



COGCC FORM INSTRUCTIONS

FORM 2A

WASTE MANAGEMENT PLAN

Document Control:

Created Date:	September 15, 2021
Document Owner:	OGLA and EPS Staff

Rule Citation(s):

Rule 304.c.(11) Waste Management Plan. A waste management plan consistent with the requirements of Rule 905.a.(4).

Rule 905.a.(4) Waste Management Plans. Each Operator that generates Exploration and Production, or (“E&P”) Waste as a result of their operations will prepare a comprehensive waste management plan detailing how the Operator will treat, characterize, manage, store, dispose, and transport all types of waste generated. The Director may require a waste management plan to include a description of proposed haul routes, including any applicable Local Government traffic requirements.

- A. Operators will submit their waste management plans with their Form 2A, Oil and Gas Location Assessment (Form 2A), pursuant to Rule 304.c.(11).
- B. Operators will evaluate opportunities for reuse and recycling and may include a reuse and recycling plan, as described in Rule 905.a.(3) above, as part of the waste management plan.
- C. If an Operator seeks to change its E&P Waste management practice, the Operator will update its waste management plan by submitting a revised waste management plan for the Director’s approval or denial on a Form 4, Sundry Notice (Form 4).

Purpose of Attachment

Proper management of wastes generated during construction, drilling, completion, and production operations at new or existing Oil and Gas Locations is imperative for the protection of public health, safety, welfare, the environment, and wildlife resources. The purpose of the Waste Management Plan is 1) to demonstrate how the Operator will safely manage all types of waste, including E&P Waste, during each phase of operations, and 2) to evaluate opportunities to reuse and recycle water (in concert with the Rule 304.c.(18) Water Plan), in order to avoid, minimize, and mitigate potential impacts before they occur.

WASTE MANAGEMENT PLAN GUIDANCE

Waste Management Plan Requirements List

A Form 2A requires an attached site-specific Waste Management Plan pursuant to Rule 905.a.(4) that demonstrates compliance with the Commission's Rules for the operation of the proposed Oil and Gas Location in a manner that is protective of and minimizes adverse impacts to public health, safety, welfare, the environment, and wildlife resources. A revised Waste Management Plan may be submitted on a Form 4 to request approval of any changes needed to a previously approved plan.

1. The Waste Management Plan will be organized into sections to discuss management of each waste stream, and by operational phases, as applicable to the location:
 - a. Construction;
 - b. Drilling;
 - c. Completions;
 - d. Flowback;
 - e. Production;
 - f. Spill response and remediation;
 - g. Facility decommissioning; and
 - h. Plugging and abandonment.

2. For each operational phase listed above, Operators will:
 - a. Provide a descriptive list of all waste streams anticipated to be generated at the location. **For each waste stream identified, include:**
 - i. The name or type of waste (e.g., oil-based drill cuttings, water-based bentonitic drilling fluids, produced water, trash, tank bottoms);
 - ii. The regulatory classification of the waste (e.g., E&P Waste, non-E&P Waste, hazardous waste, non-hazardous solid waste);
 - iii. A general description of the process(es) that generated the waste;
 - iv. An estimate of expected volumes or amounts of waste generated, and a frequency and duration of the waste stream generation;
 - v. Any physical or chemical hazards the waste stream may pose, and whether or not field testing or environmental laboratory analyses are needed to further assess these hazards;
 - vi. A detailed description of all intended *onsite* treatment, storage, and disposal, including the use of any pits;
 - vii. A detailed description of the placement and use of storage areas, and treatment methods; and

WASTE MANAGEMENT PLAN GUIDANCE

- viii. An evaluation of applicable surface owner and lease agreement conditions pertaining to waste treatment, storage, and disposal.
- b. For wastes disposed onsite, reused, recycled, and for remediation, describe how the Operator will comply with Table 915-1 by detailing:
 - i. Methods for adequate collection of representative waste profile samples;
 - ii. The number of samples needed for waste characterization;
 - iii. What analyses will be run and what analytical methods will be used; and
 - iv. A certification that the analyses will be run by an accredited or certified environmental laboratory and that proper field protocol will be employed during sampling.
- c. For E&P Waste being transported offsite¹, include:
 - i. A description of the Operator's recordkeeping system for all required transport records, including verification of where and for how long the records will be kept (see General Notes section, Rule 905.b.(3));
 - ii. A description of all intended *offsite* treatment, storage, and disposal methods;
 - iii. A description of haul routes; the plan may reference the Access Road Map so long as haul routes are clearly identified on that map. Additional information can be found in Rule 905.b;
 - iv. Information about the receiving facility (e.g., name and location of spread field or name of disposal well operator and location of disposal well facility); and
 - v. A description of the methodology for collecting waste characterization and profile samples for selected management or disposal of waste if required by the disposal facility.
3. For all waste streams, provide an evaluation of opportunities to reduce the volume generated, reduce toxicity, put to a beneficial use, reuse, or recycle.
4. Provide a contingency plan for managing waste streams in the event the E&P Waste exemption no longer applies to a given waste stream.
5. Provide a list of Best Management Practices ("BMPs") for how wastes will be managed, treated, stored, disposed, and transported. The BMPs should state how the operator intends to comply with COGCC Rules, include site-specific waste management practices, Operator's selected disposal options, and summarize operational points discussed within the plan. These BMPs will be

¹ See the Commercial Offsite E&P Waste Disposal section below for a more detailed discussion

WASTE MANAGEMENT PLAN GUIDANCE

reviewed by Oil and Gas Location Assessment (OGLA) staff and incorporated into the Form 2A as applicable.

