging Mr van der Vijver to use "all ways and means" to get reserves above production for that year.

Where should Shell go from here? Another head rolled yesterday, that of Judy Boynton, the chief finance officer, and management reforms are under way, including putting more than one part-time person on to internal reserve auditing. But one lesson of yesterday's report is that the non-executive board members of Shell's separate UK and Dutch parent companies need to be far more active in supervising the joint group's managers. Perhaps they can do this effectively only by combining forces through a merger that would produce a more transparent company. That would be a good result of Shell's crisis.

FINANCIAL TIMES TUESDAY APRIL 20 2004

Appendix. N

Big reservations still remain at Shell

COMMENTARY
ROBERT COLE

THE new top brass at Shell believe that a line can now be drawn under the reserving issue that has tormented the oil giant since January 9.

It is possible that the narrow issue of how to define the size of Shell's oil reserves is settled. The policies now put in place raise realistic hopes that all those associated with the company can be more sure that future statements about its hydrocarbons paint an accurate picture.

There is very little chance, however, yesterday's revelations will put an end to the chaos that now reigns at Shell in recent months.

From the start, the reserving issue, while important, was little more than a window through which investors and analysts, regulators and employees could see, in all its awful glory, the way one of the UK's leading companies was managed. Or mismanaged.

After all, no one is ever going to be able to come up with a cast-iron system for defining, to any degree of accuracy, what the reserves of any oil company are at present or are likely to be at any point in the future.

There will always be a degree of guesswork in interpreting the findings of scientific investigation.

Adopting appropriately conservative assumptions is wise, but at the same time wrong impressions might be built by adopting policies that are too conservative. The key is to hedge any statements about reserves, or any other unknowables, with appropriate caveats.

Bigger issues remain far from resolution. Granted, three of the key protagonists in this sorry tale have been written out of the story as far as Shell's day-to-day management is concerned.

Notably the two men — Sir Philip Watts and Walter van der Vijver — on either side of the scandalous "lying" allegations laid by Mr Van der Vijver are gone. But the assertion that certain senior managers might have wilfully misled colleagues and the market will carve an indelible mark on the reputation of the once-revered company.

Deep, and perfectly legitimate, concerns will centre on the nature of the culture prevailing within the organisation. Other Shell executives that remain with the company may be able to prove that they were outside the loop of controversy that has opened.

But many will wonder whether the argument that apparently raged so hotly between Sir Philip and Mr Van der Vijver manifested itself in other ways that impeded, and will still impede, the development of the company in the coming months and years.

Concern that civil or even criminal actions will be pursued will also remain. They cast a pall over Shell that yesterday's events do not clear.

Shell needs to do four things to set itself back on course. So far it has gone a long way to settling the reserves issue — although that may be the least important of the four things and it could yet come back a-haunting.

It has gone some way, but not even halfway, towards one of the three remaining issues. It needs to sort out its Anglo-Dutch structure. Welcome noises were made yesterday about accelerating the review of corporate governance. But firm action is required to clarify the command and control functions.

Shell also needs an injection of fresh executive blood at the highest level.

It will probably be insufficient, moreover, to expect that the appointment of a permanent new finance director from outside Shell will be enough to satisfy on this front.

Most importantly of all, Shell has to find oil. If it was finding oil at respectable rates over the past five years, it is probable that the reserving issues would have never emerged.

Sadly, however, there is little evidence that Shell has the capacity to find the all-important black stuff.

THE TIMES APRIL 20 2004

NATURAL RESOURCES
▼ 0.9%

□ Shell, the oil group, was rocked by a damning report which revealed that company executives lied to shareholders about the true level of its oil and gas reserves. Excerpts from the report showed that former executives ordered the destruction of documents detailing shortfalls in reserves.

Big reservations remain at Shell

Business Commentary

ROBERT COLE

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After all, no one is ever going to be able to come up with a cast-iron system for defining, to any degree of accuracy, what the reserves of any oil company are at present or are likely to be at any point in the future. There will always be a degree of guesswork in interpreting the findings of scientific investigation. Adopting appropriately conservative assumptions is wise, but at the same time wrong impressions might be built by adopting policies that are too conservative. The key is to hedge any statements about reserves, or any other unknowables, with appropriate caveats.

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Appendix. N

Morning meeting

This is a truly gobsmacking tale

STEPHEN KAHN
CITY EDITOR

SMOKING gun evidence is rare in City scandals. With Shell you can almost smell the cordite, such is the extent of the devastating catalogue of deception uncovered by the investigation into the recategorisation of the oil giant's proven reserves by US law firm Davis Polk & Wardwell.

Law suits, perhaps criminal charges in the US, are said to be likely to follow. I imagine vast tomes will be written on how Shell, a household name around the world, could have got itself in such a mess. Yet the details that Davis Polk has already uncovered are truly gobsmacking.

Sir Philip Watts became chairman after being the boss of the company's Exploration & Production (EP) unit due "in part, to his ability to meet or exceed reserve expectations". Watts ran the core EP between 1997 and 2001, when the mis-bookings were made. He was elevated from this post to the top job.

His successor at EP was Walter van de Vijver and he too might have had expectations that the chairman's office would one day be open to him.

This may help to explain why the war of words between the two over the size of proven reserves never became public.

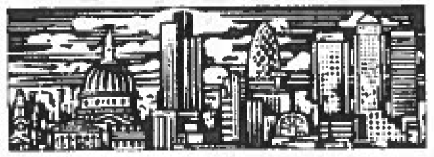
There does not seem to have been any internal mechanism which would have alerted anyone else in the company, including its finance director, to what was going on. The company's non-executive directors have been found asleep at the wheel.

It is nothing short of extraordinary that a "single, part-time, former Shell employee" had the duty of auditing the company's internal reserves.

The company stressed yesterday there was no evidence of any financial impropriety in relation to the reserves issue.

This is a moot point. Shareholders would be fully justified in thinking that telling them lies about the true level of reserves protected salaries, bonuses and promotion prospects of those involved in the cover-up.

Shell shocked and still very badly in denial



MARTIN DICKSON
LOMBARD

Company needs to face reality

They just do not get it. For all their public breast-beating yesterday, the leaders of Royal Dutch/Shell are still in denial about some fundamental characteristics of the group that contributed to its oil reserving scandal; and their curiously complacent world view should be worrying for investors.

Yesterday's publication of a damning external report on the company's over-reserving was accompanied by some ritual handwringing: "profound regret and apologies . . . major embarrassment etc etc." The group produced a third head on a platter, that of Judy Boynton, the chief financial officer, to pile on top of those of Sir Philip Watts, chairman, and Walter van de Vijver, head of exploration.

But the whole thrust of remarks by Aad Jacobs and Lord Oxburgh, respectively chairmen of Royal Dutch and Shell, was to paint the scandal as a narrow technical failure within the company's exploration and production arm.

It was not, declared Lord Oxburgh, about Shell but a small part of E&P. "I don't think it has significance for the culture of the company as a whole." The story was attributable, he declared, to "human failings not structural deficiencies".

This is an extraordinary conclusion to reach on the evidence presented in the external report. There was certainly a huge problem of aggressive reserve booking in E&P, and gross deficiencies in the company's control mechanisms, which it is now belatedly organising programmes to address.

But what is so shocking about the report is the way it highlights barefaced lying, duplicity, vicious infighting, complacency and incompetence at the very top of the company in its key executive body, the Committee of Managing Directors.

Lord Oxburgh, who reels off platitudes about the company's "honesty, integrity, respect for people," must be purblind if he concludes this is not more broadly about Shell's culture.

For the report lays out a running battle over several years between Sir Philip, on whose watch at E&P many of the questionable reserves were booked, and his successor, Mr van de Vijver, who repeatedly argued internally that reserves had been overbooked. As early as February 2002 he raised concerns with the CMD. Yet nothing was done to alter public perceptions until January this year.

It is hardly surprising the three heads have rolled. Mr van de Vijver, despite all his private alarm raising, is accused by the report of attempting to destroy a document recommending disclosure of the need to debook reserves. It says Ms Boynton, who had responsibility for public financial disclosures, took virtually no action before this year to inquire independently into aggressive bookings.

