

Submissions from Stakeholder review on environmental standards and conditions April – June 2012

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2	Chemical Regulation Directorate	<p>Not in all cases. For substances regulated under other areas of legislation, specifically pesticides and biocides, the development of EQSs should be aligned with the review processes for the same substances under these regulations, so that the same data sets can be updated, valuated and used in similar ways to derive similar endpoints for water protection. Otherwise we potentially end up with a mis-match between two regulatory systems aiming to achieve similar environmental goals. This gives rise to uncertainty (particularly amongst pesticide manufacturers and users). There is a likelihood that industry will face compliance costs if restrictions are imposed on the way important products (such as those detailed in this consultation) are used and this could potentially impact on products and services supplied to consumers/society.</p> <p>The Chemicals Regulation Directorate of HSE previously sent in comments to the EA on draft EQS proposals for carbendazim, chlorothalonil, methiocarb and pendimethalin back in 2009. These pointed out a number of discrepancies in how the proposed EQS were derived compared with how 'Regulatory Acceptable Concentrations' (RAC) used to register pesticide products were determined. These comments do not appear to have been considered. For chlorothalonil and pendimethalin in particular the CRD is currently registering products based on RAC and predicted concentrations in surface water for approved use that may be in breach of proposed statutory EQS. The policy and legal implications of this must be discussed at a relevant level.</p>			
3	Agricultural industries association	<p>This response is on behalf of the AIC Crop Protection and Agronomy sector, which represents the interests of circa 700 agronomists who advise farmers on all aspects on the responsible use of crop protection products. AIC has concerns about the proposed standards for specific pollutants (page 19 and 20 of the consultation document). In particular; carbendazim (short term 95 percentile for freshwater - decreased by 30%), chlorothalonil (long term annual mean for freshwater - decreased by 65%) and pendimethalin (long term annual mean decreased by 93.3% and short term 95 percentile decreased by 90.3%). AIC does not have the expertise to query the derivation of the figures or recommend alternative figures. However, we are concerned how the huge decreases in Environmental Quality Standards (EQSs) may impact on the use of these actives in agriculture, with knock-on consequences that may impact on agronomists and farmers ability to control diseases and weeds in a range of crops, which in turn will ultimately impact farm profitability. The consultation goes on to review the implications of the proposed standards for surface waters, by indicating the numbers of monitored sites that 'would not' or 'might not' meet the standards. Although it is predicted that no sites will 'not meet' or 'might not meet' the proposed standards for carbendazim, chlorothalonil or pendimethalin, we are concerned that this is based on a very low number of site assessments and / or very limited data. Should sampling be extended then the number of sites failing could be somewhat greater, again with knock-on consequences. Whilst we appreciate that cost effectiveness and disproportionate costs are taken into consideration when meeting the WFDs objectives, we feel that being aware of the consequences of setting lower standards at an early stage in the process could avoid much unnecessary resource outlay in assessing the impacts of the consequences at a later date.</p> <p>We also have concerns about limits of quantification (LOQs) being used as the standards for hazardous substances in groundwater, to assess if measures to meet objectives are being met (page 45). Not least because as analytical techniques continue to develop, LOQs will continue to decrease, which will lead to tighter standards being applied for hazardous substances, without any scientific rationale, other than it can be detected at these lower levels. We suggest that standards for hazardous substances in groundwater should be based on a more scientific approach for example, on their impact on the environment or human health. With regard to the approach for non-hazardous</p>			

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		<p>pollutants, we are also concerned about the proposal to apply drinking water standards to groundwater, where groundwater is to be protected for uses other than human consumption (page 48). EU standards for drinking water at tap (0.1 micrograms/ litre) are based on a surrogate zero and have no scientific basis, as they are not related to the chemical properties of the active. Therefore AIC favours option (b) so that standards are specified by the World Health Organisation as we believe these have a more scientific basis.</p>			
4	International Manganese Institute	<p>The derivation method is clear and we are supportive of this approach. It is good to see that the bioavailability concept has been taken into consideration as this represent the most appropriate metric by which to assess potential manganese risks in freshwaters.</p>	<p>The use of the comprehensive freshwater ecotoxicity database and the BLMs in the methods of derivation and method of implementation of the Manganese EQS makes use of the best information currently available. We strongly advocate the use of these data as they represent the most scientifically justifiable way of assessing potential manganese risks in our opinion.</p>	<p>The approach is scientifically sound. However, we think that in relation to the sections in the report on 'Implications of the proposed standards for surface waters' that the number of sites assessed is somewhat disappointing. The reasons for this have been given, but the level of certainty in relation to the broad implications is relatively low. A useful addition to this section might be an outline of how assessment might be undertaken in a more data rich and WFD compliant situation, especially where bioavailability is being considered.</p>	
5	Non-Ferrous Alliance	<p><a href="#">Response attached</a></p>			
6	Tony Marsland	<p>The clarity of the Groundwater section could be substantially improved – see comments below. The introduction of threshold values for wetlands meets the requirements of the Water Framework Directive (WFD) and Groundwater Daughter Directive (GWDD). The formal introduction of prevent values recognises existing practice but the method of use needs a little more clarification. The groundwater standards or the limit objective for groundwater seem inappropriate in that they do not fully meet the requirements of the WFD and GWDD. Without further clarification they could be taken to be inconsistent with the UK's previous negotiating position on the latter directive. See further comments below.</p> <p>Chapter 1 This has been written almost entirely from a surface water perspective and some points are not applicable to groundwater, though this is not made clear.</p>			

