



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

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(ORC-2)

**MAY 12 2014**

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RE: Request for Alternative Operating Temperature at Forward Landfill under *United States of America, et al. v. Forward, Inc.*, Consent Decree, Case No. 2:11-cv-00590 EFB (E.D.Cal. May 2, 2012)

On behalf of Forward, Inc., you have made a request, dated November 21, 2013, to the U.S. Environmental Protection Agency, Region 9 ("EPA") and the San Joaquin Valley Air Pollution Control District ("District") for a higher gas temperature operating limit of 141° F at 22 wells<sup>1</sup> that are part of the gas collection and control system at Forward Landfill ("Landfill"). Pursuant to 40 C.F.R. § 60.753(c) of the Standards of Performance for Municipal Solid Waste Landfills 40 C.F.R. Part 60, Subpart WWW, §§ 60.750 – 60.759 ("Landfill NSPS"), the regulatory operating limit for these wells is 131° F. We have reviewed these requests and make the following determinations in accordance with Paragraph 14 of the above-referenced Consent Decree and with the Landfill NSPS.

Paragraph 14(b) of the Consent Decree contains standards for guiding a decision whether to grant a request for higher operating temperature limit for certain wells listed in Paragraph 14(a), and for "new" wells installed after February 1, 2012. Paragraph 14(b) states as follows, in relevant part:

As described in subparagraphs 14(a)(ii) and 14(c)(ii), Defendant may request an alternative gas temperature limit for the wellheads identified in this Paragraph by submitting its request in writing to EPA and the District. Any such request shall contain all available sampling and other evidence relevant to EPA's and the District's consideration of the requesting [sic], including, but not limited to, the existence of suspected or actual subsurface combustion. ... EPA and the District shall be guided in their decision by the following standards: If the results of two consecutive monthly CO Analyses for a given well that are taken immediately prior to Forward's request are below 200 ppmv, then Forward may stop monthly CO monitoring and operate the well with the higher operating temperature, but not to exceed 145 °F. If the monthly CO Analysis is above 200 ppmv and below 500 ppmv, Forward shall continue monthly monitoring

<sup>11</sup> A11-04, A12-02, A12-03, A12-04, A12-05, A12-13S, A12-14, A12-16, A0-65RS, FU05-15R, FU04-19R, F12-01, F12-02, F12-03, F12-06 F12-08, F12-09, F12-10, F12-11, Top Deck Well 01, Top Deck Well 04, and Top Deck Well 05.

but may still utilize the higher operating temperature, but not to exceed 145 °F. If the well is above 500 ppmv, Forward shall close the well as corrective action and undertake such further actions as directed by District and/or EPA to further investigate the potential for a subsurface fire in the area of the well. After considering Defendant's request, EPA and the District will either grant the request or deny it, in writing. If EPA and the District grant Defendant's request for an alternative wellhead gas temperature limit for an existing wellhead, the alternative approved limit shall immediately supersede the previously applicable limit and become the new interim temperature limit for that wellhead.

Paragraph 14(c) of the Consent Decree states as follows, in relevant part:

For any well installed after February 1, 2012, if the gas temperature in one of these wells exceeds 131 degrees Fahrenheit, Defendant shall initiate corrective action within five Days. If correction of the exceedance cannot be achieved within 120 Days of the initial exceedance, Defendant shall: ... iii. Request an alternative gas temperature limit pursuant to Subparagraph (b) above; ....

Paragraph 11(a) of the Consent Decree requires Forward to comply with regulations in the Landfill NSPS and the National Emission Standards for Hazardous Air Pollutants: Municipal Solid Waste Landfills, 40 C.F.R. Part 63, Subpart AAAAA, §§ 63.1930 – 63.1990 ("Landfill NESHAP") relating to operation of the gas collection and control system at the Landfill. The Landfill NESHAP requires compliance with the Landfill NSPS.

Forty C.F.R. § 60.753(c) of the Landfill NSPS states as follows, in relevant part:

Each owner or operator of an MSW landfill with a gas collection and control system used to comply with the provisions of § 60.752(b)(2)(ii) of this subpart shall: ... (c) Operate each interior wellhead in the collection system with a landfill gas temperature less than 55 °C and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The owner or operator may establish a higher operating temperature, nitrogen, or oxygen value at a particular well. A higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.

Fourteen of the 22 wells for which a higher operating temperature limit is requested do not have monitored temperatures which exceed 131° F. Consequently, a higher operating temperature limit for these 14 wells is not necessary. As a result, EPA and the District deny the request for a higher operating temperature limit of 141° F for the following 14 wells: A11-04, A12-04, A12-05, A12-13S, A12-16, A0-65RS,<sup>2</sup> F12-01, F12-02, F12-03, F12-06, F12- 11, Top Deck Well 01, Top Deck Well 04, and Top Deck Well 05.