But the facts also raise important questions about Shell's unusual and cumbersome form of corporate governance, involving separate Dutch and UK boards, linked through the CMD. It is a system that appears to militate against clear and proper managerial accountability.

The report notes that external checks on reserve abuses were frustrated. Shell's outside directors and its group audit committee "were not presented with information that would have allowed them to identify or address the issue". Mr van de Vijver, in attempting to justify his non-disclosure, blames the culture: "you are not supposed to go directly to individual board members or to the audit committee".

It is hard to avoid the conclusion that his concerns would have had much more chance of being aired and remedial action taken far earlier, if Shell had had an Anglo-Saxon governance structure with a single unified board bringing together executives and independent directors under a non-executive chairman.

But the company does not appear to see it that way. Lord Oxburgh does not think the report has implications for its structure. Following pressure from shareholders, the group is conducting a review of corporate governance and it said yesterday it would be accelerating this in the light of the review.

That may not mean much. The annual meeting in June will only get a progress update and Lord Oxburgh warned yesterday that while structural relations between the two companies was on the agenda, the situation was more complex than those who offered advice appreciated. Doubtless it is, but that is no reason for defeatism.

Royal Dutch is the dominant partner, with 60 per cent of the equity. It is conservative, has a flagship role in the Dutch economy and the board is entrenched through its control of priority shares, which carry extra voting rights. But complexity should not stop the company aiming for the creation of a unified board on the lines of those other Anglo-Dutch combines, Reed Elsevier and Unilever.

Investors should want Royal Dutch/Shell to come out of this crisis a stronger, better managed group that has cast off its inturned, complacent culture. On the evidence of yesterday's presentation (with the exception of the crisply impressive Malcolm Brinded, managing director of Shell), there is still a long way to go.

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For European Comment go to www.ft.com/eurocomment

Human failings and hyperbolic e-mails

Clay Harris reports on how the top men at Royal Dutch/Shell came to wage a personal war

Royal Dutch/Shell's top executive committee was warned that a big slice of its proved reserves was not compliant with Securities and Exchange Commission rules in February 2002, almost two years before the oil and gas group announced the over-statement.

The first warning, in a note from Walter van de Vijver, forced out last month as head of exploration and production (EP), was revealed yesterday in a summary of an independent report to Shell's internal audit committee. The full 150-page report by Davis Polk & Wardwell, the US law firm, was not published at the request of the regulators still investigating Shell. But Aad Jacobs, chairman of the Royal Dutch supervisory board, said it gave a "fair and balanced report of what happened".

It reveals that Sir Philip Watts – also forced out last month – and Mr van de Vijver were at war with each other virtually from the moment Sir Philip ascended to Shell's top executive position and the latter succeeded him as head of exploration and production.

Their tension was based on Mr van de Vijver's view that bookings of reserves during Sir Philip's tenure had been "aggressive" or "premature" and non-compliant with Shell's own guidelines and SEC rules. Events showed that Mr van de Vijver was "in the main correct," the report said.

According to Davis Polk, the two men engaged in a "pointed dialogue" for two-and-a half years. Lord Oxburgh, non-executive chairman of Shell Transport and Trading, spoke yesterday of "ill-considered hyperbolic e-mail chatter".

The edited extracts of the report give unusual insight into how the reserves crisis developed at Shell and will test Lord Oxburgh's contention that "today's story is about human failings, not structural deficiencies".

Davis Polk noted a perception, within Shell and in the market, that "Sir Philip's own success could be attributed, in part, to his ability to meet or exceed reserve expectations".

Other executives and employees had "varying degrees of exposure to the debate" between Mr van de Vijver and Sir Philip but "by both responsibility and authority [they] were uniquely placed to address these issues. [They] were viewed as the most powerful forces in management."

Mr van de Vijver's February 2002 note to the committee of managing directors said up to 2.3bn barrels of proved reserves were exposed because of non-compliance. Sir Philip wanted another report to be made to the CMD. But on May 28 2002, before that could happen, he directed Mr van de Vijver by e-mail to leave "no stone unturned" to achieve a 100 per cent reserve replacement ratio for 2002, "a result inconsistent with significant de-booking," Davis Polk said.

Mr van de Vijver's note to the CMD on July 22 2002 failed to address the non-compliance with SEC rules. It illustrated, said the report, "a strategy 'to play for time' in the hope that intervening helpful developments would justify, or mitigate, the existing reserve exposures". On September 2, he told the CMD "the market can only be 'fooled' if credibility of the company is high, medium and long-term portfolio refreshment is real and/or positive trends can be shown on key indicators". But Shell was "caught in the box" on all three and faced a "negative spiral".

After a private dinner, Sir Philip re-affirmed the 100 per cent RRR target, and Mr van de Vijver responded: "I must admit that I become sick and tired about arguing about the hard facts and also cannot perform miracles given where we are today."

Mr van de Vijver told his staff: "We finalised our [business] plan submission and could easily leave the impression that everything is fine." The reality was "we would not have submitted this plan if we were not trying to protect the group's reputation externally ... and could have been honest about past failures," including reserves manipulation.

On November 9 2003, after receiving what he considered an unfairly critical performance review from Sir Philip, Mr van de Vijver responded by e-mail: "I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings." Late last year, Shell began the probe that resulted in the January disclosures.

A memo from EP staff on December 2 2003 to Mr van de Vijver said 2.3bn barrels were non-compliant, about the same amount identified almost 22 months previously. It concluded the 2002 SEC filing was "materially wrong" and "not to disclose it would constitute a violation of US securities law ... and increase any potential exposure to liability within and outside the US". Mr van de Vijver immediately e-mailed one of its authors: "This is absolute dynamite, not at all what I expected and needs to be destroyed." It was not.

Mr van de Vijver's lawyers said the report did not describe the "extraordinary efforts" he had made to examine some of the reserves issues. The results of reviews he had ordered had not been ready until late 2003, partly explaining the timing of disclosures. Some of his graphic e-mails had been taken out of context "despite the benefit of two personal interviews".

Davis Polk said: "The booking of 'aggressive' reserves and their continued place on Shell's books were only possible because of certain deficiencies in controls." The internal reserves audit was done by an "understaffed and undertrained" ex-employee. "He acquiesced in or attempted to assist Shell in 'managing', rather than de-booking, non-qualifying reserves. Assuming vigorous efforts made entirely in good faith, a single, part-time, former employee could not constitute an effective check on 'aggressive' reserve bookings."

Judy Boynton, who yesterday lost her job as chief financial officer, was "not effective" in her compliance function. She took "virtually no action ... to inquire independently into facts." The report said her "ability to act effectively in a compliance function was somewhat impaired because, until recently, none of the business units' CFOs reported to her ... on the issue of reserves, it may be that her responsibility exceeded her authority".

"External" checks were also frustrated, the report said. "Outside directors and [the group audit committee] were not presented with the information that would have allowed them to identify or to address the issue." Lord Oxburgh said yesterday: "The committee had tried to get hold of the information for a long time but had failed."