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		<p>Chapter 2 - first paragraph - it is misleading to imply that the concept of specific pollutants in the WFD applies to all waters - it does not apply to groundwater. For clarity, it would be advisable to cross reference substance names with CAS numbers, at least once for all synthetic substances.</p> <p>Groundwater</p> <p>Page 38, 2nd para: indicates that modelled estimates can be used to indicate a breach of a threshold value. The GWDD indicates that whilst such estimation techniques can be used in the investigation that follows a breach of a TV, the initial breach that triggers an investigation must be based on data from a monitoring point.</p> <p>Page 38, last para : for good status are (i), (ii) and (iii) all “or” options?</p> <p>Page 40, Threshold Values for assessing risks to uses of groundwater. In the first paragraph after the bullets it is stated that the second purpose “is designed.....for human consumption”. This implies only potable use, which is inaccurate and inconsistent with the approach identified in the UKTAG paper that supported the first cycle of classification for groundwater, where it was made clear that all human uses were to be protected and that “relevant use based standards” were to be employed. Use for human drinking water may be the most common reason we protect the groundwater resource but it is not the only use (e.g. industrial, irrigation) and drinking water standards may not be appropriate (not protective enough or over-protective) for these other uses.</p> <p>Page 42: first para: the number of poor status bodies may not change substantially as consequence of the change in nitrate TV but could change for other reasons, such as the increase in data from water companies and generally improved data on water quality trends. Both in this and the following paragraph it is unclear whether the comments only refer to the change in TV value for nitrate.</p> <p>Pages 42 last para/43 first 3 paras: See comment above on page 40. The restriction of consideration of any standards other than drinking water is inappropriate and unnecessary. If the words “ allowed in drinking water” were replaced by “of the most relevant use-related standard (for example, drinking water)” this would be more generic and consistent with the objectives of the WFD and GWDD.</p> <p>The first bullet point on page 43 seems to imply that a groundwater body that would otherwise meet the criteria for poor status could be deemed good if only one sample does not exceed the drinking water standard – is this correct? It does not seem to be consistent with the explanation of the implications under “Changes to further investigation criteria” at the bottom of page 43.</p> <p>Page 45 – Approach for hazardous substances: the text does not explicitly explain how the standards will be used, in that as I understand it, if you have sample or predicted concentrations below these values then the prevent objective has been met without further assessment, whereas if sample concentrations are above these values further assessment is required (which in England &amp; Wales involves the procedure set out in the EPR Groundwater Activities guidance).</p>			

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		<p>Table 12: for clarity, the CAS numbers for these substances should be added, which are available via the JAGDAG list.</p> <p>Page 48: Recommended approach for non-hazardous pollutants.                      2nd para : The first sentence seem to imply that only future uses are being looked at, which contradicts the first paragraph and presumably is inaccurate as existing uses must also be protected.</p> <p>3rd para – It is technically incorrect to say that other uses are protected by applying standards derived to protect water used for human consumption (drinking water standards – DWS, see previous comment on page 40) and an unnecessary restriction. DWS are derived to protect water in the distribution system or at consumers taps and do not necessarily protect all the receptors noted in the definition of pollution.</p> <p>If this approach is followed it needs to be much clearer that DWS are not being applied to the uses noted in para 2 (surface waters and wetlands) and also that DWS derived solely for protective purposes within distribution systems (and perhaps these need to be noted) should not be used. As currently drafted it could be read as though you are proposing common standards for groundwater, which is contrary to the UK policy position on the GWDD agreed at the time with Ministers and Parliamentary Scrutiny Committees. The text on page 49 in particular loses sight of the restriction to drinking water and other uses and some text (e.g. bullet points) appears to be of a more general nature and appears to be out of sequence.</p> <p>It is inaccurate to say in the Implications section that, as currently drafted, this is the same approach to that used under the old Groundwater Directive.</p> <p>Overall this section on non-hazardous pollutants is confusing, with text that would be better placed in the technical guidance on setting regulatory standards rather than here. The only new standards that appear to be proposed here are the use of wetland threshold values for limit purposes and the unnecessary proposal to use DWS for “other uses”. On this basis most of this section could be omitted from this report.</p>			
7	Anonymous				

