



COLORADO

Solid & Hazardous
Waste Commission

Department of Public Health & Environment

NOTICE OF PROPOSED RULEMAKING HEARING BEFORE THE COLORADO SOLID AND HAZARDOUS WASTE COMMISSION

SUBJECT:

For consideration of the amendments to 6 CCR 1007-2, Part 1, Multiple Sections, along with the accompanying Statement of Basis and Purpose, the following will be considered:

Amendment of 6 CCR 1007-2, Part 1, Sections 1, 2, 3, 8, 9, 14 and 17, and Repeal of Section 12 - Regulations Pertaining to Solid Waste Sites and Facilities - Amendments regarding TENORM for consistency with 6 CCR 1007-1, Part 20

These modifications are made pursuant to the authority granted to the Solid and Hazardous Waste Commission in Section 30-20-109, C.R.S.

The purpose of the amendments is to make changes to the solid waste regulations for conformance with 6 CCR 1007-1, Part 20 (the Part 20 TENORM Regulation) promulgated by the Board of Health in December 2020. The Part 20 TENORM Regulation affects any solid waste facility that manages, or potentially receives, non-exempt TENORM. In addition, the Part 20 Rule has sector-specific requirements for several types of solid waste facilities.

For the purpose of aligning with the Part 20 TENORM Regulation, several changes to the Solid Waste Regulations (6 CCR 1007-2, Part 1) are proposed. First, TENORM related definitions are added to Section 1.2. Second, Section 2.1.2 is amended such that all solid waste disposal sites and facilities required to have waste characterization plans will include waste screening provisions for TENORM constituents in those plans. Furthermore, for each type of solid waste facility addressed specifically in the Part 20 TENORM Regulation, the pertinent requirements from Part 20 are proposed for direct adoption in the Solid Waste Regulations. Section 12 on the management and disposal of drinking water treatment residuals is proposed for deletion because its provisions for TENORM characterization have now been superseded by the Part 20 TENORM Regulation, and because its provisions for landfilling of sludge have been superseded by Section 3 of the Solid Waste Regulations. Only one site permitted under Section 12 is still operating and it will not be required to be re-permitted under Section 3. Finally, for the subset of Section 9 waste impoundments that manage potential TENORM waste, those facilities would need to modify their closure plans to account for TENORM constituents.

Any information that is incorporated by reference in these proposed rules is available for review at the Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division and any state publications depository library.



Pursuant to C.R.S. §24-4-103(3), a notice of proposed rulemaking was submitted to the Secretary of State on October 14, 2022. Copies of the proposed rulemaking will be mailed to all persons on the Solid and Hazardous Waste Commission's mailing list on or before the date of publication of the notice of proposed rulemaking in the Colorado Register on October 25, 2022.

The proposed rulemaking materials may also be accessed at:
<https://cdphe.colorado.gov/shwc-rulemaking-hearings>

WRITTEN TESTIMONY

Any alternative proposals for rules or written comments relating to the proposed amendment of the regulation will be considered. The Solid and Hazardous Waste Commission will accept written testimony and materials regarding the proposed alternatives. **The commission strongly encourages interested parties to submit written testimony or materials to the Solid and Hazardous Waste Commission Office, via email to cdphe.hwcrequests@state.co.us by Friday, November 4, 2022, at 11:59 p.m. Written materials submitted in advance will be distributed to the commission members prior to the day of the hearing. Submittal of written testimony and materials on the day of the hearing will be accepted, but is strongly discouraged.**

HEARING SCHEDULE:


DATE: Tuesday, November 15, 2022
TIME: 9:00 a.m.
PLACE: Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Building A, Sabin Conference Room
Denver, CO 80246
(At this time, only Commissioners and staff are able to meet in person.
All other attendance is welcomed virtually via Zoom.)
-OR-
Due to COVID-19 or inclement weather, the meeting will be held

online only at:

<https://us02web.zoom.us/meeting/register/tZYvcOytqzMqGdMFvHAearTIU1ErVZtdCubU>

Please check for the official location of the meeting on the commission's website:
<https://cdphe.colorado.gov/shwc-meeting-information>

Oral testimony at the hearing regarding the proposed amendments may be limited.



