TECHNICAL REVIEW DOCUMENT
For
RENEWAL of OPERATING PERMIT 96OPEP152

Clear Spring Ranch – Solids Handling and Disposal Facility
El Paso County
Source ID 041/0091

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I. Purpose:

This document will establish the basis for decisions made regarding the applicable requirements, emission factors, monitoring plan and compliance status of emission units covered by the renewed operating permit proposed for this site. The original Operating Permit was issued February 1, 2001, and expired on February 1, 2006. This document is designed for reference during the review of the proposed permit by the EPA, the public, and other interested parties. The conclusions made in this report are based on information provided in the renewal application submitted February 3, 2005, additional technical information submitted on various dates, previous inspection reports and various e-mail correspondence, as well as telephone conversations with the applicant. Please note that copies of the Technical Review Document for the original permit and any Technical Review Documents associated with subsequent modifications of the original Operating Permit may be found in the Division files as well as on the Division website at http://www.cdphe.state.co.us/ap/Titlev.html.

Any revisions made to the underlying construction permits associated with this facility made in conjunction with the processing of this operating permit application have been reviewed in accordance with the requirements of Regulation No. 3, Part B, Construction Permits, and have been found to meet all applicable substantive and procedural requirements. This operating permit incorporates and shall be considered to be a combined construction/operating permit for any such revision, and the permittee shall be allowed to operate under the revised conditions upon issuance of this operating permit without applying for a revision to this permit or for an additional or revised construction permit.

II. Description of Source

This facility provides for the treatment and disposal of the sludge from the Las Vegas Wastewater Treatment Plant and the Northern Water Reclamation Facility. Blended sludge from the Las Vegas Street treatment plant is pumped to the Clear Spring Ranch Solids Handling and Disposal facility through a fiberglass reinforced pipe (FRP). The FRP is an 18-mile pipeline. The sludge is stored in a receiving station. From the receiving station, sludge is pumped sequentially to

the anaerobic digesters. The typical hydraulic residence time in a digester is a minimum of 15 days. During the time sludge resides in a digester, volatile solids are destroyed, gas is produced, and the sludge volume is reduced. Digested sludge is pumped to facultative sludge basins (FSBs) for long term storage (3-5 years). Supernatant from the FSBs are periodically discharged to supernatant lagoons. The FSBs are periodically taken out of service and dredged in order to remove the digested sludge. Sludge is sub-surface injected into dedicated land disposal units (DLDs).

The facility is located in El Paso County at 14390 Ray Nixon Road near Fountain, Colorado, approximately 17 miles south of Colorado Springs. The area in which the plant operates is designated as attainment for all criteria pollutants.

There are no affected states within 50 miles of the plant. There is no Federal Class I designated area within 100 kilometers of the facility. Florissant Fossil Beds National Monument is a Federal land area within 100 kilometers of the facility. Florissant Fossil Beds has been designated by the State to have the same sulfur dioxide increment as a Federal Class I area.

Three other operations (Ray D. Nixon Power Plant; 95OPEP106, Front Range Power Plant; 03OPEP268, and Las Vegas Street Treatment Plant; 95E1097) are associated with this facility for purposes of determining applicability of Prevention of Significant Deterioration regulations. These operations are covered by the facility AIRS ID 041/0030 & 041/0007. The Operating Permits for the Las Vegas Street Treatment Plant, and Front Range Power Plant have not yet been issued. The Operating Permit for Ray D. Nixon Power Plant was issued July 12, 2002.

MACT Applicability

DDDDD – National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters:
The effective date of the rule is November 12, 2004. This rule applies to all new and existing boilers at Clear Spring Ranch since this facility is considered a major source of HAPs (when the emissions from Nixon Power Plant are included). The rule does not apply to waste heat boilers. However, the boilers at this facility are not considered waste heat boilers since they are designed to be fueled with fuel oil in addition to digester gas. All of the affected sources are considered existing boilers. Three are considered large units, and one is considered a small unit. 40 CFR Part 63, §63.7506 explains the limited requirements that apply to the boilers at Clear Spring Ranch. The existing small boiler is not subject to any requirements. The existing large boilers are only subject to the initial notification requirements in §63.9(b).

Compliance Assurance Monitoring (CAM) Applicability

The compliance assurance monitoring (CAM) requirements in 40 CFR Part 64, as adopted by reference in Colorado Regulation No. 3, Part C, Section XIV apply to emission units equipped with control devices that are necessary to meet emission standards. The uncontrolled H_2S emissions exceed 100 ton/yr. The boilers and flares reduce the H_2S emissions by 96%. However the boilers are not considered control devices since they are primarily used to generate heat for the sludge processing units. The flares are not necessarily used as control devices but are used to get rid of excess digester gas that cannot be used in the boilers. Therefore, no emission units addressed in this permit are equipped with control devices and the Compliance Assurance Monitoring (CAM) requirements do not apply to any emission units at this facility.