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8	The Coal Authority	<p>Changes to the iron standard.</p> <p>There appears to be both advantages and disadvantages to this proposed change in iron concentration. The main advantage is that in catchments with coal mine water discharges, the total iron standard will most likely be a more sensitive indicator of pollution compared with the current dissolved iron standard. The length of impact measured with the new total iron standard might be greater when compared to the current dissolved iron standard.</p> <p>[Conversely, the new standard may still not reflect the full length of ecological impact due to bed smothering, see comment below]. This difference in length of impact may be significant since, for iron, oxidation and precipitation is generally much more rapid than the settlement of suspended iron “ochre”, especially in turbulent rivers. Increased quantitative distances of failures will translate directly into proportionate increases in estimated benefits assessed when considering the cost-benefit ratio of planned mine water schemes. The new standard may therefore, better reflect the aesthetic and ecological impacts to affected rivers when compared to the current one. However, this is not certain. We would be interested to hear more of the details on UKTAG’s evidence and decision, which have resulted in this proposed change. If the new standard works it may be possible to refine the present qualitative prioritisation system for coal mine waters using more rigorous quantitative chemical standards, which has not been possible with the present dissolved iron standard. A more robust ranking system is significantly advantageous at times of reduced funding for environmental remediation.</p> <p>There are also several disadvantages resulting from the proposed new iron standard. The main disadvantage for mine water schemes is that the proposed standard will necessitate treatment to a better design standard than the 1 mg/l total iron which is typically used as a design target for treated effluent. Better treatment will inevitably cost more, and this will adversely affect cost-benefit ratios for proposed remediation schemes.</p> <p>A significant impact from iron is coating of bed sediments with ochre precipitates. It is possible that the bed can be impacted yet the water column itself be visibly clear, and thus free of suspended iron, which if present gives the water a yellow / orange colour, i.e. turbidity. In such cases the new total iron standard would still not detect the principal pressure to ecology – that is the new standard may not correlate well with the extent of bed smothering by ochre.</p> <p>There is a distinct possibility that the new standard will result in failures due to other pressures, both anthropogenic and natural. Iron is one of the most abundant elements on earth (typically present at wt % concentrations for many mudstones for example); many rocks and consequently soils are rich in iron, which is evident in some of the G-BASE survey (Geochemical Baseline Survey of the Environment) currently being undertaken for several elements (including iron) by the BGS for soils, stream sediments and stream waters in the UK. Mobilisation of sediments, for example as diffuse agricultural runoff, is already recognised as a significant pressure. If these sediments are iron-rich, then failures may arise.</p> <p>New bio-available manganese standard                      We do not know fully the implications of this. However, if the end result is a requirement for improved manganese removal in coal mine water treatment schemes, then this will further increase costs, adversely affecting cost-benefit ratios such that some schemes are not deemed to be cost effective; manganese removal is technically difficult. Furthermore, natural failures of the standard may also occur – since like iron,</p>			

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		<p>manganese is also one of the most abundant elements in the crust (typically present in hundreds of mg/kg concentration in typical mudstones) and therefore relatively common in some areas of the UK. In contrast to iron however, manganese is highly soluble in the pH range typical of most rivers.</p> <p>General Comments We would like to ask why zinc is the only standard where it has been proposed to take into account the background concentrations? Surely this approach would also be sensible for at least iron and manganese as well, as these two elements are much more abundant compared to zinc.</p> <p>Although we appreciate that there is always scope to improve environmental standards, we are concerned that some of these revised standards may result in un-achievable targets, which cannot be met as a consequence of the local geogenic conditions. Also, we believe that some caution must be taken where the EQS concentrations are becoming close to the detection limits of the instruments used to determine some of these elemental concentrations. By using standards that fall so close to these detection limits, the level of confidence that the data can be sufficiently distinguished from either background or blank samples becomes increasingly low, which could result in greater uncertainty in the reliability of the data. This is a scenario which we believe should be avoided if at all possible in order to maintain the credibility and enforceability of the standards.</p>			
9	The Angling Federation	<a href="#">Response attached</a>			
10	Anglian Water	<a href="#">Response attached</a>			
11	ABP	<p>We note that there is a discrepancy between the EQS for zinc in TraC waters set out in the Annex D data sheet, compared to Table 1.18 of the document 'Proposals for Further Environmental Quality Standards for Specific Pollutants'. We presume Annex D is in error, as the information in Table</p>	<p>The consultation document identifies alternative and imprecise ways of calculating background concentrations for zinc in TraC waters. Application of the different methods and interpretation of the approaches will lead to widely differing estimates of background values. The proposals do not provide a sound basis for uniquely determining an appropriate local EQS nor, therefore, for assessing water body status or identifying requirements for measures. This needs to be clarified.</p>	<p>It is unhelpful that the environment agencies do not have the data to evaluate the potential consequences of the new standards for copper and zinc on TraC water body status. This makes it impossible for stakeholders to evaluate the implications of the standards for their activities and operations. We trust this deficiency will be remedied for the Impact Assessment which will need to accompany proposals for amendment of the relevant Regulations.</p>	

