Comments on Further Enquiries from Calderdale Metropolitan Council to Calder Valley Skip Hire re Environmental Permit Application No S13/006 5/6/2024

Having read the request for extra information from CVSH re the above application and the comments from Bureau Veritas on those questions. It would appear that CVSH has responded with a reiteration of previous air quality and dispersion statements. Bureau Veritas has responded by agreeing that the questions have been answered, however the Bureau Veritas conclusion is very qualified and effectively says that the information is just about adequate and the system can be adjusted when it is running.

Is this adequate for the safety and Health of the residents of Sowerby Bridge is at stake? Effectively they are saying that the information is adequate to start a large scale experiment with the air quality in Sowerby Bridge and surrounding areas that may seriously affect the health of thousands of people and that the effects will be monitored and adjusted if problems are seen.

A request was made to the Meteorological Office to purchase weather data for the incinerator site to quantify the likelihood of inversions trapping effluent in Sowerby Bridge, this is a service that they offer. However they declined and the answer from one of their senior weather scientist was "Unfortunately that is exactly the kind of application we cannot support. That is a very narrow deep valley, (~500m wide) that simply will not be resolved by our analysis or NWP . We could not meaningfully assess conditions within that valley. Meteorological convention would suggest that valley would be prone to inversions/cold air pooling, but I think you would need CFD modelling and/or in-situ observations to be able to judge how often the smoke stack would be above/below "

I would suggest yet again that the experiment has already been done and the in-situ observations have been made and photographed by the residents of Sowerby Bridge. It is well documented that the fire on CVSH site on 4 Jan 2017 resulted in smoke sitting in Sowerby Bridge for 3 days. The mist can be frequently seen to sit in Sowerby Bridge which will trap the effluent and hold it in the valley bottom. Sowerby Bridge is already an Air Quality Management Area and is only 500metres Downwind (of the prevailing wind) of the proposed SWIP. The additional pollution from the SWIP must be **added** to the significant background pollution of the already poor air quality in Sowerby Bridge when considering the overall effect.

In his refusal of the permit John Woolcock, Environmental Inspector stated :-

Conclusions

46. I have taken into account all other matters raised in the evidence but have found nothing to outweigh the main considerations that lead to my conclusions. I am unable to find that granting an environmental permit for the SWIP would not have an unacceptable adverse effect on human health and the environment.

I note that CMBC has only focussed on the air quality issues. There are a lot of other unanswered questions relating to this application that remain unanswered. John Woolcock did not focus on these or pass judgement on these in his judgement as he was going to refuse the permit anyway. He states:-

Other considerations

44. **Similarly, as the deemed refusal will stand it is not necessary for me to rule on the technical objections raised by third parties.** However, it is necessary to comment on the objectors' concern that CMBC has shown only limited understanding of the regulatory processes and that there is no evidence that CMBC has the technical expertise to regulate this facility.[42] CMBC is the regulator for the proposed SWIP and has statutory responsibilities in this regard. Planning decisions should assume that the pollution control

regime will operate effectively.[43] It seems to me that the same assumption should apply to the monitoring and regulation of environmental permits. Local reservations about CMBC's ability to properly regulate the SWIP are no part of my decision to dismiss the appeal.

These matters still require answering and CMBC has not asked CVSH for clarification or verification. Does CMBC have answers to the following issues before considering this permit application.:-

1/ The RPS application submitted on 26 Jan 2024 on behalf of CVSH says 2.1.3 that they intend to burn 2 tons per hour in the Incinerator. Elsewhere in the non technical summary they state that they intend to burn 10,000 tons per annum. However the leaflets on the Calderdale website state the specification for the proposed incinerator (Inciner8-1000) states it only has a capacity of 1 ton per hour. In addition the instructions quoted by Alex Hall in the Solid Works Flow Simulation Report state that for best performance it should be loaded to half maximum capacity. The current technical data sheet from Inciner8 (https://www.inciner8.com/product-information-sheets) states that the burn rate of the I8-1000G is 600kg/hr. Has the incinerator load been down rated to comply with current emissions? This is one third of the 2 tons/hr that CVSH propose to burn or approx 3,300Tons /year.

2/ Planning Condition 8 :- 8) Before the first operation of the SWIP hereby approved a scheme shall be submitted to and approved in writing by the Local Planning Authority to demonstrate that electrical generation and/or heat recovery systems have been installed with the capability to meet equivalent energy outputs per unit of waste derived fuel input that meets or exceeds the equivalent of the R1 energy efficiency index. The SWIP shall be operated and maintained in accordance with the approved scheme to ensure that it continues to meet this R1 energy efficiency index and maintains Recovery status."