Brandy Valdez Murphy, Administrator



1 DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT

2 Solid and Hazardous Waste Commission/Hazardous Materials and
3 Waste Management Division

4 6 CCR 1007-2

5 PART 1 - REGULATIONS PERTAINING TO SOLID WASTE SITES AND FACILITIES

6
7
8 TENORM Amendments
9

10
11 1) Section 12 of the Table of Contents of the Solid Waste Regulations is being
12 amended by deleting and reserving Section 12 to read as follows:
13

14
15 PART 1 - REGULATIONS PERTAINING TO SOLID WASTE SITES AND FACILITIES
16

17
18
19 TABLE OF CONTENTS
20

21 PART B
22 REQUIREMENTS AND INFORMATION CONCERNING
23 ALL SOLID WASTE DISPOSAL SITES AND FACILITIES
24 IN THE STATE OF COLORADO
25

26 *****
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28 SECTION 12 ~~RESERVED WATER TREATMENT PLANT SLUDGE~~
29 ~~Applicable to all water treatment plant sludge disposal sites and facilities~~
30 ~~12.1 General provisions~~
31 ~~12.2 Application information alternatives~~
32 ~~12.3 Sludge acceptance criteria~~
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37 2) Section 1.2 is being amended by adding the following definitions:
38

39 1.2 DEFINITIONS
40

41 *****
42

43 “Technologically enhanced naturally occurring radioactive material” (TENORM) means naturally occurring
44 radioactive material whose radionuclide concentrations are increased by or as a result of past or present
45 human practices. “TENORM” does not include:

- A. Background radiation or the natural radioactivity of rocks or soils;
- B. “Byproduct material” or “source material”, as defined by Colorado statute or rule; or
- C. Enriched or depleted uranium as defined by Colorado or federal statute or rule.

“TENORM Radionuclides” means Radium-226, Radium-228, Lead-210, and Polonium-210.

3) Section 2.1.2 is amended by adding paragraph (C)(5) to read as follows:

SECTION 2

MINIMUM STANDARDS

2.1 SITE AND FACILITY STANDARDS. All solid waste disposal sites and facilities shall comply with the following standards:

2.1.2

(C) All sites and facilities, requiring a certificate of designation, shall have a waste characterization and disposal plan approved by the Department and in use for such site and facility. The plan shall outline waste screening methodologies, appropriate waste handling procedures, and waste exclusion procedures which shall be implemented at each facility. The plan shall:

(1) Describe the responsibility of the waste generator in determining if the generator’s waste is a hazardous waste pursuant to the Colorado Hazardous Waste Regulations, 6 CCR 1007-3, Part 261. Such determination may be made by:

(i) Testing the waste according to the methods set forth in Subpart C of Part 261 or according to an equivalent method approved by the Department under Section 260.21; or

(ii) Applying knowledge of the hazard characteristic of the waste in light of the materials or the processes used.

(2) Include the site and facility’s owner or operator’s evaluations, screening methods, and documentation procedures regarding the generator’s waste characterization determination.

(3) Include an identification of the waste streams requiring specific waste handling and/or disposal methods; and

95 (4) Include a contingency plan developed for handling any hazardous waste that is
96 inadvertently discovered.
97

98 (5) Include: i) provisions for excluding waste that is TENORM above the exempt limits
99 established in 6 CCR 1007-1, Part 20.4; or ii) for solid waste disposal sites and facilities that
100 are registered under 6 CCR 1007-1, Part 20, provisions for ensuring TENORM disposed at
101 the facility does not exceed the licensing levels in 6 CCR 1007-1, Part 20; and iii) a
102 contingency plan for handling of TENORM waste inadvertently accepted that are above the
103 levels set forth in (i) or (ii) as appropriate per the levels specified in the facility's approved
104 plans.
105

106 *****
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108
109 **4) Section 3.3 is amended by adding subsection 3.3.9 (TENORM Requirements for**
110 **Landfills) to read as follows:**
111

112 **PART B**

113 **SECTION 3**

114 **STANDARDS FOR SOLID WASTE DISPOSAL LANDFILL SITES AND**
115 **FACILITIES**

116 **3.3 OPERATING CRITERIA**
117

118 *****
119

120 **3.3.9 TENORM Requirements for Landfills**
121

122 Prior to disposing of TENORM above the exempt limits in 6 CCR 1007-1, Part 20, landfills shall be
123 registered and are subject to the following requirements and limitations, unless they are in
124 compliance with alternative non-exempt TENORM management and disposal requirements approved
125 by the Department under 6 CCR 1007-1, Part 20.9 and incorporated into the facility EDOP:
126

127 A. Must comply with 6 CCR 1007-1, Part 20.
128

129 B. Must have an approved Waste Characterization Plan (either stand alone or as an appendix to
130 the facility's Engineering Design and Operation Plan) that allows acceptance of TENORM waste
131 at concentrations, excluding natural background, up to 50 pCi/g each in dry weight of Radium-
132 226, Radium-228, Lead-210 and Polonium-210. The Waste Characterization Plan must have
133 waste acceptance procedures specific to TENORM wastes.
134

135 C. Must have an engineered liner or barrier layer with hydraulic conductivity less than or equal to
136 1x10⁻⁷ cm/sec in accordance with Section 3.2.5 (C)(2) or (3) of this Section, or in accordance
137 with Section 3.2.5(C)(4) of this Section subject to site-specific Division approval.
138
139
140
141

142 D. Must have a leachate collection system that meets the requirements Section 3.2.5(d) of this
143 Section.

144
145 E. Must have a groundwater monitoring system in compliance with Sections 2.1.15 and 2.2 of
146 these regulations.