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		1.18 is consistent with the main consultation document. We would appreciate confirmation on this point			
12	Anonymous		Not to be published on website		
13	NI FW task force	<a href="#">Response attached</a>			
14	Royal Yachting Association	<p>Copper - Use of copper antifouling (basically by recreational boats that are kept moored in the water) inevitably releases some bioavailable copper. However the RYA are pleased to note that UKTAG do not list antifouling on recreational boats as either a major use or a likely source of copper in surface waters (Table 1, page 14). It is our opinion that this is a true reflection of the situation in UK waters and are supportive of UKTAG's approach to tackling the major sources as a matter of priority. Antifouling is necessary on recreational boats to discourage the spread of NNIS between water bodies. This is an increasingly important element of both the WFD and the developing MSFD.</p> <p>Although work is ongoing, copper is currently the least damaging antifouling available (zinc appears to be more damaging), so alternatives are technically challenging at present. The RYA through its environmental initiative The Green Blue offers advice on best practice in use of antifouling to minimise the impact on water bodies' and RYA encourages recreational boaters to follow best practice</p> <p>NNIS - The RYA has been and continues to be heavily involved in work to manage and minimise the spread of NNIS around GB. As such we have no objections to UKTAG's proposals to amend the listings for alien species.</p> <p>As well as being involved in developing Defra's 'Check, Clean, Dry' campaign, the RYA and The Green Blue have promoted the campaign alongside its existing best practice advice on avoiding spreading NNIS. It should be noted however that some confusion over the implications of the hosepipe ban may have caused problems for boaters in following this advice.</p> <p>The RYA are supportive of proposals under the MSFD for further evidence gathering on this topic. It is our view that there needs to be more research on the ways different NNIS are spread between water bodies, and their relative importance. At present the evidence is inadequate, and there is a risk of measures being proposed which are not justified, not cost-effective, or both.</p>			
15	Wessex Water	Yes, it is largely clear about the proposed changes. It would more helpful to have the status of each standard stated with the table and to provide the river types relevant to reduce the time	The standards presented largely provide means of assessing what the cause of failure of GES may be due to or assist in designing abstractions or discharges which should meet it. The ecological measures are key to determining GES. There is still considerable uncertainty in the ecological relationships with many of the standards set although the recommendations make use of the more recent information available.	In the absence of truly reference conditions in England and the combination of unnatural factors that apply in most waterbodies, it is difficult to assess whether the	<a href="#">Response attached</a> (more detail)

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		taken to assess potential impacts.		standards are appropriate both independently and in combination. It would be unfeasible to take into account all new work so a review programme would be needed.	
16	Shell Global Solutions	<p>With specific regard to the section on land contamination we believe that the approach presented is inconsistent with both European Commission guidance (CIS Guide 17 on 'prevent and limit'), DEFRA Statutory Guidance and the recent Environment Agency consultation (GP3 Part 5), all of which present a more flexible and pragmatic interpretation of the WFD requirements relating to 'prevent and limit' as applied to land contamination issues. We consider the carefully selected wording in both EC and DEFRA guidance should be replicated in this document.</p> <p>With specific regard to MRVs in the land contamination section, the document fails to mention the 2008 revised MRVs issued by the Environment Agency. Interpretation of 'prevent input' We are greatly concerned at the proposed text in the UK TAG guidance regarding management of land contamination under the WFD/GWD 'prevent and limit' requirements, which appears to ignore carefully crafted guidance from both the European Commission and the UK government. Significant efforts were made by the European Commission Common Implementation Strategy (CIS) team to provide guidance that is both reasonable and effective in its environmental protection goals. Section 4.2.2 of CIS Guide 17, relating to 'discharges from historically contaminated sites' states that:</p> <p>"Site clean-up should be directed towards preventing any hazardous substances from entering groundwater (POCs 0 &amp; 1) unless it can be demonstrated by risk assessment and cost benefit analysis that this is infeasible, or one of the exemptions described in article 6(3)(a-f) applies. Where pollution of groundwater has already occurred, the need for and amount of remediation for non-hazardous substances will be determined by the receptors that could be, or are being harmed. The primary aim of the remediation strategy will be to prevent pollution from occurring or reduce the risk of further pollution by the expansion of the plume (Article 5.5). This should be assessed at POCs 2 and 3. Once the appropriate remediation has been undertaken, this will in many cases result in a stable endpoint where there are no further inputs to groundwater.</p> <p>A plume of contamination may still remain however, as it is often too costly or not technically feasible to completely clean up groundwater back to pristine conditions. Under these circumstances, it would not be reasonable to expect Member States to undertake further measures for clean-up of all pollution, and this is allowed for under the exemptions to prevent or limit in Article 6 (3) of the GWD (see section 5.3). This action will require justification to the satisfaction of competent authorities. Additional trend assessment of the remaining plume should be carried out.</p>			