Emissions

The summary of emissions that was presented in the Technical Review Document (TRD) for the original permit issuance has been modified to update the potential to emit based on revisions to permitted emission limits, and to update actual emissions. Emissions (in tons per year) at the facility are as follows:

	PM	**PM_{10}**	**SO_x**	**NO_x**	**VOC**	**CO**	**H_2S**	**HAPs**
Boilers and flares	4.3	3.15	52.50	49.46	1.10	105.65	8.1	
Sludge handling & disposal (fugitive)	(58.42)	(23.72)						
Actual Emissions (as reported on most recent APENs)								
Boilers and flares	1.04	1.04	21.15	7.56	0.14	15.42	0.45	
Sludge handling & disposal (fugitive)	(28.78)	(8.90)						

The PTE shown above is based on permit limitations. Actual criteria pollutant emissions are based on the most recent APENs submitted to the Division.

III. Discussion of Modifications Made

Source Requested Modifications

A renewal application was received on February 3, 2005 with the following changes requested:

Update to the Responsible Official to Jerome A. Forte, Chief Operating Officer, and Facility Contact Person to Paul Kim, Staff Engineer.
These changes have been incorporated into the renewed permit. Comments were submitted on January 5, 2007 to update the responsible official to Bruce McCormick, Chief Water Services Officer.

Update the facility name to "Clear Spring Ranch" from Hanna Ranch.
This change has been incorporated into the renewed permit. This was a name change only, not a transfer of ownership.

Cancellation of Construction Permit 82EP165.
This construction permit contained the conditions associated with the old anaerobic digestion complex. The old equipment has been removed from Clear Spring Ranch. This construction permit has been canceled and the operating permit conditions associated with the old anaerobic digestion complex have been removed. These conditions were found in Section II.1 of the previous operating permit.

Removal of the requirement to conduct a Method 9 opacity reading on the flares whenever the boilers are read using Method 9. & Removal of the requirement to conduct monthly Method 22 flare opacity observations.
The previous operating permit required a Method 9 opacity reading on the flares whenever a Method 9 reading is required on the boilers due to the extended use of distillate oil in the boilers. In addition, Method 22 readings on the flares were required on a monthly basis. If visible emissions were detected for more than 5 minutes during the Method 22 reading, a Method 9 opacity reading was required. The source reports that no visible emissions have been detected during the Method 22 readings on the flares since 2000.

The Division agrees that monthly Method 22 readings are unnecessary due to the history of compliance with the opacity standards. The Division also feels the Method 9 readings while the boilers are fired with distillate oil are also unnecessary. The renewal permit was drafted with revised opacity requirements for the boilers and flares. The boilers are now required to conduct one Method 9 reading on an annual basis while combusting fuel oil. A 2nd reading is required if

more than 47,000 gallons of fuel oil is used on an annual basis (this represents about 250 hours of operation with fuel oil). The Division feels this method of showing compliance with the opacity limit is more direct and easier to follow than the previous method requiring recordkeeping of the hours of operation while fueled with distillate oil. In addition, the Division has required an annual one hour Method 22 observation on each flare. A Method 9 reading is required if any visible emissions occur for more than 6 minutes. The Division feels an annual opacity reading is acceptable based on the compliance history of these flares with regards to opacity.

Comments were submitted on January 5, 2007 to request removal of the annual Method 9 observation requirement. Clear Spring Ranch wants to maintain the previous opacity observation schedule where a Method 9 reading is only necessary after 24-hr of continuous fuel use. The Division has reviewed the inspection reports for Clear Spring Ranch, and no opacity observations have been performed since 2003 since fuel use has been low for the last 3 years. The Division wants the opacity to be observed more often that every 3 years and will require the annual testing as explained above.

Removal of the ton/month emission limitation.
The Division has removed the tons/month emission limitations since these only applied to the first 12 months of operation.

Short-term digester gas fuel use limit.
Comments were submitted on January 5, 2007 to request removal of the short-term digester gas fuel use limit of 0.222 MMscf/hr. This fuel use limit is loosely based on the 186.4 lb/hr SO_2 emission limit. The SO_2 emission limit is necessary to maintain compliance with the National Ambient Air Quality Standards (NAAQS). Compliance with the emission limit is determined using the calculation procedures found in Appendix G. SO_2 emissions are based on the concentration of H_2S in the digester gas. The concentration can vary and is routinely checked. Since the concentration can vary, it does not make sense to include a digester gas fuel use limit. Compliance with a digester gas fuel use limit does not prove compliance with the short-term SO_2 emission limit until the H_2S concentration is accounted for. Clear Spring Ranch is required to keep records of all the calculations and provide them to the Division upon request. The Division will remove the 0.222 MMscf/hr limit because it does not necessarily prove compliance with the 186.4 lb/hr SO_2 limit.

Removal of the requirement to track use of iron salts.
Iron salts are added to the process to reduce the hydrogen sulfide emissions and to control struvite, which can block the sludge pipeline. The operating permit also contains an annual hydrogen sulfide (H_2S) emission limit and 5,000 ppmv

H_2S limit. Bi-weekly samples of the digester gas are required to be analyzed for H_2S. The measured H_2S concentration is also used in the annual emission calculation. The Division does not feel that the requirement to track iron salt use is necessary since these two H_2S limits exist (annual limit and concentration limit).

