

Day Fifteen

Robert Sargent

Evidence in Chief

Mr Sargent was asked to read his conclusions to his proof of evidence:

The mitigation for the potential impact on groundwater and the Wellhead public water source is inadequate and will not provide the guaranteed total isolation of the highway drainage from the groundwater as stated in the Environmental Statement.

The potential impact on the groundwater and the Wellhead source, using the promoter's impact assessment methodology, is therefore not neutral but moderate adverse.

The flood risk assessment is inadequate and does not meet the requirements of Planning Policy Statement 25 "Development and Flooding".

Proper compensation for occupation of the flood plain is not provided on a "level for level" basis and therefore the occupation of the Bitham Brook flood plain by the Glenmore Link will increase flood risk.

Tag tables. Section on Water Environment. Comment on Pg25

-Qualitative comment at bottom of table says that the bypass will be outside of the flood plain and the well will provide higher volumes of water than at the present. This is incorrect and contradictory.

-Have seen no proposal for moving the abstraction well.

-Have seen no evidence for higher water volumes.

Have read Mr Sadler's and Mr Swift's proof and notes of their evidence. Brief comments.

-Swift was concerned with flood risk management and the question of the sequential test and the exception test, which are part of PPS25. Have not seen evidence that sequential test has been done. Part of the requirement is that site should be on previously developed land, which it is not. Mr Swift accepted these points.

-Provision of compensation storage. Issue is that compensation needs to be at the same level, have not seen anything in proposal that would achieve this.

Questions about whether this can be provided.

-Sadler: Monitoring of impacts on water supply will only be effective after the problem has occurred. Need to be monitoring for any leaks or compensation before it is too late. Question of liner and drainage. If there is leakage from spillage, then spillage will create head over liner and will have to flow over liner itself. Spillage will make its way into groundwater.

Aware that there has been an error in HGV flows. What possible impact might that have in assessment of risk?

-The amount of pollution that arises from road is calculated by Highway Agency, this scheme provides a mathematical way of deciding how much pollution is produced, which involves a calculation of the amount of HGVs. The risk of spillage higher with a greater number of HGV

What should now be done to correct assessment?

-Both should be re-calculated based on new figures

Cross Examination

You have not re-calculated?

-No

You have not been asked to do so?

-No

This matter was only brought to your attention today?

-Correct

You are an expert witness?

-Correct

Not part of WHA?

-No

PPS25 is not 'development and flooding'?

-Should be 'development and flood risk'

How important is view of the Environment Agency in relation to groundwater and flood risk?

-Have considerable interest

Aware of their position in relation to this scheme

-Yes

Aware of material they saw before reaching that view?

-Not precisely

Proof pg3. Have seen flood risk assessment stage 2?

-Yes

Does that document address the sequential test and exceptions test?

-Includes that.

Have you considered the use of conditions on this planning condition?

-Do not need to

Is groundwater capable of resolution?

-Question of risk

-Road could not be developed without risk to groundwater. Becomes question of how much risk can be taken.

-Believe that the design is not the best that could be done.

-Should not rely on liner on being totally impermeable

-Believe that groundwater issue could be resolved if a more robust design was presented and had different monitoring programme.

Nowhere do you suggest that need to go outside CPO lands?

-No

Can be conditioned then?

-Could be conditioned with requirement for different design and different monitoring programme.

Condition 17. No development shall commence before detailed plan approved by planning authority. That condition will do?

-Refers to construction, not day-to-day running of road

-Cannot comment on something that has not yet been written.

Flood risk. Could condition be imposed to deal with risk?

-Options limited. Promoter's task to identify how could be done.

In re-examination of Swift, identified specific area of land within CPO.

-Have not seen map

What have you seen of the scheme?

-Have seen area for the road, and areas that have been identified for compensatory flood storage.

-At level of river, not embankment

Compensation area sufficient for that purpose?

-Not from diagrams

Have you carried out assessment?

-Have looked at map, have seen where areas are, have seen at what level they are.

In terms of flood risk, you state structures have not been tested against any greater flood level. Have seen flood report, been tested against 15-20%.

-Not aware

What are criticisms based on?

-Flood risk assessment 2007

Have seen document from 2005?

-Yes

Betts appendices. Fig 8.6. Area from centre of diagram to top of road. Wrong location?

-Difficult to say from diagram

-Would need to see calculations

Suggests that you were not aware of the precise location of compensation area. Is this the compensation area you were aware of?

-No

In terms of whatever assessment has been carried out, you are not aware of details?

-Never seen details

Not in a position to say that this proposal cannot do the job it is intended to do?

-Have not seen a calculated figure

Aware of sensitivity tests to assess extent of flood risk?

-Yes

ES Appendix H. Flood risk assessment, stage 2. When did you see this document?

-Earlier this year, cannot be precise

When were you instructed on behalf of WHA?

-Cannot recall precisely, probably February

Pg10. Para 2.6. Sensitivity tests. What is the purpose of sensitivity test?

-To find out what various errors would have on impact

What is the importance of the figure of 20%

-Figure that is often used for climate change to update flows up to 2080

Where you say that no greater has been tested, not entirely correct is it?

-That is not 100 year period of flow.

-Sensitivity testing is 20% variations around figure that is being used, point is that should also have 20% around that increased value.

Sensitivity test is +20 on top of 100 year event. Stated that haven't done 100 year test. Not right?