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		<p>New activities planned on the site of historical contamination (e.g. a new oil storage facility on soil contaminated in the past with oil spills from leaking pipes and leaking industrial facilities) should be designed and maintained in such a way that no additional contamination occurs, taking into account all requirements of prevent and limit in the Directive. Any new permitted input should not impede any future improvement of groundwater quality.”</p> <p>This balanced approach is reiterated in DEFRA’s guidance on Environmental Permitting for Groundwater Activities (December 2010), where it is stated (sections 4.16 – 4.18) that ‘prevent’ means the taking of all ‘necessary and reasonable measures to avoid the entry of hazardous substances into groundwater’ (section 4.16), and that the test for such entry can involve no ‘discernible concentrations of hazardous substances in the groundwater down-gradient of the discharge zone” (section 4.18).</p> <p>In contrast, the UK TAG guidance takes a very rigid approach to interpretation of ‘prevent, which is inconsistent with both the European Commission’s and DEFRA’s stated advice, and is unworkable in practice.</p> <p>Furthermore DEFRA (2010) states that ‘the regulations do not make significant changes to the way land contamination is regulated’, while UK TAG advises (p46) that “additional remediation may be needed in some case...”. The implications of the UKTAG text appears to be at odds with the recent revisions to the Part 2A Statutory Guidance (in England), and begs the question how does UK TAG expect the additional requirements for remediation to be enforced?</p> <p>2. Minimum Reporting Values UK TAG propose MRVs based on those set out in the Environment Agency’s hydrogeological risk assessment on landfill (2003). It should be noted that the Agency has subsequently issued revised MRVs for a sub-set of those compounds (EA, 2008), which the UK TAG guidance fails to reference or take into account. 2008 MRVs available here: <a href="http://www.environment-agency.gov.uk/static/documents/Business/mrv_factsheet_v1_2031927.pdf">http://www.environment-agency.gov.uk/static/documents/Business/mrv_factsheet_v1_2031927.pdf</a></p> <p>3. Concentrations so small as to obviate any present or future danger Both the 1980 Groundwater Directive and the 2006 GW Directive include exemptions for discharges that are ‘so small as to obviate any present or future danger of deterioration in the quality of the receiving groundwater’.</p> <p>DETR’s Statutory Guidance for the Groundwater Regulations (Para 12, DETR, 2001) provided advice on this matter that such concentrations ‘are likely to be very small indeed, and likely to be similarly stringent to drinking water standards’. The Environment Agency (Appendix 12, Hydro RA for landfill, 2003) went on to describe how drinking water standards should be used to screen discharges that do not fall within scope of the GW Regulation 1998. That is to say if the concentration of a List I (/ Hazardous) substance in leachate was below the DWS then it did require authorisation under the GW Regulations.</p> <p>MRVs were first introduced in the EA’s 2003 guidance on hydrogeological risk assessment for landfill. The purpose of MRVs in that guidance</p>			

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		<p>was to determine, for those discharges that failed the test above (i.e. where leachate concentrations exceeded DWS), whether the effects of soil and unsaturated zone attenuation processes were sufficient to prevent discernible entry of the List I substance to groundwater. The MRVs were derived for theoretical modelling purposes (e.g., to compare with the output from a LandSim simulation, for example), not as actual groundwater standards. This distinction is maintained in CIS17 (see box on page 18, CIS17), where 'Compliance Values' are defined as the relevant use-based standards, not as arbitrary analytical method-defined MRVs.</p> <p>The TAG guidance states that MRVs apply as groundwater standards, which is not the purpose for which they were developed. Notwithstanding this important difference, TAG also state that they should be compared with water quality immediately above the water table, but DEFRA (2010) states a series of possible compliance scenarios (section 4.18), which include in-groundwater measurement immediately down-gradient of the discharge zone. Clearly the draft UKTAG guidance is inconsistent with, and more onerous than, both the DEFRA and European Commission guidance on this matter.</p> <p>4. Duration of public consultation We note that the duration of the public consultation - around one month - is shorter than the 12 week minimum that government recommend as good practice (<a href="http://www.bis.gov.uk/files/file47158.pdf">http://www.bis.gov.uk/files/file47158.pdf</a>). Given the importance of this topic to ensure effective environmental protection, legislative compliance, and with potentially significant impact on businesses, we are surprised at the short duration of the consultation period, and request a longer period for future public consultations.</p>			
17	Rio Tinto on behalf of Iron Platform	<p>The report identifies that due to complexities in the interpretation of much of the historical ecotoxicity data for iron an alternative approach based on direct observations under field conditions has been applied. In general we support the approach taken, but have some concerns about certain aspects of the derived standard. Our concern is that a single value for the</p>	<p>We support the proposal to apply the standard as a total iron concentration, given the very low solubility of iron under the majority of typical natural surface water conditions. The extensive laboratory toxicity testing we have performed supports the conclusion that total iron is a better indicator of toxicity than dissolved iron. The use of field evidence to derive the proposed standard may provide a more direct link between chemical stressors and ecological quality than standards which are derived entirely from laboratory data. We support the use of this approach in cases where the derived standard is adequately protective of sensitive ecosystems.</p>	<p>Recent studies performed on behalf of the Iron Industry on the toxicity of iron to freshwater organisms (fish, Daphnia, and algae) have indicated that there is an important effect of local water chemistry on the potential for iron to cause adverse effects on freshwater organisms. These studies suggest that whilst invertebrates may be the most sensitive organisms under the majority of conditions, they may not be the most sensitive under all conditions. In particular</p>	<p>We note that significant levels of compliance failures are expected for the proposed quality standard for iron due to the fact that many surface water concentrations of iron exceeds the proposed standard. Given the observations of co-variation between dissolved iron concentrations and DOC in UK surface waters (Peters et al. 2011 BECT 86:591) it is highly likely that some areas with high iron exposures may not pose a risk to aquatic ecosystems.</p>