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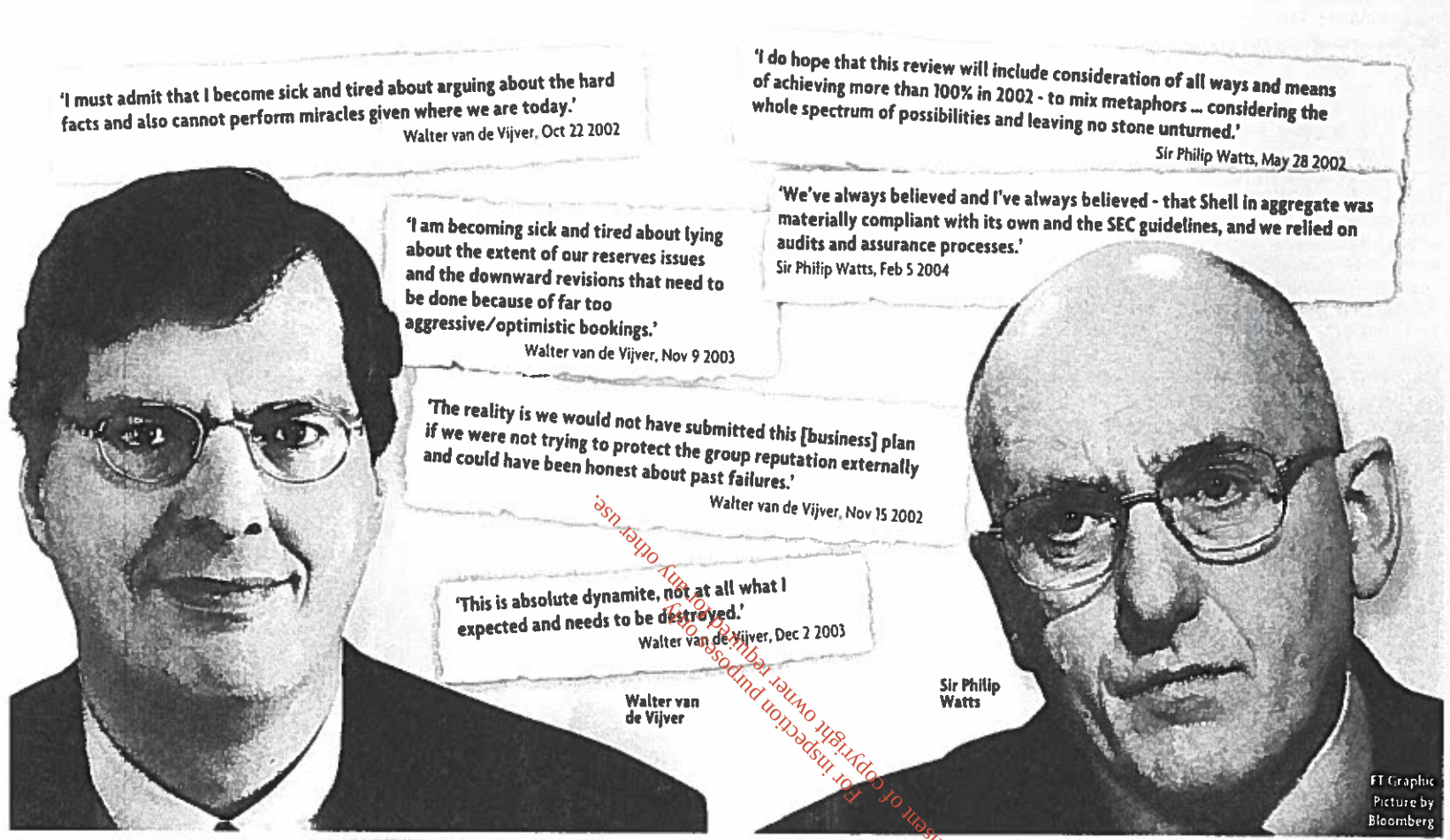


The paper trail

Jun 2001: Walter van de Vijver suceeds Sir Philip Watts as chief executive of Shell's EP unit

Feb 11 2002: Mr van de Vijver forwards a note to Committee of Managing Directors warning as much as 2.3bn boe* could be non-compliant with SEC rules

May 28: Sir Philip emails Mr van de Vijver to leave 'no stone unturned' to achieve 100 per cent reserve replacement ratio

Jul 22: Mr van de Vijver makes further presentation to CMD suggesting that EP 'manage' the reserve position over time

Sep 2: Mr van de Vijver sends further note to CMD describing 'the uncomfortable situation EP is in'

Feb 28 2003: Mr van de Vijver emails Sir Philip stating 'we know we have been walking a fine line recently on external messages'

Aug 25: Mr van de Vijver drafts his 'Mid-year 2003 Review Summary' mentioning 'too aggressive reserves bookings in the past'

Nov 9: After receiving a critical performance review, Mr van de Vijver sends Sir Philip an email complaining he was tired of 'lying' about the extent of reserve issues

Late 2003: Project Rockford, an internal review of reserves bookings, begins

Dec 2: EP staff draft memo stating 2.3bn boe of proved reserves were non-compliant. Mr van de Vijver calls for the memo to be destroyed

Jan 9 2004: Shell downgrades reserves by 20 per cent

Mar 3: Sir Philip and Mr van de Vijver resign

* Barrels of oil equivalent

THE MEN WHO RAN THE COMPANY IN 2002

In early 2002 Shell's Committee of Managing Directors was warned for the first time that the company's reserves could have been significantly over-stated, writes Norma Cohen.

However, it took almost two years for the full details to emerge and the company to acknowledge publicly the extent of the misjudgment.

At the beginning of 2002, Shell's Committee of Managing Directors, the executives who, in effect, ran the company, included:

Sir Philip Watts - Sir Philip was chairman of the CMD from 2001 to 2004 and a managing director of Shell Transport and a Shell group managing director from 1997. He joined Shell in 1969.

In 1991 he went to Lagos to head Shell's operations there and returned to Europe in 1994.

Jeroen van der Veer - Mr Van der Veer, now chief executive of Shell, was the vice-chairman of the CMD. At Shell, he was responsible for chemicals, renewables, Shell hydrogen and group research. He has served more than 30 years.

He was appointed advisory director of Unilever on May 1 2002.

Paul Skinner - Mr Skinner resigned from Shell in September 2003 to become chairman of Rio Tinto. At Shell, Mr Skinner had been responsible for oil products, gas and power, information technology and Shell Capital. He had geographic responsibility for Canada and Europe.

Walter Van de Vijver - Mr Van de Vijver was responsible for exploration and production, contracting and procurement. He was in charge of the Central and South American geographic regions as well as sub-Saharan Africa.

Harry Roels - Mr Roels spent more than 30 years at Royal Dutch Shell and resigned in June 2002 to become chairman of RWE Group.

Malcolm Brinded - Mr Brinded succeeded to the CMD following the resignation of Mr Roels in 2002. He first joined Shell in 1974 as an offshore structures engineer. He was first appointed to the board of Shell UK, and later took on group responsibilities. He is responsible for gas and power, Shell Trading, information technology and the geographic regions of Australasia and East Asia.

US regulators ready to get to grips with internal report

By Adrian Michaels in New York

The summary of Shell's internal report reads like a company road map for regulatory actions against Sir Philip Watts and Walter van de Vijver and a long plea, crafted with the help of experienced US lawyers, to treat the company lightly.

All of Shell's latest disclosures will be noted carefully by regulators.

The Securities and Exchange Commission and the Department of Justice, the US's civil and criminal authorities, and the UK's Financial Services Authority are all investigating the company. They do not comment on individual investigations but, in the US at least, sanctions against the whole company – as opposed to individuals – are usually determined by its willingness to co-operate and remedial actions taken. But equally critical is how high up the management ladder the wrongdoing occurred and how long it lasted.

David Becker, a former general counsel at the SEC, and now at the law firm of Cleary Gottlieb Steen & Hamilton in Washington, said: "There is a lot of pressure on companies to give a full account [to regulators and the public] and to deal appropriately with the people who misbehave."

The SEC first has to decide if people at Shell were intent on defrauding investors by manipulating numbers that would affect the share price or financial statements. The SEC has a lower burden of proof in its civil cases than would be needed for any Department of Justice criminal case.

Shell's disclosures yesterday make a compelling read for the SEC. First the report's summary says that the reserve replacement ratio – the rate at which used oil and gas was being replaced by new finds – was central to company announcements as it wrestled with investor sentiment.

Although the bottom line was little affected by reserve downgrades, Shell makes it clear how conscious its executives were of losing investor confidence by lowering the replacement ratio.

Then the report quotes e-mails from both Mr van de Vijver and Sir Philip in which they voice at best ambiguous views on number manipulation. Sir Philip talks of "considering the whole spectrum of possibilities" in boosting replacement ratios. Mr van de Vijver talks of the market being "fooled" and of "lying about the extent of our reserves issues".

The company then admits to significant internal weaknesses itself – in the internal audit function and in the compliance role of its finance department. But it devotes the rest of the summary to detailing its remedial efforts.