147
148 F. Must have a minimum of 4 meters of materials not subject to 6 CCR 1007-1, Part 20, in
149 addition to the engineered liner or barrier layer, between the lowest placement of Non-Exempt
150 TENORM and groundwater.

151
152 G. Must place 6 inches of cover materials not subject to 6 CCR 1007-1, Part 20 on all TENORM
153 at the end of each operating day.

154
155 H. Must have a minimum of 3 meters of not subject to 6 CCR 1007-1, Part 20 requirements
156 above the non-exempt TENORM prior to closure of any area. This may include the final cover
157 system.

158
159 I. Must sample and characterize leachate for each TENORM isotope received by the facility.

160
161 1. If concentrations of TENORM isotopes are detected in the leachate in excess of the
162 groundwater standards these isotopes must be included in the groundwater monitoring plan.

163
164 2. Leachate containing concentrations of TENORM isotopes less than 100 pCi/L may be
165 applied to the working face of the landfill.

166
167 3. TENORM registrants per 6 CCR 1007-1, Part 20 shall not perform any other method of
168 recirculation or application of leachate containing concentrations of TENORM isotopes in
169 excess of groundwater standards within the facility without prior written approval from the
170 Department.

171
172 J. Must place any drill cuttings from methane gas collection system installation within the facility
173 on the working face and treated as TENORM waste.

174
175 K. For sites where solidification activities are approved within the Engineering Design and
176 Operations Plan, must place the Non-exempt TENORM materials received by the facility for
177 solidification within the solidification basins and must commence the solidification process within
178 24 hours of receipt.

179
180 L. Following closure of the landfill, must place an environmental covenant or restrictive notice on
181 the facility property in accordance with C.R.S § 25-15-320 and shall include a specific provision
182 which requires that any future buildings, residential or commercial, constructed on the permitted
183 site post closure, require radon resistant construction, post construction assessment and testing,
184 and radon mitigation sufficient to meet any federal, local, or Colorado standards on indoor radon
185 concentrations. Alternatively, the environmental covenant may prohibit construction of any
186 buildings on the site. **Note:** Irrespective of TENORM considerations, solid waste landfills will
187 trigger an institutional control requirement at closure.

188
189
190 **5) Section 8.6 (Beneficial Use) is amended by adding subsection 8.6.7(C) (Land**
191 **application of water treatment residuals) to read as follows:**
192

**SECTION 8
RECYCLING & BENEFICIAL USE**

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8.6 BENEFICIAL USE

8.6.7(C) Land application of water treatment residuals.

Non-Exempt TENORM in the form of water treatment residuals to be used for land application shall be registered and are subject to the requirements and limitations as follows, unless the Department has approved alternative non-exempt TENORM management requirements under 6 CCR 1007-1, Part 20.9;

(1). Registrants may possess materials that contain or are contaminated at concentrations, excluding natural background, greater than 5 pCi/g but not in excess of 50 pCi/g each in dry weight of Radium-226, Radium-228, Lead-210, and Polonium-210.

(2). Activities shall be in accordance with a Beneficial Use Certification or Beneficial Use Determination issued by the Hazardous Materials and Waste Management Division of the Department.

(3). Application to land for beneficial use.

(a). Concentrations of radionuclides in water treatment residuals applied to land shall not exceed 25 pCi/g each of Radium-226, Radium-228, Lead-210, and Polonium-210.

(b). Water treatment residuals containing Non-Exempt TENORM shall not be applied to an authorized application site for more than 20 years or 20 cropping cycles without written Department approval.

(4). Characterization. Characterization of TENORM materials including sampling and analysis shall be performed using appropriate and standard methods such as EPA SW-846 or equivalent alternative methods recognized by the Department.

(a). Water treatment residuals shall be characterized for concentrations of TENORM radionuclides prior to application.