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		EQS is over protective in many waters and under protective for sensitive waters. We have prepared a detailed analysis in support of this view and will share it with the Environment Agency		these studies indicate that the most sensitive conditions for iron are likely to exist where pH, hardness (or calcium concentrations), and dissolved organic carbon (DOC) concentrations are all low. Under these conditions fish may be more sensitive than invertebrates. Consideration of this recent information in the derivation of the EQS proposal would be likely to improve the ecological relevance of the proposed standard.	<p>Conversely, it is possible that fish communities in some sensitive areas may not be adequately protected by the current proposal.</p> <p>A preliminary assessment of a selection of sites included in the indicative compliance assessment for iron suggests that if the effect of local water chemistry on the adverse effects of iron to aquatic organisms were taken into account there would be relatively few, if any, compliance failures (based on the predicted EC10 value for the most sensitive trophic level). A summary report of this analysis will be provided to UKTAG by the Iron Industry. Conversely, a preliminary assessment of several locations where the sensitivity of aquatic organisms to iron is likely to be maximised suggests that the proposed EQS for iron of 0.73 mg l-1 may not be adequately protective of fish communities where pH, DOC, and calcium</p>

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					<p>concentrations are all low (the most sensitive conditions for iron). These combinations of conditions are likely to occur in areas such as the Lake District, Snowdonia, and Cornwall, although they may not necessarily coincide with elevated iron exposures. We will provide the details to the Agency in support of our conclusions. Such details are based upon extensive laboratory testing of fish, daphnia and algae. We would welcome further discussions with the Agency.</p>
18	Scottish Water	<a href="#">Response attached</a>			
19	European Copper Institute	<a href="#">Response attached</a> <a href="#">Marine EQS</a> <a href="#">FW essentiality and homeostasis</a> <a href="#">FW Foregs stream water</a> <a href="#">PNEC</a>			
20	International zinc association	<a href="#">Response Attached</a>			

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21	Severn Trent Water	<p>We have specific concerns over the inclusion of iron as a specific pollutant: UKWIR recently commissioned a thorough review of the impacts of iron dosing in the UK and possible implications of a change in EQS UKWIR 11/WW/20/4 - A review of the setting of iron limits for Wastewater Treatment Works Effluents, 2011). That report concluded:</p> <ol style="list-style-type: none"> <li>1.The UK seems out of step with most of Europe (and North America) in considering iron as a specific pollutant under the WFD.</li> <li>2. From the available data, collected and collated from across England, as well as that modelled using SIMCAT, there appears to be little evidence of significant increases in total or dissolved iron concentrations downstream of wastewater treatment works because of dosing iron for phosphorus reduction.</li> <li>3.The water quality data is supported by the fact that there appears to be no significant ecological changes downstream of WwTW's dosing iron; in many cases the number of sensitive ecological species present actually increases. Furthermore, estimated particulate concentrations in WwTW effluents dosing iron display a similar content (ca. 6%) of iron to that in background stream sediments, which suggests that there should be no significant accumulation of particulate iron in sediments downstream of WwTW.</li> </ol> <p>b) Uses the best information currently available? There appears to be considerable uncertainty over the effect of iron on the aquatic environment, and therefore the justification for a tighter EQS, is unclear. The consultation document states "In the case of iron, conventional laboratory data on toxicity are difficult to interpret. The UKTAG has applied an approach based on the use of field data to identify the concentration of total iron at which invertebrates appear consistent with good (or better) status. This threshold has been used as the basis for the proposed standard." As stated above the UKWIR report ( UKWIR 11/WW/20/4) concludes that there appears to be no significant ecological changes downstream of WwTW's dosing iron; in many cases the number of sensitive ecological species present actually increases".</p>			
22	United Utilities	<p>The report is clear in the approach taken and the conclusions produced. However some of the conclusions have potential further implications for the water industry that may need further consideration e.g. the review of intermittent standards, the interpretation of which may put focus on the use of Upper Tier limits for continuous discharges.</p> <p>The report is generally clear and follows a sensible approach though there are a few issues where technical conclusions may be questioned. (see below)</p> <p>There has clearly been an exercise to revisit the previous precautionary approaches, which on the positive side has led to proposals e.g. chapter 5 / 6 to relax previous criteria relating to river flows/lake level, which should help clean water/abstraction issues. Certain EQS stds have also been relaxed. This is counteracted by tightening of standards ( e.g. certain P Subs).</p> <p>Specific comments</p> <p>Chapter 1 – Introduction -Good to see emphasis on certainty / statistics and need for investigations if unsure before take action. There is on page 10 a comment re the "alignment" of WFD stds with protected area stds" this of course is a worse case scenario, which will push to highest ecological/chemical stds if applied, generating significant costs.</p> <p>Chapter 2 - Specific pollutants - It is of concern that 10 new specific pollutants identified page 13, believe 50 per cent of these are not part of CIP, so future studies necessary.</p>			