The Department of Justice upgraded its guidelines early in 2003 on whether whole companies should be prosecuted, a potentially devastating blow. It now has "increased emphasis on and scrutiny of the authenticity of a corporation's co-operation".

The SEC, meanwhile, opens a file at the start of an investigation that tracks how co-operative a company is. It monitors who leaves the company and the actions of those who are left behind.

The company will also have to fend off private litigation from disgruntled investors. Kenneth Vianale, a Florida lawyer, said any disclosure helped his case, but the whole report – withheld, the company said, pending outside probes – was crucial. "The question is whether they'll give us the bulk of the information."

Shareholders step up calls for structural reform

By Norma Cohen in London and Ian Bickerton in Amsterdam

Shareholders stepped up their calls for structural reforms of Royal Dutch/Shell's governance after the release yesterday of a scathing report on how it failed to disclose its true reserves position for two years.

But Lord Oxburgh, non-executive chairman of Shell Transport and Trading, appeared to cast doubt on the extent to which directors were determined to undertake structural reforms, saying: "It [the report] makes quite clear that structure had nothing to do with the problems."

Shell has not moved forward the expected completion date of 2005 for a review of its structure despite accelerating the process by appointing a working party and recruiting external legal, tax and financial help.

UK shareholders said they were adamant about seeing reforms through. "There is no going back for this company," one institutional investor said. "The question is whether they have to have [reform] dragged out of them or whether they participate in the process."

Guy Jubb, head of corporate governance at Standard Life Investments, said: "We want to see a more unified structure and more efficient management arrangements."

One Dutch shareholder said he would be disappointed if no conclusions on the review were announced before 2005's annual meetings. But Netherlands-based ABP and PGGM, two of Europe's largest pension funds, while welcoming the move to speed the review, stopped short of criticising the dual-board structure under which the Dutch and UK arms of Shell are overseen separately. Royal Dutch accounts for 60 per cent of the group, and Shell Transport for 40 per cent.

PGGM welcomed the "seriousness with which the company takes this matter", and said: "We have always said that whatever Royal Dutch/Shell does is fine with us as long as it is a clear step and they are moving in a way that is positive."

ABP said: "Shell has listened to the shareholders and the signals."

UK shareholders, however, said they want the company to scrap the Committee of Managing Directors (CMD), the executive directors of the two companies.

The CMD was warned in February 2002 about mis-reported reserves but there is no sign that it passed that information to the boards.

"This report confirmed a view that has been forming for some months – that the company was dysfunctional in the way information flowed and in the way authority flowed," one shareholder said. "Reporting lines were unclear, information reporting was unclear. Individuals were able to bury information for a long time."

Although Shell had made previous public efforts to upgrade its image – "You got the feeling they were waiting for their BP moment but it never came," said one shareholder (referring to the success of Shell's rival) – investors said senior management privately had never accepted the need to change.

"You got the feeling there was a kind of a reverse duck going on," one institutional investor said, referring to an animal notable for its calm demeanour above water while churning wildly underneath. "But all the action was above the water with nothing going on below."

Grim reading follows further downgrades

By Andrea Felsted

It was looking grim for Shell on all fronts yesterday, but perhaps the worst news commercially was of a third reserves downgrade in just three months.

The latest downgrade was small, a mere 300m barrel reduction in proved reserves for 2002 and a further 200m barrels of oil equivalent for 2003. But this, combined with the 20 per cent reserves reduction announced in January, leaves Shell looking distinctly disadvantaged compared with its competitors.

"This is a low point for Shell," said Peter Hitchens, at CAI Cheuvreux, who estimates the group has now cut some 25 per cent off its reserves figure. After the downgrades, Shell will have a five year reserve replacement ratio of 50-60 per cent. This compares with 100-150 per cent at rival integrated oil companies, says Mr Hitchens. Moreover, the life of its reserves is now just 10.2 years, while JJ Traynor, at Deutsche Bank, estimates that BP had a reserve life of 14.1 years in 2003 and ExxonMobil's stood at 13.5 years.

Yesterday's downgrade means the company will now have replaced only 60 per cent of its depleted stocks in 2003, rather than the 82 per cent it announced in March and the 98 per cent it outlined in February.

The company knew there was no point in arguing that the position was anything but grim. "Clearly this is not an acceptable reserves replacement performance over the last five years," said Malcolm Brinded, head of exploration and production.

But he tried to reassure investors that the worst was now out. Shell had spent a month examining almost 300 fields, covering 90 per cent of its total reserve base. As a result of work undertaken over the last month, adjustments had been made to almost 100 fields. Of this, adjustments in over 70 fields were for amounts less than 10m barrels.

In order to draw a line under the potential for fresh downgrades, Shell indicated that the worst case scenario for the remainder of the portfolio was a re-categorisation of a further 150m boe.

The reserves review also included related assets. Two southern North Sea assets will be impaired resulting in a net charge of $66m. Meanwhile, Mr Brinded attributed the poor replacement reserves ratio to the fact that in the mid-1990s, Shell's exploration activity was decided locally, and concentrated on so-called "near field" exploration.

This is the practice of trying to find new deposits of oil and gas in mature areas, and produce them using the platforms that were already in place. There was not enough exploration in new frontier areas capable of delivering large finds.

Consequently, Shell slipped behind rivals who forged forward with frontier exploration.

Mr Brinded said his predecessors had begun to put in place a strategy to remedy this, and this was already feeding through into exploration success.

He intends to continue focusing on regions capable of delivering large finds, so called "big cats".

Meanwhile, he added, Shell would also focus on finding deposits of gas to supply the liquified natural gas market and which could also be turned into petroleum products.

The exploration division would also target deposits of oil and gas in deep waters and other "unconventionals in general".

According to analysts Shell must continue to focus on "big cat" fields if it was to pull itself out of its current crisis. However, this was highly risky.

It could also look to restructure its portfolio in order to concentrate on the regions where it is best placed – such as expanding in Iran or pulling back from investing in China.

Mr Traynor said Shell must also start "crystallising some of its long-term options" by developing the deposits of oil and gas that it has found, for example in deep waters in Malaysia and the Gulf of Mexico.

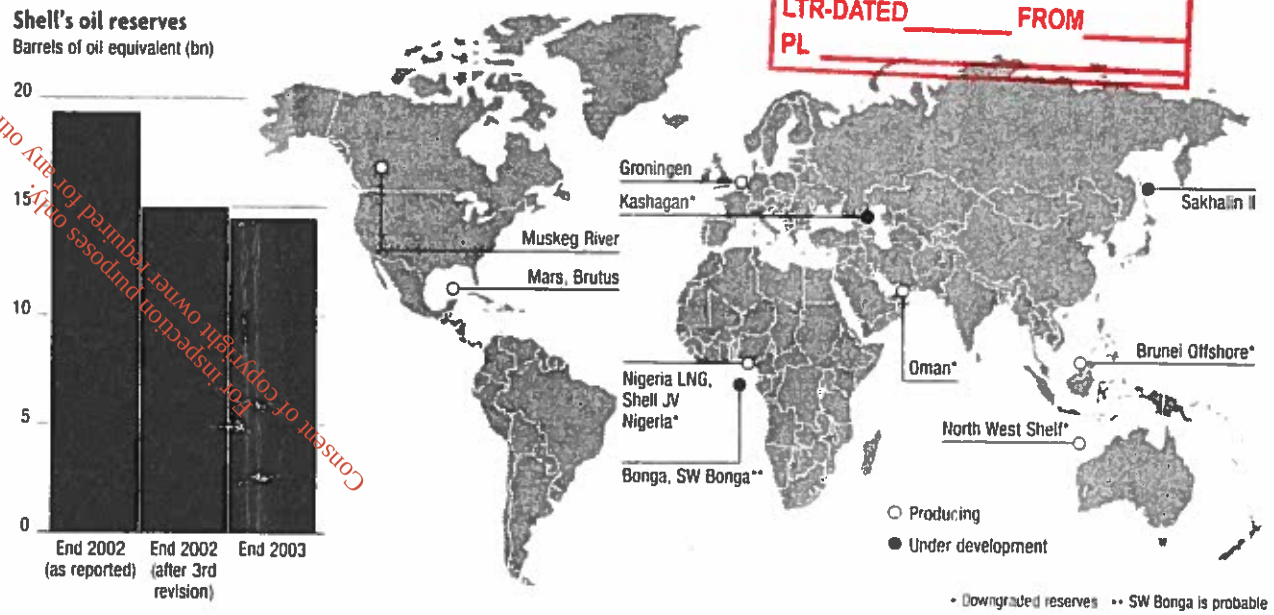
But the corollary is likely to be higher capital expenditure. There is also the risk that Shell will rush into ill-judged exploration around the world.