The condition 8 above was specifically inserted by Jenkins. In the document by RPS "Planning Condition 8 R1 Scheme" submitted on 1 Dec 2020, calculation of R1 is all done, based on an incineration Rate of 1 ton per hour. This calculation was accepted (17/00113/WAM Reference 17/00113/DISC4) as partially satisfying Condition 8. At 1 ton per hour the absolute maximum throughput would be 1ton X 5days X 24hrs X 52weeks= 6,240 tons per Year *excluding* startup, shutdown, scheduled downtime, breakdowns and Holidays.
If calculating R1, using the provided parameters in the RPS submission, is done using 2 tons per hour then the R1 would drop to approx, 0.34 way below the required 0.65. At 1 ton per hour. The ORC is running flat out to satisfy R1 so cannot recover more energy, and wasted heat does not count as "recovered" for R1.

3/ From the above is it 1 ton/hr or 2 tons/hr or 600Kg/hr ? 10,000 tons /annum or less than 6,250 tons/annum ? If it is 2 tons/hr how do they propose to satisfy R1 for condition 8 set by Jenkins in the planning permission? Will the Inciner8 cope and stay within it's required emissions? (see comment in [redacted] Flow Simulation " For the first stage of this study, air has been used at each inlet at each burner at a set temperature. Assumptions are made with the air having a variable viscosity,
specific heat, and thermal conductivity in respect to temperature, with the correct flow rates and temperatures derived from assumptions of Stoichiometric ratio regarding the waste and ratio of fuel. This is sufficient for simulating a two chamber incinerator such as this one *providing the incinerator isn't overloaded*.") There has been no Manufacturer's documentation presented to certify what emissions the Inciner8 system will achieve under the running conditions proposed by CVSH at 1 ton per hour or particularly at 2 tons/hr which is twice specified capacity of the Inciner8-1000. (or 3 times capacity according to current Inciner8 documentation, see above) The higher throughput of 2 ton/hr. will reduce residence time and temperature in the secondary chamber producing more highly toxic gasses (dioxins, furons, PCBs PCHs etc. from plastics) and the filters are likely to require upgrading.

4/ In the RPS application section 4.3 Energy Consumption, it states a parasitic consumption to be 1MW and virtually no fuel used in addition to the RDF. However in the Specification of the Inciner8-1000 (from Calderdale website) it gives a fuel consumption of 65Kg/hr presumably of diesel as that is stated as the fuel to maintain temperature if required.. In the approved calculation for R1 it uses a parasitic consumption of 20KW.
Again we have anomalies, is it 1MW or 20KW ? This figure is Ef in the R1 calculation and will come off the input.
The 65Kg/hr of diesel consumption ignored in the calculation submitted by RPS to satisfy Condition 8 equates to 45.5MJ/kg X65= 2,925 MJ/hr that should be added to the R1 calculation as input. Using the approved calculation and parameters provided at 1 ton per hr but adding in the previously ignored fuel consumption gives:-

R1 = (6,63GJ/hr)/ (10GJ/hr+ 2.9GJ/hr)X0.97= 0.53

which is well below the required 0.65 in condition 8 of the planning permission. Why has this fuel consumption been ignored? Given that it cannot be ignored how will CVSH achieve an R1 of over 0.65. This does not appear to be addressed in the approval of the calculation issued by Calderdale Council. 17/00113/WAM Reference 17/00113/DISC4

5/ In the RPS 2024 Application document 1.1.2 the application states that the SWIP will produce about 1.5 Mwhr/ ton of RDF. However the calculations for R1 are based on 10MJ/kg for the RDF which equates to 10GJ/ton. 1MWhr equal 3.6GJ therefore at 1 ton per hour the SWIP output in MW equals 10GJ/3.6GJ=2.78MW, nearly double the output quoted. Another anomaly. What is the explanation for this? At 2 tons per hour the input would be in the region of 5MW.

6/ There is no specification or data given for the duct Taking heat from the SWIP to the dryer, this is circa 100metres long from the drawing. Heat lost in this can not be counted as recovered, only the heat actually used by the dryer is "recovered". There is no indication of how this will be measured at the dryer or the data recorded which is a requirement of meeting R1. The approved planning permission is For a SWIP meeting "recovery" conditions ie it must have an R1 above 0.65 see Condition 8 and Environment Agency Guidance.

7/ The dryer is on property covered by a permit regulated by the Environmental Agency, but the dryer is inextricably linked to the operation of the SWIP by Planning Condition 8 and the SWIP is regulated by CMBC. Is this acceptable ? CMBC will be unable to monitor the use and consumption of the dryer as it is in an area operating under the Environmental Agency who will be regulating it. Is the EA aware of this?

8/ The ORC is part of the system to allow the SWIP achieve it's recovery status as required by condition 8 of the planning permission approved by [redacted]. However in the RPS 2024 Application 4.2.2 they state that the ORC is not part of the SWIP and therefore not covered by the permit. This would appear to be to avoid IED regulations covering organic working fluids contained in the ORC. Can it be explained how an item of plant that is essential to allow the SWIP to comply with it's required "recovery" status is not part of the plant ?