(b). Characterization shall be done initially on residuals to be applied to land and thereafter at the following frequencies based on dry short tons per year (dst/y) produced:

i. Once per year for less than 319 dst/y.

ii. Once per quarter for greater than 319 but less than 1,650 dst/y.

iii. Once per two months for greater than 1,650 but less than 16,500 dst/y.

iv. Once per month for greater than 16,500 dst/y.

(c). Records of characterization shall be maintained for inspection by the Department until such time as the application activities cease at the site.

(d). Registrants shall provide notice to the Department sixty days prior to ceasing application activities at the site.

231 (5). Records of land application shall be provided to the Department annually. Records shall
232 include:

233 (a). Each application site location; and

234 (b). Number of applications at each site.

235
236
237 **6) Section 9.2.1 is amended by revising the title of the section and adding**
238 **paragraph (C) to read as follows:**

239
240 **9.2.1 DESIGN, ~~AND~~ CONSTRUCTION AND OPERATIONS**

241 The following design criteria apply to a Type A waste impoundment.

- 242
243 (A) **Access control:** The owner or operator shall control public access, prevent
244 unauthorized access, provide for site security both during and after business hours,
245 and prevent illegal dumping of wastes. Effective artificial or natural barriers may be
246 used in lieu of fencing.
247
248 (B) **Stormwater control:** Each waste impoundment shall be designed, constructed and
249 maintained to provide: (1) run-on control and diversion structures to prevent flow into the
250 unit from a 25-year, 24-hour storm, and
251 (2) a run-off control system to collect runoff from a 25-year, 24-hour storm and control run-
252 off from a 100-year, 24-hour storm. Precipitation that cannot be diverted from the
253 impoundment, and therefore comes in contact with impounded waste, shall be managed as
254 solid waste. Each impoundment shall be designed, constructed and maintained to prevent
255 damage to the containment structure from erosion.

256
257 (C) **Characterization:** The owner or operator of a solid waste facility managing potential
258 TENORM waste in a Type A waste impoundment shall ensure that such wastes are
259 representatively characterized according to their TENORM characteristics. Any wastes
260 characterized as non-exempt TENORM wastes must be disposed of at a facility approved to
261 accept such wastes.

262
263
264 **7) Section 9.2.5 (Closure) is amended by revising the introductory paragraph to**
265 **read as follows:**

266
267 **9.2.5 CLOSURE:** The owner or operator of each Type A waste impoundment shall develop a closure
268 plan and submit it for Department approval. The closure plan must present sufficient detail to support
269 the closure cost estimates required in Sections 4 and 9.2.2 above and to enable the Department to
270 evaluate the adequacy of financial assurance. For some Type A impoundments, the scope of the
271 closure plan will be limited to sludge and impacted soil removal, disposal and verification sampling to
272 ensure residual contamination is below acceptable levels in soil and ground water. Type A waste
273 impoundments in which potential TENORM wastes have been managed must address TENORM
274 radionuclides in the closure plan.

277 **8) Section 9.3.3 (Facility Operation Requirements) is amended by revising**
278 **paragraph (F) and adding paragraph (G)(6) to read as follows:**

279
280 **9.3.3 FACILITY OPERATION REQUIREMENTS**
281

282 (F) **Waste Characterization For Impoundments Accepting Only Wastes Generated On-site:**
283 Waste impoundments accepting only wastes generated on-site shall initially profile each waste
284 stream entering the impoundments and then update the profile as necessary to account for significant
285 changes to the waste generation process. For those Type B waste impoundments accepting potential
286 TENORM waste, the waste profile must include characterization for TENORM radionuclides. Existing
287 facilities may use the Demonstration Report to establish the initial waste profile.
288

289 (G) **Waste Characterization For Impoundments Accepting Wastes From Third Parties:**

290 *****
291 (6) Type B waste impoundment facilities accepting waste from third parties must also comply with
292 Section 2.1.2 (C)(5) provisions related to TENORM waste.
293

294 *****

295
296
297 **9) Section 9.3.4 (Engineering Design and Operations Plan) is amended by revising**
298 **paragraphs (F)(1)(c) and (F)(1)(d) to read as follows:**

299
300 **9.3.4 ENGINEERING DESIGN AND OPERATIONS PLAN**
301

302 *****
303
304 (F) **Closure Plan:** The EDOP shall include a closure plan that describes the steps necessary to
305 close each impoundment at any point during its active life and at the end of the facility's active
306 life. The facility may either: 1) close the waste in place as a solid waste landfill in accordance
307 with these Solid Waste Regulations, or 2) remove all solid waste and residual contamination to
308 meet unrestricted use concentrations. Option 2, also known as "clean closure," eliminates the
309 need for post-closure care. Both Option 1 and Option 2 require the owner or operator of a waste
310 impoundment to develop a closure plan.