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		<p>Page 15 has reconsidered 12 "list 2" substances and re-assigned them as being less critical on basis of existing control measures (product bans etc.) It will be important to align this sort of thinking with way the CIP is concluding.</p> <p>Table 2.1 cover the new stds most of which are tighter but use of bio-availability considerations for metals is to be welcomed.</p> <p>There is mention on page 26 of "... perhaps designing CSO's" to meet a 99 percentile BOD/NH3 std in order to safeguard specific pollutant EQS compliance due to CSO spills. Interesting to see this linkage being made, but limited evidence of any issues.</p> <p>Iron std has become tighter but now on total basis rather than dissolved. More consideration of true bio-availability would have been better still.</p> <p>Chapter 3 – Groundwater-Tightening of threshold risk assessment for ground water believed to impact on surface water quality (page 44) will prompt more groundwater investigations.</p> <p>Chapter 4 - Alien species- More species under consideration and links to another expert body GBNNSS are no surprise.</p> <p>Chapter 5 - Mid flows -See overall comment above - generally more pragmatic approach</p> <p>Chapter 6 - Lake Water levels - See overall comment above - generally more pragmatic approach</p> <p>Couple of points for clarifications: - Whether the River Flow standards apply to Heavily Modified Water Bodies;</p> <p>How the Lake Level standards will be implemented e.g. on lakes with variable gradients; and</p> <p>What the Lake Level reference conditions are for lakes designated as Heavily Modified Water Bodies which are abstracted from for public water supply.</p> <p>Chapter 7 – Intermittents - After review no changes to FIS or percentiles proposed. I am with Howard here that compliance with 99 percentiles will in some cases force more attention/investment on continuous discharges.</p> <p>Chapter 8 – Acidification - No comment but overall balance seems to be more pragmatic</p>			
23	Tata Steel	<p>We have some concerns with the approach taken to deriving the Environmental Quality Standard (EQS) for iron, which are discussed in more detail in sections 2(b) and 3. In section 3 we give our full response to the development of the EQSs for iron and some further comments on the Environmental Quality Standards proposed for free cyanide.</p> <p>In the case of the iron EQS, the answer to this question is no. The approach taken has not used the extensive dataset generated from recent laboratory toxicity studies carried out on behalf of the Iron Industry. The results of these studies indicate that local water chemistry has an important effect on the potential for iron to cause adverse effects on freshwater organisms. We appreciate being given the opportunity to</p>			

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		<p>comment on this proposal. I am responding on behalf of Tata Steel UK Limited. We operate over 20 installations, many of which have discharges to controlled surface waters. Consequently, we have a great interest in Water Framework Directive related proposals, and as such would like to provide our comments on this UKTAG proposal[1], specifically the proposals made for Environmental Quality Standards for iron and for free cyanide. I am making this response on behalf of Tata Steel UK Limited, but would emphasise that our response to the iron EQS proposal is also in support of the comments and data provided separately on behalf of the Iron Platform, the Iron EQS Working Group and Eurofer[2].</p> <p>1. Response to the Iron EQS proposal:                      The proposed EQS for iron of 730 µg/l total iron in freshwater is a significant reduction from the current UK standard for iron, of 1000 µg/l dissolved iron. UKTAG has carried out an analysis of the implications of adoption of this proposed standard on compliance in surface waters. The results of this analysis are set out in their consultation document[1], and show that adoption of this standard are expected to lead to a significant increase in the number of breaches of the iron standard at freshwater monitoring sites across England, Wales and Scotland.</p> <p>We understand that this proposed EQS has been derived using field data, as “conventional laboratory data on toxicity are difficult to interpret”[1] in the case of iron. We understand that the chemistry of iron in natural waters is complex, and hence the effect of water chemistry on its ecotoxicity is difficult to model. The relationship between iron ecotoxicity and water chemistry, for example the levels of dissolved organic carbon (DOC), water hardness and pH, have therefore not been taken into account in the derivation of this proposed EQS.</p> <p>We would however like to highlight that the international iron and steel industry has devoted a great deal of effort and funds over the last three years to scientific studies to develop understanding of the relationship between iron ecotoxicity and water chemistry. This work has been carried out under the auspices of the REACH Consortium Iron Platform, and has generated scientifically justified findings that can be used to model the ecotoxicity behaviour of iron in freshwater for local water chemistry conditions. Recent work for the Iron Platform using this understanding indicates that the proposed EQS of 730 µg/l total iron is likely to be overprotective in many cases[2]. Adoption of this EQS could therefore lead to unnecessary costs being borne by society. One further point is that it is unclear whether an impact assessment of the potential effects of adoption of this standard has been carried out.</p> <p>Tata Steel in Europe has played a key role in the Iron Platform and its Technical Working Group, and agreed at the outset with the other members of the group to share the findings of the studies carried out on iron ecotoxicity with UK DEFRA and the Environment Agency, which was the original aim of the project. Consequently, we are disappointed to see that the current proposal for an iron EQS has not taken account of these findings.                      This has led to the proposal of an EQS for iron that is likely to be overprotective in many cases.</p> <p>Conclusions:                      In light of our comments above we would therefore ask that UK DEFRA urgently reconsider taking on board this information in setting the final UK iron EQS, and would strongly support the Iron Industry recommendation for an EQS for iron that varies as a function of water chemistry.</p>			