Moreover, many of the moves to bolster Shell's reserves and provide it with opportunities going forward will have long lead times.

And, in the meantime, it faces flat production this year and lower production in 2005. It also faces challenges on existing developments, such as delays at Bonga, offshore Nigeria, and cost increases at the Sakhalin II development off Russia's far eastern coast.

Finally, any news of additional reserves is likely to be greeted with some scepticism given this year's series of downgrades. But according to Mr Hitchens, Shell has, by admitting the problems in its exploration and production division in the past, taken the first steps to remedying them.

"[Shell's position] is a bit like being an alcoholic in that the most difficult thing is to realise you have got a problem. Once you have realised that you can go ahead and sort it," he says.



BUSINESS

TUESDAY APRIL 20 2004 ■ www.timesonline.co.uk/business

Patience Wheatcroft
Business Editor

Deceitful Shell 'needs ten years' to rebuild exploration business

By Carl Mortished and Jenny Davey

SHELL could take the rest of the decade to rebuild its beleaguered oil exploration business, which was yesterday revealed to have been the victim of a huge deceit by its senior management.

In a damning 463-page report into the behaviour of Shell's top directors, Britain's second largest oil company was revealed to have repeatedly lied to shareholders about the value of its oil and gas reserves.

Evidence of the concealment, revealed in a report compiled by outside lawyers commissioned by Shell's board and which is now being scrutinised by the US Department of Justice and American securities regulators, emerged as the company removed a third senior executive, Judy Boynton, the finance director, and wrote down its reserves for the third time in three months.

The scale and duration of the deception by Sir Philip Watts, the former chairman, and Walter van de Vijver, former head of exploration and production, combined with news of a further cut of 500 million barrels of proven reserves, prompted Standard & Poor's, the rating agency, to strip Shell of its triple A credit rating, lowering it to AA plus.

Standard & Poor's cited "durably weak corporate governance" and said: "A successful upstream division, notably in exploration, is key to an integrated oil and gas company's creditworthiness."

The final tally of the leakage from what was once seen as an enviable portfolio of assets, leaves Shell with just 14.5 billion barrels in its tank, a reserve life of just ten years, the lowest among the oil majors.

More worrying, analysts said, is the confirmation that Shell has only been replacing between half and 60 per cent of the oil it produced over the past five years. Analysts said that Shell had a mountain to climb to restore its position in terms of reputation and actual performance. "Realistically, it will take the rest of the decade to restore its reserve base," Jon Rigby, of Commerzbank, said.

Malcolm Brinded, the new head of exploration, said the record in replacing reserves was "not acceptable" and admitted that Shell had made errors in focusing on its own patch instead of moving into new oil provinces, such as Angola and Azerbaijan. He also cited the decision made by Mark Moody-Stuart, former chairman, in 1998 to cut drastically exploration spending.

Lord Oxburgh, chairman of Shell's parent company, said the report from Davis Polk & Wardwell into the reserves scandal was a major embarrassment that was attributable to human failings, not structural deficiencies, and he promised reforms, including tighter reporting rules.

Analysts called for new blood, criticising the remaining directors as "pretty green and wholly unproven". One suggested that Philip Hampton, the former Lloyds TSB finance director who previously held the top finance job at British Gas, was a possible contender.

Tim Morrison, group controller, is currently filling the shoes of Ms Boynton, who remains with the company. While she was not accused of any impropriety, Shell said it would be looking outside the group to seek a more robust finance director "with top credentials". The report suggests that Ms Boynton, took "virtually no action" to inquire independently into the facts relating to aggressive bookings of reserves.

The scandal has already prompted class-action lawsuits in the United States while American prosecuting authorities have requested documents for review.

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HITTING THE ROCKS

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- **March 18, 2004:** writes down a further 470m barrels of oil
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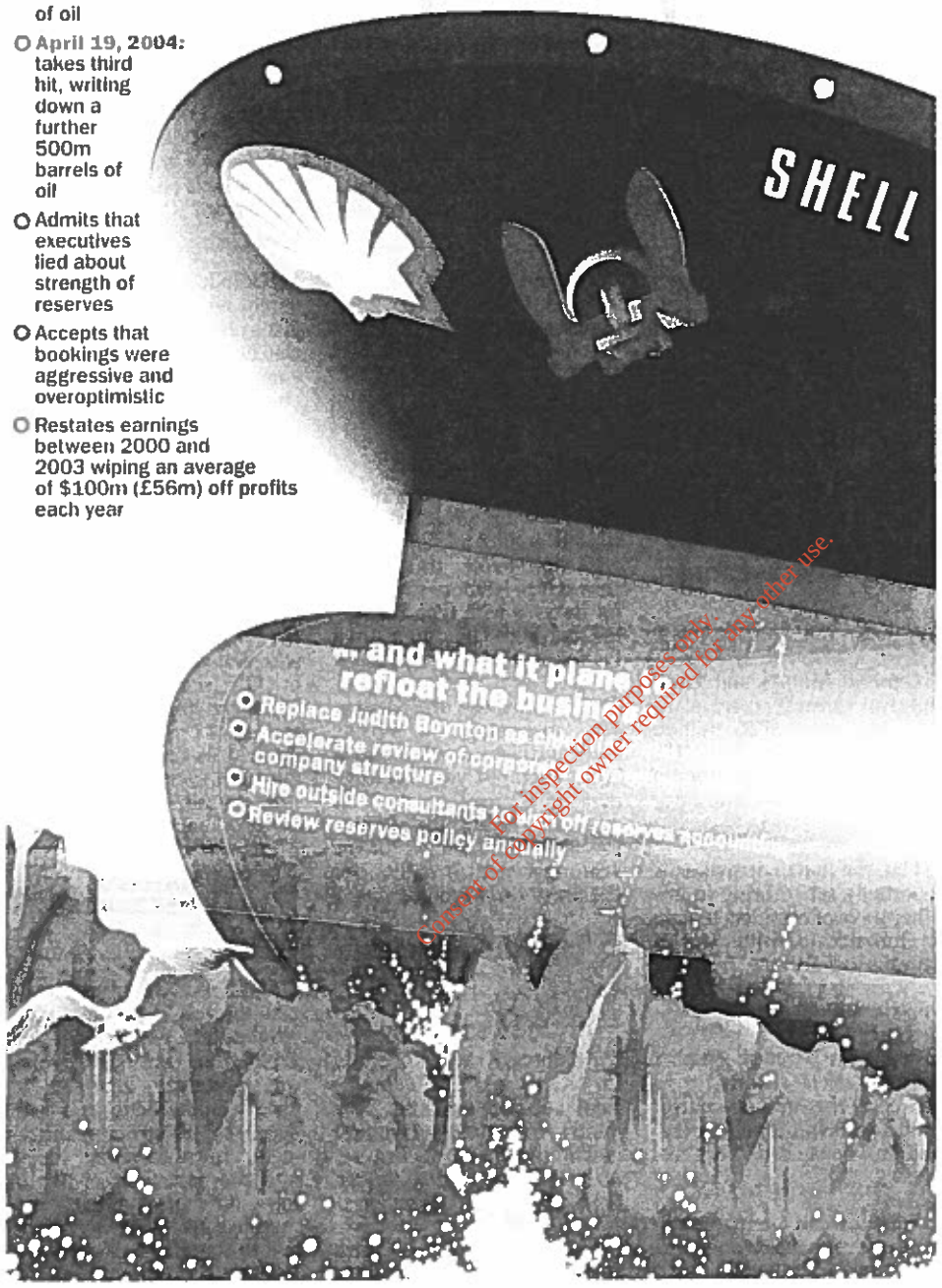

Unravelling of the cover-up

By Carl Mortished

IT IS a tale of lies, intrigue, backstabbing and cover-up. The report into the reserves scandal at Shell gives a horrible insight into the climate of panic and distrust that engulfed the senior executives of the multinational as they attempted to sweep under the carpet a fundamental problem — that the company was struggling to find oil.