311
312 (1) The closure plan shall include the following information consistent with Section 9.3.6:

313 *****
314 (c) Proposed plans and procedures for sampling and testing soil and ground water at the
315 site, to include TENORM radionuclides if the site accepted TENORM waste or potential
316 TENORM waste during site operations;

317 (d) Provisions for sampling and testing of residual materials, such as sludge and soil, and
318 provisions for final disposal, to include TENORM radionuclides if the site accepted TENORM
319 waste or potential TENORM waste during site operations.

320 *****
321

322 **10) Section 12 is deleted in its entirety and reserved to read as follows:**

323
324 **SECTION 12**

325
326 **RESERVED WATER TREATMENT PLANT SLUDGE**

327
328 ~~12.1—**GENERAL PROVISIONS** The following general provisions apply to all water treatment plant~~
329 ~~sludge disposal facilities except as provided in 12.1.4 for facilities in operation prior to adoption of~~
330 ~~these regulations.~~

331
332 ~~12.1.1 (A) Any person who disposes of water treatment plant sludge, receives water treatment plant~~
333 ~~sludge for disposal or permits water treatment plant sludge to be disposed of on any facility or~~
334 ~~property which he operates or possesses shall do so in compliance with the requirements of Sections~~
335 ~~1 through 3, and 12 of these regulations.~~

336
337 ~~(B) If a conflict exists between the requirements of Sections 1 through 3 and the requirements of this~~
338 ~~Section 12, the requirements of Section 12 shall control.~~

339
340 ~~(C) Notwithstanding the provisions of (A) and (B) Above, a person who disposes of water treatment~~
341 ~~plant sludge, receives water treatment plant sludge for disposal or permits water treatment plant~~
342 ~~sludge to be disposed of on any facility or property which he operates or possesses is not required to~~
343 ~~comply with subsections 1.4.4, 2.1.8, 2.1.9, 2.3, 3.1.1 of these regulations.~~

344
345 ~~12.1.2 Each water treatment plant sludge disposal facility shall comply with Colorado health laws~~
346 ~~and with the standards, rules and regulations of the Department and the water quality control~~
347 ~~commission and with all applicable local zoning laws and ordinances.~~

348
349 ~~12.1.3 These regulations do not apply to water treatment plant sludges which are beneficially used~~
350 ~~under the authority of the Colorado Domestic Sewage Sludge Regulations.~~

351
352 ~~12.1.4 (A) Surface and ground water monitoring may be required by the Department at existing~~
353 ~~facilities where impairment of existing or future use of surface or ground water is determined to be~~
354 ~~probable.~~

355
356 ~~(B) Those facilities in operation prior to adoption of these regulations may be required to come into~~
357 ~~compliance with these regulations upon a determination by the Department after consultation with the~~
358 ~~local governing body having jurisdiction that such facilities are causing impairment of existing or~~
359 ~~future use of surface water or ground water.~~

360
361 ~~12.2—**APPLICATION INFORMATION ALTERNATIVES** For the purposes of this Section 12 only~~
362 ~~as applied to the disposal of water treatment plant sludge, a person who disposes of water treatment~~
363 ~~plant sludge, receives water treatment plant sludge for disposal or permits water treatment plant~~
364 ~~sludge to be disposed of on any facility or property which he operates or possesses shall also comply~~
365 ~~with the following modifications to Sections 2 and 3 of these regulations:~~

366
367 ~~12.2.1 If the total alpha activity of the sludge exceeds 40 picocuries per gram of dry sludge, the~~
368 ~~sludge generator shall contact the Department's Radiation Control Division for further disposal~~
369 ~~guidance.~~

370
371 ~~12.2.2 A facility that operated as a water treatment sludge landfill shall: provide compacted fill~~
372 ~~material; provide adequate cover with suitable material; provide surface drainage designed to prevent~~

373 ~~ponding of water, wind erosion; prevent water and air pollution; and upon being filled, shall be left in a~~
374 ~~condition of orderliness and aesthetic appearance capable of blending with the surrounding area. In~~
375 ~~the operation of such a site and facility, the sludges shall be distributed in the smallest area~~
376 ~~consistent with handling traffic to be unloaded and shall be placed in the most dense volume~~
377 ~~practicable.~~

378
379 ~~12.2.3 Adequate fencing, natural barriers or other security measures to preclude public entry shall~~
380 ~~extend around the entire perimeter of the facility and shall include a lockable gate or gates.~~