Removal of Condition 2.15 which discusses the phase-in period of the new equipment.
This condition has been removed from the permit since it is no longer applicable. The new equipment is operating and the old equipment has been removed.

Modification to the language in Condition 2.16.1 which describes the flare operation.
The language has been modified to specify that a minimum of one flare shall have a flame present at all times when biogas is being released.

Cancellation of Construction Permit C-11,588(FD) and issuance of new fugitive dust requirements based on current operating practices.
The permit has been modified to include the new fugitive dust control plan and opacity reading requirements. A weekly non-Method 9 opacity observation is required. If visible emissions are observed leaving the property boundary, a Method 9 reading is required until the emissions cease.

Update the insignificant activities list.
The list was updated.

Other Modifications

In addition to the modifications requested by the source, the Division has included changes to make the permit more consistent with recently issued permits, include comments made by EPA on other Operating Permits, as well as correct errors or omissions identified during inspections and/or discrepancies identified during review of this renewal. These changes are as follows:

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It should be noted that the monitoring and compliance periods and report and certification due dates are shown as examples. The appropriate monitoring and compliance periods and report and certification due dates will be filled in after permit issuance and will be based on permit issuance date. Note that the source may request to keep the same monitoring and compliance periods and report

and certification due dates as were provided in the original permit. However, it should be noted that with this option, depending on the permit issuance date, the first monitoring period and compliance period may be short (i.e. less than 6 months and less than 1 year).

- Added language specifying that the semi-annual reports and compliance certifications are due in the Division's office and that postmarks cannot be used for purposes of determining the timely receipt of such reports/certifications.

Section I – General Activities and Summary

- The permitted activities description and attainment status of El Paso County was updated.

- Construction permits C-11, 588(FD) & 82EP165 were removed from Condition 1.3.

- Conditions 13 and 17 in Condition 1.4 were renumbered to 14 and 18 and Condition 21 in Condition 1.5 was renumbered to 22. The renumbering changes were necessary due to the addition of the Common Provisions requirements in the General Conditions of the permit.

- In Condition 1.4, General Condition 3.d, & 3.g (new general condition for general provisions) was added as State-only requirements.

- Minor language changes were made to Condition 3 to more appropriately reflect the status of the source with respect to PSD.

- Based on comments made by EPA on another operating permit, the phrase "Based on the information provided by the applicant" was added to the beginning of Condition 4.1 (112(r)).

- Added a "new" Section 5 for compliance assurance monitoring (CAM).

- The table in Section 6 has been updated to reflect current equipment and control devices. The AIRS Point number for the sludge handling and disposal was corrected to 012.

- Compliance plan added to Section 7.

Section II – Specific Permit Terms

Section II.1 – Boilers and Flares

- The table and conditions have been rearranged to reflect current Division language and structure.

- The previous condition 2.1 has been removed since the list of equipment is found in Section I.6.

- The previous condition 2.4 has been removed since the Division has received the make, model and serial number of the equipment.

- The NSPS Dc language (Condition 1.8) has been revised to reflect current language.

- Previous condition 2.13 has been removed since it is not standard for the Division to include this language in the permit.

- Previous condition 2.14 has been removed since the self certification has been received.

- Previous condition 2.18 has been removed. This is not a typical condition to be included in the permit.

- Emission limits updated based on current emission factors.

Section III – Permit Shield

- The citation in the permit shield was corrected. The reference to Part A, Section I.B.43 was changed to Part A, Section I.B.44 and the reference to Part C, Section XIII was changed to Part C, Section XIII.B.

Section IV – General Conditions

- Added language from the Common Provisions (new condition 3). With this change the reference to “21.d” in Condition 21 (prompt deviation reporting) will be changed to “22.d”, since the general conditions are renumbered with the addition of the Common Provisions.

- The citation in General Condition 17 (open burning) was revised. The open burning requirements are no longer in Reg 1 but are in new Reg 9. In addition, changed the reference in the text from “Reg 1” to “Reg 9”.

- The definition of “prompt” has changed and Condition 21 has been updated with the new definition.

- Minor language changes to Condition 22.d have been incorporated.

- The language in condition 3.d. has been changed to reflect the changes made to the Common Provisions Regulation. Revisions were made to clarify the process by which a source must identify an upset or malfunction. The Division has changed the term upset to malfunction for consistency with EPA policy.

Appendices

- Appendix B & C have been updated to the current version (02/20/2007). The requirement to determine if data was continuous has been removed from Appendix C. The term “upset” has been replaced with “malfunction”.

- The table in Appendix F has been cleared of past modifications.

- The Emission Compliance Calculation Procedures have been moved to Appendix G. The emission factors for gas combustion in the boilers have been updated based on the current AP-42 emission factors. The CO, NOx, PM & PM10 emission factors have changed. The emission limits in Section II.1 have also been updated based on these new emission factors. In addition, the SO_x distillate oil emission factor was changed from 144 lb/1000 gal to 142 lb/1000 gal. This appears to be a typo from the previous permit.

- EPA’s mailing address in Appendix D has been changed.