Walter van de Vijver, the sacked head of exploration and production and anti-hero of the report by Davis Polk & Wardwell, the New York law firm, comes across as a pathetic figure. Finding that his predecessor, Sir Philip Watts, had left him a portfolio leaking like a sieve, Mr Van de Vijver fired off resentful e-mails to his boss (Sir Philip) saying he couldn't perform miracles.

Like a whipped dog that fears its master's wrath but craves another bone, the Dutchman railed at Sir Philip, but remained strangely loyal. A less than flattering performance review in November 2003 (delivered by the man who had created the mess) was the last straw for the Dutchman who told his boss he was tired of lying. He told his colleagues that the reserves review contained a "watershed reputational disaster", that the problem was created in the 1990s and that he would not accept "cover-up stories".

Instead, he joined Sir Philip in a further cover-up at a press conference in February where they pretended the reserves issue had only just arisen. Sir Philip abandoned his usual bullying tactic, apologised sweetly and then delivered another whopper. He said that he had always believed that Shell was complying with the rules, but dramatic events came to his attention late last year. "I remember writing down the words 'get the facts and do the right thing'," he said.

Yesterday's report is largely Mr Van de Vijver's story, made up of the Dutchman's voluminous e-mails and reports, written in a mixture of colloquial language and management jargon. "We are struggling on all key criteria (caught in the box)," he writes. There is almost nothing of Sir Philip's story, other than his admonition, in May 2002, to Mr Van de Vijver that he should "leave no stone unturned" replacing Shell's oil reserves in 2002.

The report is as much a tale of corporate misgovernance as malfeasance. One of the world's largest oil companies had an internal reserves audit team of just one, a part-time former Shell employee who regrets that he was not forceful in enforcing the guidelines. But he admits that "it would have probably cost me my job". Likewise, Judy Boynton, the finance director, was unable to police the system because no one reported to her.

> 'I am becoming sick and tired about lying about the extent of our reserves'
>
> Walter van de Vijver in an e-mail to Sir Philip Watts, November 9, 2003

> 'We've always believed Shell was materially compliant with SEC guidelines'
>
> Sir Philip Watts tells a news conference on Feb 5, 2004

> 'EP was in a far worse state in mid-2001 than was portrayed by my predecessor to management'
>
> Walter van de Vijver, March 22, 2004

The report does not explain why Shell's dual boards, replete with famous names including Wim Kok, the former Dutch Prime Minister, were content with such a ramshackle system.

WHAT NEXT FOR . . .

BID STAKES

Analysts regard Shell, the world's third largest oil group, as an unlikely takeover target. Operating in more than 145 countries and with a market value of £90 billion, the group is simply too big a proposition for all but the biggest predators — and US competition authorities would block any move by ExxonMobil or BP, the most likely bid contenders. Shares in Shell have bounced 13 per cent since the group first admitted that it had overstated oil reserves in January. The stock slipped just 3p to 389¾p yesterday, suggesting that the market believes that all the bad news is already out.

THE PLAYERS

Sir Philip Watts, Shell's former chairman, and Walter van de Vijver, its former head of exploration, face an uncertain future. Yesterday's report will be read with interest by the Financial Services Authority, the US Justice Department and the Securities & Exchange Commission. The FSA refuses to comment, but it is known that the regulator is conducting an investigation into Shell. The US authorities, which are also carrying out inquiries, have asked Shell not to release the full text of the report in order to give them time to root through the evidence, raising the prospect of criminal charges.

THE BOARD

There is now a management vacuum at Shell, a company once regarded as a training ground for Britain's brightest and best. Lord Oxburgh and his colleagues on the Royal Dutch and Shell Transport boards must find credible candidates to fill the void — and quickly. However, Shell's dual Anglo-Dutch boards have proved to be poor headhunters, displaying a lack of judgment in appointing Sir Philip, Mr Van der Vijver and Judith Boynton to key roles. Shareholders will no doubt seek changes, including the exclusion of former Shell executives from the nominations process.

OIL PRICES

The figure of 4.9 billion barrels may sound like a significant amount of oil and gas, but analysts insist its removal from the world's "booked reserves" is not enough to send the oil price soaring. They point out that the oil price is controlled by the 11 member countries of Opec and Russia. About 60 per cent of the reserves that Shell was forced to downgrade were expected to come from Oman, Nigeria, Brunei and the Gorgon gasfield offshore Western Australia. Andrew Pearson, at Wood Mackenzie, says: "If Oman doesn't meet its targets, Saudi Arabia or Iraq or Kuwait [all Opec members] can step in and supply the market."

REGULATION

The SEC, the US financial watchdog, is conducting an investigation into the way oil and gas companies account for their reserves. The inquiry began as an investigation into technical problems in reporting oil and gas reserves in the Gulf of Mexico. The specific lapses at Shell have also exposed weaknesses in SEC regulation and it has extended its inquiry to other oil majors. The SEC has admitted that defining the concept, which blends geological knowhow with financial and technical expertise, is not an exact science but industry experts are calling for reforms to SEC rules.

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Green with envy over Carlton payoff

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THE TIMES

BUSINESS

EDITED BY PATIENCE WHEATCROFT ■ www.timesonline.co.uk/business

THE TIMES APRIL 20 2004

All change in grand plan for railways

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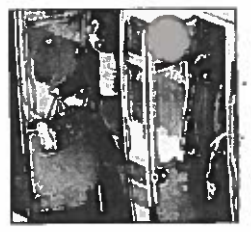

BUSINESS TODAY

WH Smith soars on venture capitalist's £940 million offer

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Britain's bitter end for Terry's Chocolate Orange

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STOCK MARKETS

FTSE 100	4546.2 (+8.9)
FTSE all-share	2264.90(+5.00)
Dow Jones	10437.80 (-14.20)
Nasdaq Comp	2020.43 (+24.69)
Nikkei	11764.21(-60.35)
Eurotop	2227.19 (+2.80)

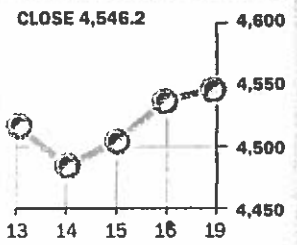
CURRENCIES

Sterling	$1.8077 (1.7960)
	€1.5040 (1.4960)
	Y196.10 (193.76)

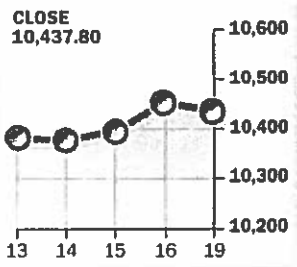
COMMODITIES

North Sea Oil (Jul)	
Brent 15-day	$33.30 ($33.55)
Gold	
London	$402.20 ($401.75)

FTSE 100



DOW JONES



NEED TO KNOW:
the day in brief P38 ▶

Shell lied for years about state of gas and oil reserves

By Jenny Davey

BRITAIN'S second-largest oil company admitted yesterday that it had repeatedly lied to shareholders about the true state of its oil and gas stocks, as the company published a damning report into the behaviour of its former managers.

The frank revelation came as the company removed a third senior executive, Judith Boynton, from office and announced further cuts to the group's bank of "proven" reserves. Ms Boynton, the finance director, will be replaced temporarily by Tim Morrison, the group controller.

Excerpts released from a 463-page report from Davis Polk & Wardwell, the US law firm, revealed that Sir Philip Watts, former chairman, and Walter van de Vijver, former head of exploration, deceived investors by ordering the destruction of documents detailing shortfalls in reserves even after it became apparent that many bookings were "aggressive" and "overoptimistic".