381
382 ~~12.2.4 All ground water monitoring points shall be installed in accordance with applicable rules and~~
383 ~~regulations of the "Water Well and Pump Installation Contractor's Act," Title 37, Article 91, Part 1,~~
384 ~~CRS 1973 as amended. The facility operator shall be responsible for conducting a program of~~
385 ~~ground water sampling to document and monitor the water quality in such wells.~~

386
387 ~~12.2.5 Ground water quality concentrations shall be monitored regularly, as deemed necessary by~~
388 ~~the Department on a site specific basis.~~

389
390 ~~12.2.6 The type and quantity of material to be used as intermediate cover shall be identified in the~~
391 ~~engineering design and operations report of each water treatment plant sludge facility.~~

392
393 ~~12.2.7 The following information shall be provided in the engineering design and operations report of~~
394 ~~each water treatment plant sludge facility: the type and quantity of material that will be required for~~
395 ~~use as a liner, if a liner is required; and the type and quantity of material that will be required for use~~
396 ~~as final cover, including its compaction density, moisture content specifications and the design~~
397 ~~permeability.~~

398
399 ~~12.2.8 Maps and plans, drawn to a convenient common scale, showing the location and depth of cut~~
400 ~~for liners (if required), shall be submitted as part of the engineering design and operations report.~~

401
402 ~~12.2.9 Maps and plans, drawn to a convenient common scale, showing the intermediate and final~~
403 ~~cover, shall be submitted as part of the engineering design and operations report.~~

404
405 ~~12.2.10 Maps and plans, drawn to a convenient common scale, showing the location of all proposed~~
406 ~~monitoring points for surface water and ground water, shall be submitted as part of the engineering~~
407 ~~design and operations report.~~

408
409 ~~12.2.11 Construction details for all proposed monitoring points for surface water stations and ground~~
410 ~~water monitoring wells shall be submitted as part of the engineering design and operations report.~~

411
412 ~~12.2.12 The daily operating hours of the facility, the frequency of operation including the number of~~
413 ~~days per month and the number of months per year, the daily volume in cubic yards to be received on~~
414 ~~operating days, and the expected life of the site shall be included in the engineering design and~~
415 ~~operations report.~~

416
417 ~~12.2.13 The engineering design and operations report shall specify the systems of records to be~~
418 ~~maintained documenting incoming waste volumes, water quality monitoring results, as built~~
419 ~~construction details and variations from approved operating procedures.~~

420
421 ~~12.2.14 The amounts and sources of water to be used on site for the control of nuisance conditions,~~
422 ~~construction purposes, and personnel use shall be identified in the engineering design and operations~~
423 ~~report.~~

424

425 ~~12.2.15 Provisions for the monitoring of ground water and surface water after closure shall be~~
426 ~~identified in the engineering design and operations report.~~

427
428 ~~**12.3 — SLUDGE ACCEPTANCE CRITERIA** In addition to compliance with Sections 1 through 3 of~~
429 ~~these regulations, a person who disposes of water treatment plant sludge, receives water treatment~~
430 ~~plant sludge for disposal or permits water treatment plant sludge to be disposed of on any facility or~~
431 ~~property which he operates or possesses shall also comply with the following:~~

432
433 ~~12.3.1 Facilities shall not accept water treatment plant sludges containing any free liquids. U.S.~~
434 ~~Environmental Protection Agency laboratory method 9095, the "Paint Filter Liquids Test", shall be~~
435 ~~used to determine compliance with the requirements of this subsection.~~

436
437 ~~12.3.2 Facilities shall not accept water treatment sludges having a pH less than 6.0 standard units.~~

438
439 ~~12.3.3 No water treatment plant sludge disposal facility shall accept waste of any other kind without~~
440 ~~approval from the County Board of Commissioners or City governing body and the Department.~~

441
442
443 **11) Section 14 is amended by adding subsection 14.4.9 (TENORM Requirements**
444 **for Compost Facilities) to read as follows:**

445
446
447 **SECTION 14**

448
449 **COMPOSTING**

450
451 *****

452 **14.4 – CLASS III COMPOSTING FACILITIES**

453
454 *****

455
456 **14.4.9 TENORM Requirements for Compost Facilities**

457
458 Facilities shall comply with Section 2.1.2(C)(5) of these regulations. Facilities that compost Non-Exempt
459 TENORM shall be registered and are subject to the following requirements and limitations, unless they
460 are in compliance with alternative non-exempt TENORM management and disposal requirements
461 approved by the Department under 6 CCR 1007-1, Part 20.9 and incorporated into the site EDOP:

462
463 A. TENORM registrants per 6 CCR 1007-1, Part 20 may accept and/or process feedstock materials
464 that contain or are contaminated at concentrations, excluding natural background, greater than 5
465 pCi/g but not in excess of 50 pCi/g each in dry weight of Radium-226, Radium-228, Lead-210, and
466 Polonium-210.