9/ In the RPS "Planning Condition 8 – R1 Scheme" dated 7 April 2021 under Energy Recovery System and Minimum Requirements. They State that the SWIP Boiler will have an input of 1.5 MW. Apart from the issue of input energy, (see 5/ above) there is no mention of a boiler or associated pipework on any of the diagrams presented. The flue gas heat exchanger appears to be air cooled both from the very limited diagrams and the Inciner8 documentation presented. So where is the boiler situated in the already crowded shed and what is the specification? Boilers are usually pressure vessels requiring the associated Pressure Vessel specification and certification, none is presented.

10/ The RDF will be coming from an area of the site that is regulated by the EA so CMBC will not have any control over it's content or quantity. How will CMBC, as regulator, regulate this as content and quantity are critical for the SWIP to perform correctly and within it's legal limits? Are the EA aware of this situation?

11/ FROM THE INDUSTRIAL EMISSIONS DIRECTIVE Articles referred to in the Environmental Permitting (England and Wales) Regulations 2016 No 1154

Article 44

Applications for permits

An application for a permit for a waste incineration plant or waste co-incineration plant shall include a description of the measures which are envisaged to guarantee that the following requirements are met:
(a)

The plant is designed, equipped and will be maintained and operated in such a manner that the requirements of this Chapter are met taking into account the categories of waste to be incinerated or co-incinerated;
(b)

the heat generated during the incineration and co-incineration process is recovered as far as practicable through the generation of heat, steam or power;
(c)

the residues will be minimised in their amount and harmfulness and recycled where appropriate;
(d)

the disposal of the residues which cannot be prevented, reduced or recycled will be carried out in conformity with national and Union law.

In addition in the Government Environmental Permitting Guidance, Applications section 5.4 states:-

"Applicants shall provide the following information as a <u>minimum.</u>
(a) Demonstration that the plant is **Designed,** equipped and operated to meet the requirements of the WID taking account of the categories of waste to be incinerated."

From the unanswered questions above the Application has satisfied non of the above requirements. There are a lot of anomalies in the very limited technical information supplied. A significant amount of information about the proposal has had to found by research from the little information supplied, for example the dryer has no specification, only a name from which to find information. For this lack of proper design and specification alone the permit should be refused.

12/ Operator Competence :- Paragraph 13 of Schedule 5 EPR 2016 states that the regulator must refuse an application for an Environmental Permit if the following will not be satisfied (a) the applicant must be the operator of the regulated facility, and (b) would operate the the regulated facility in accordance with the environmental permit. The above application shows that the operator has a poor understanding of the facility that they propose to supervise and run. I suggest that they are not competent to be granted the permit.

Summary:-
The air quality issue is not clear cut and there is significant doubt as to the accuracy of the modelling. Bureau Veritas did not endorse it without reserve, there were were qualifications, particular around Arsenic, and the use of the words like adequate in their conclusions. The use of these models is usually standard practice however this is not a standard location. I am not aware of anyone else who has located an incinerator in the bottom of a deep steep sided valley. This renders it very difficult to find good weather data for the computer models and it does not matter how good the models are if the data provided is not accurate, the answers will not be accurate. The Meteorological Office has confirmed this. Empirical evidence from observation indicates that the effluent will often sit in the valley bottom over Sowerby Bridge which is an Air Quality Management area.

There are a lot of unanswered questions about the loading of the Incinerator. 2 tons , 1 ton or 600Kg per hour?

There are questions about R1 and satisfying Condition 8 of the planning permission.

There are unanswered questions about the heat transfer system. The flue heat exchanger is air cooled from the drawing supplied but how is this heat transferred to the ORC? Boilers are mentioned but not specified. It is not clear how heat is transferred to the Dryer, hot air or water/steam? Where is the boiler in the plan?

Who regulates which bit of the plant and process, CMBC or the Environmental Agency?

There is no proper specification of any of the plant or it's interconnection provided.

There is no certification or guarantees from manufacturers or Recognised contractors that the plant will meet the safety or emission regulations. Why not?

I am surprised that since CMBC states that they have the in house expertise to regulate this SWIP that the above questions were not asked as additional information when the questions about the air quality were asked. I do understand that CMBC only has one other established SWIP to regulate.

There are many other questions still to be asked but I believe that the above and my document submitted previously provides enough doubt about the safety and viability of this proposed incinerator that the permit must be refused.

The cost benefit analysis only goes one way, that is to benefit CVSH in the pocket at the cost of health and environment in Sowerby Bridge. It is absolutely certain that the incinerator will not improve the health of Sowerby Bridge but it may well have a significant adverse impact on the health of Sowerby Bridge. It is totally unreasonable for CMBC and CVSH to put the health and well being of the residents of Sowerby Bridge at risk and treat them as Human Guinea pigs by granting this Permit and allowing the incinerator to run while CMBC and CVSH attempt to adjust the process to make it safe, as suggested by Bureau Veritas. The presumption must be for safety if there are any doubts it must be refused. We do not want any repeat of the Post Office or the Contaminated Blood events occurring in Sowerby Bridge.

CMBC must agree with John Woolcock, that is to say:- " I am unable to find that granting an environmental permit for the SWIP would not have an unacceptable adverse effect on human health and the environment."

[redacted]