In an e-mail to Sir Philip last November published in the report, Mr van de Vijver said: "I am becoming sick and tired about lying about the extent of our reserves issues and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

The deception, which stretched back several years, only came to light in January, when Shell announced that it had to write down 3.9 billion barrels, sending its shares plunging. In March further write-downs were revealed and yesterday the company cut its estimates by a further 500 million barrels, taking the total number of oil and gas barrels "recategorised" to 4.85 billion.

The company said that an average of $100 million (£56 million) a year would be wiped from its earnings between 2000 and 2003. Shell refused to comment on whether Ms Boynton would receive a payoff as rumours swirled that she could be in line for up to £1 million.

Ms Boynton, who will retain an advisory role with the company until June, was condemned in yesterday's report for initially taking "virtually no action" to inquire independently into the facts relating to aggressive bookings of reserves.

The scandal has prompted class-action lawsuits in the US and observers speculated that many more investors will kick-start legal action after watching millions of pounds wiped off the value of shares.

Lord Oxburgh, chairman of Shell's parent company, admitted the report had revealed "disturbing deficiencies" in past reserves reporting practices, but insisted that Shell would take "vigorous action" to ensure the mistakes were not repeated.

The shares slipped 3p to 389¼p.

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'I am becoming sick and tired about lying about the extent of our reserves'

– Walter van de Vijver in an e-mail to Sir Philip Watts, November 9, 2003

The e-mails that revealed the cover-up: page 36

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WHAT'S DOWN THE BARREL FOR . . .

BID HOPES: analysts regard Shell as an unlikely takeover target, pointing out that any merger is likely to fall foul of US and European competition authorities.

OIL PRICES: 3.9 billion barrels sounds like a lot of oil and gas, but analysts insist its removal from the world's "booked reserves" is not enough to send the oil price soaring.

THE PLAYERS: yesterday's report will be of interest to the FSA, the US Justice Department and the SEC. Shell's former chairman and former head of exploration face an uncertain future.

GOVERNANCE: the non-executive directors on Shell's two governing boards are likely to come under criticism for their failure to protect investors.

Unravelling of the lies and cover-up

By Carl Mortished

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OIL SLICK OF DECEIT

'EP was in a far worse state in mid-2001 than was portrayed by my predecessor to management'

— Walter van de Vijver, March 22, 2004

'We've always believed — and I've always believed — that Shell was materially compliant with SEC guidelines'

— Sir Philip Watts, February 5, 2004

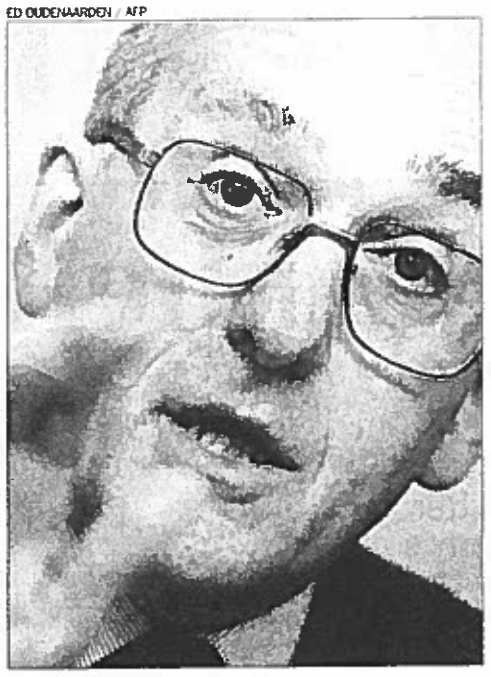
'This is absolute dynamite, not at all what I expected and needs to be destroyed'

Walter van de Vijver, Dec 2, 2003, after a warning that Shell was in danger of violating US securities law

'We are heading towards a watershed reputational disaster ... the problem was created in the 90s"

— undated, Walter van de Vijver in an e-mail to a colleague

ED OUDENAARDEN / AFP



Sir Philip Watts, left, and Walter van de Vijver deceived investors by ordering the destruction of documents on shortfalls in reserves

Third boss ousted as Shell admits 'we lied'

THE crisis at oil giant Shell deepened last night as it was revealed former bosses lied and systematically covered up shortfalls in the group's oil reserves. A third top director lost her job over the scandal.

Chief financial officer Judy Boynton was "stood aside" to make way for a "stronger and more robust" successor but is still expected to leave in June with a £1million payoff.

The news came as a damning report into the scandal showed ex-chairman Sir Philip Watts and former exploration chief Walter van de Vijver misled investors and board members over the extent of the reserves.

Investors are now expecting Watts and van de Vijver to face criminal charges in the United States after it was revealed that American regulators had asked Shell not to publish the full 463-page report by law firm Davis Polk & Wardwell. It is believed they do not want to prejudice a potential trial.

When the scandal emerged, more than £3billion was wiped off the company's stock market value.

The report revealed how van de Vijver repeatedly clashed with Watts over the "premature" and "aggressive" reserve bookings made when the chairman was exploration chief. The Dutchman then attempted to cover up the scandal when colleagues urged disclosure.

"I am becoming sick and tired about lying about the extent of our reserves issues," said van de Vijver in an e-mail to Watts dated November 9 2003, "and the downward revisions that need to be done because of far too aggressive/optimistic bookings."

Less than a month later van de Vijver's staff sent him a legal conclusion that not to disclose the shortfalls "without delay" would be against United States law.

"This is absolute dynamite, not at all what I expected and needs to be destroyed," was van de Vijver's response.

It was not until January this year that the company came clean, owning up to a 3.9billion barrel shortfall. The actual shortfall now stands at 4.35billion barrels following further reviews in more than 100 oil fields. Van de Vijver said Watts and he knew about

LIES: Sir Philip Watts, above, and Walter van de Vijver may be charged

By **Andrew Johnson**

reserve "issues" as early as 2001. "Exploration and production was in a far worse state in mid 2001 than ever was portrayed by my predecessor to senior management," he wrote to Davis Polk.

The lawyers' report said there were question marks over some reserves far earlier. In 1997, when Watts was exploration boss, Shell booked 500million barrels of oil in Australia as reserves, despite their "questionable" status. Davis Polk reported one member of Shell staff saying that they "had long stuck out like a sore thumb", but removing them from the reserves book was "too big to swallow".

Watts and van de Vijver appeared to handle the problems by hoping oil discoveries would cover up the previous misbookings.

They were abetted by a calamitous lack of controls in the oil group. It emerged the department responsible for double-checking reserves internally was a "part-time former Shell employee".

Boynton was criticised for not taking action until Watts and van de Vijver realised they had to bite the bullet and launch an investigation after overbooking in Nigeria and Oman came to light — an investigation called "Project Rockford".

The report said: "Ms Boynton took virtually no action, prior to the initiation of Project Rockford, to inquire independently into the underlying facts relating to the aggressive bookings."

One City expert described the report as "absolutely mind blowing" and revealed a total breakdown of internal controls. "It is just a catalogue of disasters for a company of Shell's standing." The company's non-executive chairman Lord Oxborough expressed "profound regrets and apologies" for the crisis. He said the company was now putting in place checks and controls to ensure that it would never happen again.

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'It's mind-blowing. It is just a catalogue of disasters for a company of their standing.'

Rise of the cheerleader

FORMER cheerleader Judy Boynton shook the world's oil companies when she took charge of the purse strings at Royal Dutch Shell.

With her brunette, perfectly-coiffured hair and manicured nails, she was one of the most powerful women in the industry after accepting £500,000 plus bonuses to run the company's multi-billion global finances.

It was unusual for a woman to breach male-dominated British boardrooms and when the 49-year-old became the first on the board last year, she was again at the centre of a storm among the old boys network.

The American is married to a Harvard-educated financial consultant, has no children, lives in upmarket Chelsea, works out several times a week, goes fly-fishing and enjoys hiking and riding. She was ranked Britain's 10th most powerful women in 2002.