-Is right.

-20% is sensitivity test on 100 year flow. In terms of greater flows, would normally do a 1,000 year flow.

-Point that have only used a 100 year test.

Any guidance stating that 1,000 year test should take place?

-Appears in PPS25

Any requirement?

-Not strictly a requirement.

Groundwater. Landscape and visual impact, Fig 9.2. Cross Section E. Liner shown below level of road. The road through the location running on gradient.

Uphill or downhill?

-Slopes to the north.

What does gradient do for stilled liquids?

-Liquids would travel down gradient.

Which drainage were you talking about?

-My belief that there will be a drainage layer which is above the impermeable layer.

Are aware that this is not the road drainage layer?

-Yes, this is an extra layer designed to pick up spillage.

No, the road itself will be drained, perhaps through ditches. That is first line of defence. Do not mention in evidence?

-Did not believe that was part of protection, would not normally be expected to be sufficiently robust. Not guaranteed to be leak proof for indefinite period.

Familiar with how one would cross a river with a new road?

-With a bridge

Do you allow the drainage of the road to run straight into river?

-Would normally pick up through drainage system

Drainage system could be designed to achieve same result?

-Must bear in mind that this drainage system is entirely underground, therefore leakage not obvious. Would be very serious if did leak.

Crossing a river on a bridge, a system can drain away water. Leakage visible and could be picked up. Let us assume we are dealing with part of the scheme that does not go through water protection zone, would still have drainage system?

-Agreed

Through the WPZ, there will be the same system. That is the first line of defence.

-Not normally designed to protect from spillage.

In addition to that, an impermeable layer is intended as a second line of defence.

-Aware of that

That is going to minimise the risk?

-Goes some way towards doing that

Do not see recognition of that in evidence.

-Did not see normal drainage system as a line of defence for groundwater.

This groundwater protection zone does not just exist at location that the road will cross it.

-No

It is immediately under existing A350. What protection measures are in place there?

-Probably very little

Should we not take that into account?

-Doesn't mean to say we should not protect new road.

-Cannot do anything about existing risk

-Now considering new road with traffic at higher speeds.

Have you been informed of the tests that Dr Chambers described as being carried out to ensure that remained impermeable?

-No

Been informed of the conversations he has had with the manufacturers of the material?

-No

How long has this material been in existence?

-Around 30 years

Has been used successfully?

-Developed originally for landfill.

-Research shows cannot rely on there not being any leaks.

Build up of water pressure.

-More build up of liquid you have, the greater the flow through leak.

Reduce amount of liquid that is going to get through.

-If works successfully

Build up of head on layer not the same way as in landfill

-If works successfully

Your evidence in terms of groundwater effect is dependent on some failure of system?

-Correct

UPRAWW

Have been looking at sequential test and exception test. Note that in PPS25 it suggests that aim to steer new developments into Flood Zone 1. Appropriate source is Environment Agency's flood maps.

-Certainly sources of information

Flood plain map of greater area of Westbury. You have only reviewed E route. Facilities at Yarnbrook. Desire to provide relief for Yarnbrook. Considerable Zone 3 area to N of Yarnbrook. In terms of flood risk, if wanted to avoid Yarnbrook, which areas would be most appropriate?

-Cannot say immediately

-Looking at map there is a section of Zone 2 to SW of Yarnbrook.

In principle, would seek to avoid Zone 3 to the N. Areas to S and E least problematic?

-According to this map

WWTE. Comment on idea to extend trading estate to the west.

-There is a Zone there which it is advisable to avoid.

Zone 3 passing the Ham and at railway track crossing. Comment on issues of crossing there as opposed to Glenmore Link.

-General point would be to avoid Zone 3. If did build there would need to provide compensatory storage.

To the West there is an extensive area of Zone 3 which you would hope to avoid?

-Agreed

To the extreme W there is a Zone 3 crossing the A36. Again, would avoid exacerbating that?

-Agreed

- Map only a starting point
- Might be issues with accuracy

Re-examination

ES Part A, Appendix E, last page. Comparison tables for alternative options.
Assessment of two routes?

- Moderate negative for both

Asked about position of Environment Agency. Stated they hadn't required 1,000 year flood risk assessment. Your understanding that there has been no 1,000 year test?

- Seen no evidence of it.

Conditions. Stated that would need requirement for different design and monitoring. If something is fundamentally wrong with design, could this be dealt with in conditions?

- Not in this case in my opinion

If a different design were submitted that would need to be submitted to separate assessment?

- Agreed

You were taken to Mrs Betts landscape appendices in terms of compensation. Had seen before?

- No

Would you expect to find it in landscape appendices?

- No

Is it in Appendix H of the ES?

- Haven't seen it there

What would be the effect of a blockage of the first line of defence?

- Would expect the water to pack up or avoid the system and go into the ground.
- If things pack up, will find the easiest route out and soak into the ground.

Surmise that if everything works well then all is well. Commented that systems not designed that all does work well.

- System should have fail safe mechanism. First line of defence not 100% effective. Other line of defence – liner. Might not be foolproof. If there was a problem with drainage system, it would not be visible and would not be detected immediately.

- Cannot rely on everything working.

Inspector's Questions

Mr Sargent stated that if there was a spillage from the existing A350, the spillage would flow in the direction of the abstraction point.

Mr Sargent maintained that the Wellhead source is a regionally important water source.