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		<p>2. Response to the Free Cyanide EQS proposal:                      We would like to make one key observation regarding the EQS proposal for free cyanides relating to the analytical capability of current methods. As I understand it, detection limits for free cyanides using currently available methods are no lower than 1 µg/l. This makes all but the short-term EQS for freshwater undetectable, and hence it will be impossible to determine whether a water body is in compliance with this EQS or not, making the proposed EQSs unworkable.</p> <p>References                      [1] UK Technical Advisory Group on the Water Framework Directive, ‘Updated Recommendations on Environmental Standards, River Basin Management (2015- 2012) (Draft)’, 26th April 2012.                      [2] Iron Industry comments on the UKTAG EQS proposal for Iron.</p>			
24	Scotch Whisky Association	<p>The SWA does not have any specific comments on the environmental standards to propose at this stage. We are currently exploring these proposed standards internally &amp; with SEPA and will comment on the relevant standards in due course.</p> <p>We would, however, like to make a general comment related to the wording on page 31, para 2. The document states “One of the main reasons for breaches of the existing copper standards is discharges from distilleries”. Yet the supporting data, set out in table 6 highlights only 2 or 3 sites where there may be an issue and table 7 states that no sites will be impacted. In addition, some areas of Scotland have naturally elevated levels with concentrations sometimes greater than the EQS for the waterbody. The report provides data on Copper levels and breaches for the other regions of the UK, but no industry has been named regarding the source or attributing to the breaches. In light of these points, we request that the above statement relating to distilleries could be removed from the final report.</p>			
25	SSE	<a href="#">Response Attached</a>			
26	Energy UK	<a href="#">Response Attached</a>			
27	Thames Water	<a href="#">Response Attached</a>			
28	Wildlife and Countryside Link	<a href="#">Response Attached</a> <a href="#">Glass half full half empty 1oao</a> <a href="#">Statistical review of 1oao</a>			
29	Dounreay Site Restoration Ltd	The report presents a view of the standards that can be derived from EU	At various places, the report refers to mean concentrations. There are technical difficulties in defining mean concentrations when results are reported as below detection, and we suggest that mean is replaced by	We have specific concern on the approach proposed for preventing inputs of pollutants from contaminated land in to groundwater. The report proposes to apply the approaches presented in Directive 80/68/EEC. Since this	

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		<p>legislation. However, what is lacking is a wider European context. The WFD cites the Treaty of Rome, the objective of which is to produce a 'level playing field' across member states. It is not possible to determine from the report whether the interpretations and proposals are in line with proposals from other member states.</p>	<p>median. This is generally conservative.</p>	<p>is proposed to be repealed next year, we believe that this is not appropriate. If it were, the Directive would not be being repealed.</p> <p>We accept that the extension of the 'prevent' requirements to pollutants from contaminated land is a reasonable interpretation of Directive 2006/118/EC. However, it must be accepted that measureable concentrations of hazardous substances may enter groundwater from land in its natural condition. Although this is not pollution as defined in law since it is not anthropogenic, the land is still contaminated as defined by UK law. Distinguishing natural and anthropogenic inputs of hazardous substances can be technically challenging. The recommendations acknowledge the cost of contaminated land remediation in two sentences on pp 46-47, and the possibility of exemption. We would welcome, as a matter of urgency, guidance from UK TAG on grounds for exemption. Practical experience is that exemptions are difficult to achieve, and it is not clear that there is a robust mechanism for granting them in Scotland.</p> <p>We note that 1,1,1-trichloroethane remains listed as a hazardous substance in Table 12. This compound does not meet the toxicity test proposed recently by JAGDAG. We request that urgent review is made to produce a more realistic list of hazardous substances, to avoid the UK being burdened with unnecessary remediation costs.</p> <p>We note that the acronym TCE is used to refer to tetrachloroethane on p20. In the groundwater industry, this acronym is used for trichloroethene - thus there is the potential for confusion. Tetrachloroethane has two isomers, 1,1,2,2- and 1,1,1,2-. Which isomer is intended to be the subject of control?</p>	

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30	NFU	<a href="#">Response attached</a>			
31	Iron Platform Services	<a href="#">Response attached</a>			
32	Anonymous	Not to be published on website			
33	BASF	<a href="#">Response attached</a>			
34	Wye and Usk Foundation	<a href="#">Response attached</a>			
35	Welsh Water	Yes, reasonably so.	Yes, with qualifications listed under question 3 below.	<p>For river flow standards - The standards are expressed as the percentage of the natural flow that may be abstracted without a significant risk of damage to the ecology of rivers. However, no guidance or methodology is put forward with regard to how a 'natural flow' should be derived. There are two big influences to take into account when deriving a natural flow: Firstly how to deal with impounding features such as reservoirs and their associated compensation and regulation releases. Secondly, the period of the record of the data used in deriving the flow must be a representative period - this is increasingly a challenge in context of climate change.</p> <p>We think that there should be a common methodology of deriving naturalised flows to ensure that flow standards are applied uniformly across the UK and would like UKTAG to consider guidance on this issue.</p> <p>With regard to standards for intermittent discharges: We think that the Fundamental Intermittent Standards described in the consultation document are a 'measure' rather than a 'standard' to be achieved and should not go forward as such. Existing standards for BOD and ammonia are sufficient and measures to achieve these standards should be selected in order of cost-</p>	

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					<p>effectiveness rather than being prescribed on a precautionary basis.</p> <p>As a final point we would ask UKTAG to work to bring together divergent standards for WFD and protected areas that should properly be unified – a common phosphorus standard for WFD and Natura 2000 sites is an obvious candidate for rationalisation.</p>
36	Cefic/ Cyanides Sector Group	<a href="#">Response attached</a> <a href="#">Fraunhofer report on cyanides</a>			