HOLDING THE PURSE STRINGS: Boynton shook the old boys' network when she took control of Shell's billions

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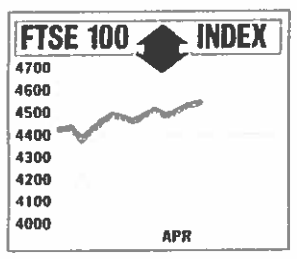
AT A GLANCE



STOCK MARKET			
FTSE 100	4546.2	▲	+8.9
FTSE 250	6286.1	▲	+27.7
FTSE All-Share	2264.9	▲	+5.0
Shares Traded			2771.2million

POPULAR SHARES ON THE RISE		
Aviva	553	+7
B A A	527	+5½
Barclays	492½	+3
Bradford & Bingley	287	+¾
Cable & Wireless	124	+¾
HBOS	736	+2
Intl Power	151½	+1¼
Lloyds TSB	421	+5½
Marks & Spencer	277½	+13
mmO2	101¾	+1¾
Nat Grid Trans	434¾	+½
Rolls-Royce Gp	229¼	+1¾
Scot & Sthn	700	+6
Tesco	260	+8¼
Vodafone Group	137¼	+2¾
POPULAR SHARES UNCHANGED		
Corus	41	
Legal & General	95¼	
POPULAR SHARES ON THE SLIDE		
Abbey National	435	-4
Alliance & Leicester	832	-4
BG Group	344½	-2½
British Airways	291¾	-1¾
BP	492	-5
BT Group	179¾	-1¾
Centrica	232¼	-2
GlaxoSmithKline	1157	-7
HSBC	816½	-1½
Shell Trans	389¾	-3

WORLD MARKETS			
WALL STREET	10437.9	▼	-14.1
TOKYO	11764.2	▼	-60.4
HONG KONG	12450.0	▼	-8.4
GERMANY	4025.1	▼	-8.9
FRANCE	3743.4	▼	-8.2

CURRENCIES			
Dollar	1.809	▲	+0.006
Yen	196.472	▲	+1.308
Euro	1.504	▲	+0.005
Dollar/Yen	108.590	▲	+0.3550
Dollar/Euro	1.2030	▼	-0.0001
£'s effective exch rate			105.5

COMMODITIES	
GOLD($)	401.50-402.00
SILVER(p)	397.93
BRENT CRUDE (Jun):	34.03
Base rate:	4.00%

OTHER INDICATORS	
Halifax mortgage rate:	6.00%
Retail Price Index:	+2.5%
House price inflation	+18.5%
Unemployment	882,200

LIVESTOCK

Cattle: (pence per live kg) Price 96.48 nc.
Sheep: (pence per kg) Price 140.64 nc.
Pigs: (pence per kg) Price 83.68 nc.
Source: FT Interactive Data

TOURIST'S POUND	
AUSTRALIA	2.31 dollars
CANADA	2.31 dollars
CYPRUS	0.84 pounds
DENMARK	10.71 kroner
EUROZONE	1.44 Euro
HONG KONG	13.38 dollars
JAPAN	188.30 yen
MALTA	0.61 liri
NEW ZEALAND	2.66 dollars
NORWAY	11.90 kroner
SOUTH AFRICA	11.10 rand
SWEDEN	13.20 kronor
SWITZERLAND	2.23 francs
THAILAND	64.66 baht
TURKEY	2337461 lira
UNITED STATES	1.72 dollars

Shell reserve crisis triggers shake-up

By **Andrew Johnson**

SCANDAL-HIT Shell announced a wide-ranging overhaul of its internal controls and a further cut in oil stocks in the wake of a damning report into the way it counts reserves.

The Anglo-Dutch oil giant is accelerating a review into its unwieldy management structure following revelations that previous internal checks were pitifully inadequate.

A total of 4.35 billion barrels of oil has been recategorised by the group as not meeting United States regulatory guidelines on reserves. Shell said 90 per cent of its oil fields had been investigated. It was confident no more shocks would emerge.

The moves are among a number being taken by the company to shore up its tattered credibility. They follow a report into the scandal commissioned by the group's audit committee and written by law firm Davis Polk & Wardwell. It highlighted a number of internal failings.

Chairman Sir Philip Watts and exploration boss Walter van de Vijver have been forced to quit over the scandal, which wiped £3 billion from the company's stock market value when it emerged in January.

A third director, finance chief Judy Boynton, lost her job yesterday. She has "stood aside" to let a stronger "more robust" candidate succeed her.

The review into corporate structure means Shell could abandon its controversial dual-listed structure by the annual meeting in June.

Investors have long been dismayed by Shell's unwieldy management structure, which has a Dutch board and an English board reporting to one main board, the Committee of Managing Directors.

Non-executive chairman Lord Oxborough said the company was also taking "prompt action" to implement the Davis Polk recommendations. He said: "This shows what can happen when an organisation loses focus on its true objectives."

Davis Polk found Shell staff did not know what regulations governed reserves booking and that there was only one man responsible for checking those bookings. Oxborough said bonuses for booking reserves had been removed in the light of Davis Polk evidence that the true extent of the crisis had been hidden from the managing directors and the group's audit committee.

The managing directors now sign off reserves each year themselves. Shell has established a team of dedicated reserves auditors which will report to the company's internal auditors. Their work will be checked by specialist teams of external auditors.

The frequency of audits is being increased. Shell staff are now being trained in regulatory reserve guidelines and will be held more responsible for the reserves they book.

Oxborough insisted the crisis was the result of human behaviour, not structural problems.

"The story is attributable to human failings, not structural deficiencies," he said. He stressed there was no evidence of "personal financial impropriety on behalf of our staff".

He stressed Watts's and van de Vijver's replacements, new chief executive Jeroen van der Veer and exploration boss Malcolm Brindred, had no responsibility for the disaster.

Van der Veer did see an early document highlighting problems with reserves back in February 2002. However, he said yesterday he did not realise the "severity and magnitude" of the problem.

No non-executive directors have yet resigned, despite the fact they appointed Watts.

NUMBERS GAME: Shell staff did not know the rules for booking the company's reserves

'The story is down to human failings, not structural ones'

'Memo doesn't tell full story'

THE former Shell exploration boss at the centre of the reserves-booking scandal defended himself last night against the findings made by a report into the crisis.

The report, by law firm Davis Polk & Wardwell, quoted Walter van de Vijver replying to a memo which said that the overbooking should be disclosed.

He is quoted as writing in an e-mail: "This is absolute dynamite, not at all what I expected and needs to be destroyed."

But lawyers for van de Vijver said the report excluded context and did not convey "its true meaning". The law firm Akin Gump Strauss Hauer & Feld said that van de Vijver had told the memo's writer, exploration and production finance boss Frank Coopman: "We are only at this stage flagging issues and creating options, not making a firm recommendation.

"You well know that I have not accepted the latest audit reports and need more answers before coming to a recommendation."

Akin Gump added: "Nothing was concealed or destroyed.

"Rather, the level of detailed information was improved as Mr van de Vijver immediately convened a meeting in his office the following morning and ensured work progressed at maximum pace."

Downgrade costs oil giant prized triple-A credit rating

THE latest reserves downgrade by Shell has cost the oil company its prized long-term AAA rating, the Standard & Poor's credit rating group said last night.

While the recategorisation is "relatively modest, it is nevertheless the third announced since January", S&P noted.

The lowering to AA+ status was also prompted by the release of the audit report on the company's past booking process, which "highlights areas of durably weak corporate governance", said S&P's credit analyst Emmanuel Dubois-Pelerin.

He added that despite Shell's conservative financial profile and downstream strengths, several factors made the AAA rating untenable. Shell had been one of a select few European companies to hold the top AAA rating and had done so for 14 years.

The company's short reserve life of 10.2 years as of the end of 2003 was between two and three years below its peers.

"A very weak 50 per cent to 60 per cent ratio of production replacement by proved reserves from 1999 to 2003, overall stagnant production through 2003-2006 and the abandonment of future production targets" all contributed to the downgrade.

Although the financial impact on historical figures was modest and there was no cash impact, said S&P, the quality of Shell's upstream exploration spending was confirmed to have been well below the agency's expectations. But Shell still enjoys "superior internal liquidity and access to global banks", according to S&P.

These credit ratings remain on CreditWatch with "negative implications", where they were placed last January and will be reassessed after Shell releases definitive results on its proven reserves as well as full accounts for 2003.