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FW: Hafod LFG Audit
Oakes, Ian

Sent: 11 November 2014 09:51
To: Bradford, Julie
Cc: ian.oakes@environment-agency.gov.uk
Attachments: Hafod GasSim Output Graph.xlsx (12 KB) [Preview on web]

EDRM / PR

From: ICraven@coryenvironmental.co.uk
[mailto:ICraven@coryenvironmental.co.uk]
Sent: 11 November 2014 09:07
To: Roberts, Anthony
Cc: Oakes, Ian
Subject: Hafod LFG Audit

Hello Tony,

Ahead of the next LFG review at Hafod next week and having revisited the report relating to your July review, we wanted to provide to NRW our current gas projections for Hafod and also provide some further comments in relation to the NRW gas forecast that was included within the July report.

As discussed when we met on the 12/8, Cory update our landfill gas forecasts annually for all our sites to reflect the actual waste inputs received, the composition of the waste inputs and all other relevant site specific factors. Cory utilise GasSimv2.5 for these reviews. I attach the output of our GasSim review undertaken early in 2014 which you will see shows a current bulk yield at 50% CH₄ of 913m³/hr. Within these reviews we also include a forward forecast of waste inputs derived from our business plan, such that an accurate forward trend is also provided. For Hafod the Wet scenario within GasSim is utilised - supported by experience during drilling operations, our leachate levels / management including significant export, and the early capping and restoration program at the site.

Cory considers that this GasSim forecast is the most accurate available for Hafod and is therefore that which should be considered as part of any 2014 NRW technical reviews. This forecast updates and supersedes any previous Cory GasSim forecasts that have been submitted. For the avoidance of doubt, Egniol have never been commissioned by Cory to provide a gas forecast for Hafod, and clearly the projection they must have submitted to the EA at the time that Mersey Waste were operating the site has no relevance now to Hafod.

We would like to make the following additional comments in relation to the gas forecast calculations that were undertaken by NRW in July:

1. Cory do not consider that simple calculations of gas generation are appropriate or accurate. Such calculations do not have sufficient consideration for the actual composition of the waste inputs. GasSim has been specifically developed by Golders and the Agency to provide accurate default waste compositions.
2. The 1.7Mte of waste inputs referred to in the report is vastly overestimated. The actual waste inputs received into the void at Hafod for the period 2006 to 31/12/13 was only 968,050Te. It is this quantity that is utilised for the historic inputs within our GasSim forecast; with inputs allocated from weigh bridge records into the appropriate waste type (eg Domestic, Commercial, Industrial and Inert). To corroborate our tonnage records I can confirm that as at our latest site survey of 2/9/14 there is currently 1,056,000m³ of consumed void. This volume includes of course the volumes of site derived cover placed

within the void; the 2014 inputs to that survey date (being 117,585 Te); less ongoing waste settlement that has occurred to date.

3. It is somewhat of a coincidence that both the GasSim forecast and the NRW conservative assessment both output 913m³/hr. NRW however report that this level is considered to be a conservative assessment. Cory considers that 913m³/hr is an accurate assessment for the reasons set out above.
4. The NRW July report states that '*LFTGN03 guidance document specifies a collection efficiency of 85% for operational landfills without final capping as a best practice benchmark.*' At section 2.3.1 in relation to the collection of landfill gas, the guidance actually states that an active gas extraction system should '*achieve the maximum practicable collection efficiency.*' The reference to 85% then specifically confirms that this relates to capped areas of the landfill. Cory considers that a collection efficiency of 85% will only be achieved in a fully capped and restored site. This view is supported by Golder Associates who consider that typical collection efficiencies of operational sites are between 65 and 75%.


Together with Graham Ball, I am currently collating the gas data for the newly installed gas wells, the drill logs and a revised copy of the gas collection infrastructure, so that you have these in advance of your audit. We also feel it would be appropriate that on completion of the two day audit, we all have a debrief meeting where we can discuss any relevant findings.

Kind regards

Ian Craven
NW Area Manager

Cory Environmental Resource Management
Bangor Road, Johnstown, Wrexham, LL14 6ET
TEL+44 (0)1978 843 025 MOB +44 (0)7740 023 758
FAX +44 (0)1978 844 201

www.corvenvironmental.co.uk

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