467
468 B. Commercial composting facility activities shall be in accordance with 6 CCR 1007-2 Part 1 Section
469 14.

470
471 1. Prior to accepting any non-exempt TENORM feedstock materials for composting, registrants
472 shall obtain Department approval of a new or revised Engineering Design and Operations Plan
473 that addresses TENORM constituents in:

474
475 a. the description of feedstocks;

- 476 b. the waste characterization plan;
477 c. the evaluation of potential impacts to existing surface water and groundwater quality;
478 d. the groundwater monitoring plan; and
479 e. the compost sampling and testing description.
480

481 **C. Sale or Distribution.**

482
483 1. Finished compost shall be characterized for concentrations of TENORM radionuclides prior to
484 sale or distribution.

485
486 2. Characterization, including sampling and analysis, shall be performed using appropriate and
487 standard methods such as EPA SW-846 or equivalent alternative methods recognized by the
488 Department.

489
490 3. Characterization shall be done initially on finished compost and thereafter at the following
491 frequencies based on dry short tons per year (dst/y) produced:

- 492
493 a. Once per year for less than 319 dst/y.
494 b. Once per quarter for greater than 319 but less than 1,650 dst/y.
495 c. Once per two months for greater than 1,650 but less than 16,500 dst/y.
496 d. Once per month for greater than 16,500 dst/y.
497 e. If feedstocks change, the initial characterization shall be repeated.
498

499 4. Registrants must ensure that concentrations of TENORM radionuclides in finished compost to
500 be sold or distributed for off-site use shall not exceed 5 pCi/g for any TENORM constituent
501 (Radium-226, Radium-228, Lead-210, and Polonium-210).
502

503 5. Records of characterization data demonstrating compliance with the 5 pCi/g standard shall be
504 maintained for inspection by the Department for no less than 5 years after the materials have
505 been distributed.

506
507 6. Compost that meets the 5 pCi/g standard is acceptable for unrestricted use, provided that other
508 finished compost criteria specified in Section 14.6 are met.
509

510 **D. Finished Compost containing Non-Exempt TENORM.**

511
512 Finished compost that exceeds the 5 pCi/g standard of 14.4.9.C.4. is considered to contain non-
513 exempt TENORM. Finished Compost containing Non-Exempt TENORM shall be:
514

515 1. Transferred only to a recipient registered with the Department in accordance with 6 CCR 1007-
516 1, Part 20 for use or disposal;

517
518 2. Reintroduced into the compost process; or

519
520 3. Transferred to an individual authorized to receive such material under terms of a specific
521 radioactive materials license or equivalent licensing document, issued by the Department, NRC
522 or any Agreement State, or to any person otherwise authorized to receive such material by the
523 Federal Government or any agency thereof, the Department, or an Agreement State.
524

525 **E. Final closure.**

526
527 The compost facility shall not be closed and released for unrestricted use until:

528 1. All registered TENORM materials must be disposed or transferred in accordance with paragraph D
529 of this section 14.4.9; and

531 2. The owner or operator shall conduct radiological characterization of the facility to ensure that:

533 a. Any radionuclide concentration in soil, adjacent to or within the facility boundary, does not
534 exceed the limitation specified in Table 20-1 of 6 CCR 1007-1, Part 20. If any exceedance is
535 found, the facility shall be remediated until the limits in Table 20-1 are met.

537 b. Radionuclide concentrations in groundwater do not exceed 5 pCi/L for Radium-226 plus
538 Radium-228 and 5 pCi/L for Lead-210 plus Polonium-210; or the statewide standards for
539 radioactive materials established by the Water Quality Control Commission in accordance with
540 the Water Quality Control Act, whichever is more restrictive. If any exceedance is found, the
541 facility shall conduct groundwater remediation until the above limits are met.

543
544
545 **12) Section 17 is amended by adding subparagraph (C)(6) to section 17.3.3 to**
546 **read as follows:**

547 SECTION 17

548 COMMERCIAL EXPLORATION & PRODUCTION WASTE IMPOUNDMENTS

549 17.3 DESIGN, CONSTRUCTION AND OPERATION REQUIREMENTS

550 17.3.3 Operating Requirements

551 17.3.3(C) Waste Characterization:

552
553
554
555
556
557 17.3.3(C)(1) The owner or operator of commercial EP waste disposal facilities shall develop and
558 implement waste analysis procedures to ensure that only EP waste is disposed of at the facility.
559 The disposal of waste streams different from those originally approved shall constitute a
560 significant change in operation and require an approval by the Department and the local
561 governing authority prior to acceptance at the facility. An amendment to the facility's certificate of
562 designation may be required.