The remaining eight wells for which a request is submitted are A12-02, A12-03, A12-14, F12-08, F12-09,

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<sup>2</sup> Well AO-65RS is part of the Intermittent Well Program established in Appendix B of the Consent Decree.

F12-10, FU04-19R, and FU05-15R. Six of these wells are “new” wells, installed after February 1, 2012, for which Paragraph 14(c) of the Consent Decree states that Forward may request an alternative gas temperature limit pursuant to Paragraph 14(b). Paragraph 14(b) in turn provides standards to guide a decision whether grant a higher operating temperature limit. Specifically, Paragraph 14(b) states that if two consecutive monthly carbon monoxide (“CO”) readings taken immediately prior to Forward’s request are below 200 parts per million by volume (“ppmv”), then Forward may discontinue monthly CO monitoring and operate at a higher temperature not to exceed 145° F.

Two wells, FU04-19R and FU05-15R, are existing wells not specifically covered by Paragraph 14 but are addressed by the regulatory requirements of the Landfill NSPS which applies to all interior wells at the Landfill unless otherwise indicated. As stated above, “[a] higher operating value demonstration shall show supporting data that the elevated parameter does not cause fires or significantly inhibit anaerobic decomposition by killing methanogens.” 40 C.F.R. § 60.753(c). Information and data categories relevant to this provision include, but are not limited to, any overt evidence of subsurface combustion (*e.g.*, smoke, smoldering ash, burnt materials); gas temperatures; CO, oxygen and methane levels; and attempted corrective action.

Upon application of the standards set forth in Paragraph 14(b) of the Consent Decree, and consideration of the information and data categories relevant to the Landfill NSPS that are identified above, EPA and District make the following findings with respect to the remaining eight wells:

- 1) There is no overt evidence of suspected or actual subsurface combustion.
- 2) Wellhead gas temperatures were at 138° F or below at all eight wells in February 2014.
- 3) Six of the eight wells had CO readings at 100 ppmv or below in September and October 2013, the two months of available data prior to the request (and in February 2014 at the four wells where data was available). The most current data at two other wells, F12-09 and F12-10, showed CO readings at 52 ppmv or below in September 2012. Well F12-08, a well in close proximity to wells F12-09 and F12-10, had a CO reading of 60 ppmv in December 2013.
- 4) Oxygen levels at all eight wells were at or near 0%<sup>3</sup> in February 2014.
- 5) Methane levels at all eight wells ranged from 47% to 58% in February 2014.
- 6) Attempted corrective action, such as installation of additional wells and reducing vacuum, have been unsuccessful.

Based on the above findings, standards, and information and data, EPA and the District grant Forward’s request for a temperature operating limit of 141° F at wells A12-02, A12-03, A12-14, F12-08, F12-09, F12-10, FU04-19R, and FU05-15R, and impose additional monitoring and notification requirements on these wells as set forth below.

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<sup>3</sup> At well A12-14, one oxygen reading was at 0.2% on 2/28/14, and the previous available readings were at 0% on 2/13/14, 1/27/14, 1/10/14, 12/31/13, and 12/12/13.

In sum, for LFG extraction wellheads A12-02, A12-03, A12-14, F12-08, F12-09, F12-10, FU04-19R, and FU05-15R, Forward shall operate each of these wellheads with a landfill gas temperature less than 141 degrees F and with either a nitrogen level less than 20 percent or an oxygen level less than 5 percent. The following monitoring requirements are applicable to these wellheads: 1) Forward shall perform monthly CO monitoring using Draeger tubes, or a District/EPA approved monitoring device, for wellheads with a measured temperature greater than 131 degrees F; 2) If the measured field CO readings are less than 200 ppmv, the well may continue to operate up to a temperature less than 141 degrees F; 3) If the measured field CO readings are equal to or greater than 200 ppmv and less than or equal to 500 ppmv, the well shall be monitored on a weekly basis to verify that there is no subsurface oxidation occurring. Once the CO levels decrease to below 200 ppmv, the monthly monitoring schedule shall resume; 4) If the measured field CO readings are in excess of 500 ppmv, the well shall be temporarily closed and documented and a sample shall be obtained within one week of the exceedance and analyzed for CO using EPA Method D-1946. If results confirm the readings are in excess of 500 ppmv, the well shall remain closed and off-line and the District shall be notified within 24 hours of the exceedance; and 5) Upon receiving notification from the District, Forward shall undertake such actions as directed by the District and/or EPA to further investigate the potential for subsurface oxidation in the area of a wellhead and develop a plan for remediation.

At any time, if you have any additional questions concerning this matter, please contact Charles Aldred, at (415) 972-3986, or me, at (415) 972-3924.

Sincerely,



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