563
564
565
566
567 17.3.3(C)(2) The owner or operator of each commercial EP waste impoundment facility shall
568 initially profile and then conduct annual testing on each waste stream entering the facility,
569 including, at a minimum, waste from each well and/or each tank battery and each drilling location,
570 to demonstrate conformance with the original analyses. Each facility must also ensure that EP
571 waste generators using the facility notify the facility when there has been a change in their
572 processes or waste composition.

573
574
575 17.3.3(C)(3) The owner or operator of each EP waste disposal facility shall analyze at least one
576 sample of the contents of each impoundment annually for the suite of analytes included in
577 Appendix II of the Solid Waste Regulations. Such analysis shall be performed using appropriate
578 methods as specified in the site-wide monitoring plan to provide an accurate representation of

579 constituents and concentration levels found in the waste. If the impounded wastes are subject to
580 stratification, a separate sample shall be taken from each representative level, including settled
581 sludge and oil or other surface accumulation.
582

583 17.3.3(C)(4) Annual testing of unannounced grab samples shall be taken from random vehicles
584 entering the facility and analyses conducted for the original or approved amended list of
585 parameters. If any waste is found to differ from the original analysis, the Department and local
586 governing body having jurisdiction shall be notified in writing within seven (7) calendar days, and
587 a request to modify the design and operation plan submitted to the Department and local
588 governing authority for review and approval prior to continuing acceptance the identified waste
589 stream.
590

591 17.3.3(C)(5) EP waste disposal facilities shall not receive hazardous waste and will conduct
592 waste profiling in accordance with Section 2 and their approved waste characterization plan (as
593 amended to conform to this Section 17).
594

595 17.3.3(C)(6) EP waste disposal facilities must also comply with Section 2.1.2 (C)(5) provisions
596 related to TENORM waste.
597

598 *****
599
600

601 **13) Section 17 is amended by adding subsection 17.5.8 (Closure Provisions**
602 **Related to TENORM) to read as follows:**
603

604
605 **SECTION 17**
606

607 **COMMERCIAL EXPLORATION & PRODUCTION WASTE IMPOUNDMENTS**
608

609 **17.5 CLOSURE**
610

611 *****
612
613

614 **17.5.8 Closure Provisions Related to TENORM**
615

616 The facility closure plan shall include a detailed site investigation and remediation if necessary, for
617 TENORM radionuclides. The closure plan shall be submitted to the Department for review and approval
618 at least sixty (60) days prior to closure. The closure plan shall address, but not be limited to:
619

620 A. Sampling and analysis to determine the extent of contamination in or compliance with
621 standards for soil, surface water, and groundwater;
622

623 B. Activities required to decommission and remove all equipment contaminated with TENORM
624 materials subject to Part 20 (may be inapplicable to disposal facilities, for registrants only);
625 and
626

627 C. Disposal of residual TENORM subject to Part 20.
628

629 Owners and operators of facilities where non-exempt TENORM was accepted during the life of the facility
630 or is identified as a result of the closure plan investigation shall be required to amend their closure plan
631 for the following provisions:

- 632
- 633 A. Facility access control;
- 634
- 635 B. Potential exposures to TENORM during remedial activities including either a radiological
636 dose estimate demonstrating that no individual will exceed an annual dose of 100 millirem (1
637 millisievert) or information on the individuals authorized to perform such operations under
638 terms of a specific radioactive materials license or equivalent licensing document, issued by
639 the Department, NRC or any Agreement State;
- 640
- 641 C. Schedule for remedial and closure activities to be conducted and completed;
- 642
- 643 D. Post-closure monitoring for TENORM radionuclides if determined necessary by the
644 Department; and
- 645
- 646 E. Following closure of the waste management units covered at the facility, an environmental
647 covenant or restrictive notice must be placed on the facility property and shall include a
648 specific provision which requires that any future buildings, residential or commercial,
649 constructed on the permitted site post closure, require radon resistant construction, post
650 construction assessment and testing, and radon mitigation sufficient to meet any federal,
651 local, or Colorado standards on indoor radon concentrations. Alternatively, the environmental
652 covenant may prohibit construction of any buildings on the site. This paragraph does not
653 apply in cases where no environmental covenant would be required under 25-15-320(1),
654 C.R.S. **Note:** Closure of solid waste in place, irrespective of TENORM considerations, would
655 trigger the institutional control requirement.