General Notes

The following notes provide additional guidance on the Waste Management Plan:

1. The Waste Management Plan will present a clear, concise description of how all waste will be managed on location, transported off location, and disposed. It does not need to be a lengthy document.
2. Avoid simply restating the Rules in the Waste Management Plan.
3. If the same management or disposal option is selected for multiple waste streams, these wastes can be listed under that heading.
4. Additional site-specific waste management details, tables, process flow diagrams, site diagrams showing where wastes will be stored on specific locations, or lists of contractors, transporters, and disposal facilities that are subject to change may be included as appendices to easily update the plan.
5. For laboratory analysis: the Operator will request the laboratory analyze waste samples for the Table 915-1 parameters, using appropriate analytical methods and detection limits to demonstrate that the waste meets narrative and/or numeric standards in Table 915-1 and Water Quality Control Commission, and Colorado Department of Public Health and Environment - Water Quality Control Division, (“CDPHE-WQCD”) Regulations as incorporated by reference in Rule 901.b.
6. Waste management options that include beneficial use, re-use, recycling, disposal on location, or at a Form 28, Centralized E&P Waste Management Facility (“CE&PWF”) Permit (Form 28), require quality assurance and quality control (QA/QC) measures to demonstrate compliance with COGCC 900 Series Rules and Table 915-1 concentrations or levels.
7. The Operator may transport E&P Waste for treatment at a Director-approved CE&PWF pursuant to Rule 907. The Operator will comply with all rules and conditions of approval for the CE&PWF and completing the Form 28 for treatment or disposal.
8. **Rule 905.b.(3)** - In accordance with Rule 905.b.(3), waste transportation may require use of bills of lading, load tickets, waste manifests, or similar records to document the volumes, weight, and type of waste being transported. These records may require an Operator’s representative signature as generator in addition to signatures of the truck driver and a representative at the disposal facility.

WASTE MANAGEMENT PLAN GUIDANCE

Commercial Offsite E&P Waste Disposal

Commercial landfills or disposal facilities may accept E&P Waste based on an Operator's knowledge of process and a description of the waste, or may require the Operator provide laboratory analytical results of waste samples to characterize or profile the waste so the landfill can determine if they will accept the waste. A commercial landfill may require waste characterization analyses from an accredited environmental laboratory be provided prior to accepting the waste. Note that these analyses may be the same or differ from those under Table 915-1, and may include additional analyses, or analytical methods not required under Table 915-1. The disposal facility may require the waste be tested for flammability/ignitability, paint filter, corrosivity, reactivity, or radioactivity.

The landfill may not require analyses of analytes or parameters listed in Table 915-1 to be submitted. For example, Table 915-1 requires analysis of total metal (i.e., arsenic, barium, cadmium, etc.) concentrations whereas the landfill may require toxicity characteristic leachate procedure ("TCLP") results in lieu of total metal concentrations or in addition to these results. The Operator should coordinate with the landfill prior to sample collection and analysis.

The landfill or disposal facility may allow an Operator to create waste profiles that allow one-time disposal of the waste, or disposal on an ongoing basis, provided that the process generating the waste has not changed or based on initial or periodic waste sample laboratory results. The Operator should consult with the landfill to determine what is needed to dispose of the E&P waste at a particular commercial facility.

E&P Waste Beneficial Use, Reuse, or Recycling Options

The COGCC encourages beneficial use, reuse, and recycling of E&P Wastes as long as the Operator ensures compliance with the concentration levels in Table 915-1, and WQCC Regulation 41 for numeric and narrative groundwater quality standards and classifications as incorporated by reference in Rule 901.b.

Additional information can be found in the following COGCC Guidance documents:

- 905.a.(3) - Rule 905.a.(3) Guidance (Beneficial Use, Reuse, Recycling);
- 615.e.1 - Model Sampling and Analysis Plan;
- 913.b.(5)B i-v - Remediation Standards;
- 915 - Concentrations and Sampling for Soil and Groundwater; and
- 915.e.(2) - Soil Sampling and Analysis.

WASTE MANAGEMENT PLAN GUIDANCE

Waste Classifications and Descriptions

Exploration & Production Wastes (“E&P Wastes”) are uniquely associated with and intrinsic to oil and gas exploration, development, and production operations, both in the field and in processes that remove impurities from produced hydrocarbon substances. E&P Wastes may contain constituents that are toxic, carcinogenic, radioactive, irritants, or that are flammable or explosive. E&P Wastes are exempt from regulation as hazardous waste under the United States Environmental Protection Agency (“EPA”) Subtitle C of the Resource Conservation and Recovery Act (“RCRA”), but are generally subject to regulation under Subtitle D of RCRA and state regulations, such as the COGCC 900 Series Rules.

Examples of E&P Wastes include, but are not limited to, used drilling fluids, drilling muds, drill cuttings, oily wastes (see definition), used stimulation or workover fluids, used treating chemicals, pipe scale, pigging wastes from non-transportation pipelines, and produced water or brine. Natural gas plant treatment residues, such as used natural gas sweetening media, spent filtration media, filters, dehydration media, etc., are also examples of E&P Wastes. Information on E&P Wastes can be referenced in the EPA guidance linked on COGCC’s website: [Exemption of Oil and Gas Exploration and Production Wastes from Federal Hazardous Waste Regulations \(state.co.us\)](https://www.state.co.us/cogcc/exemption)

Although not regulated as a hazardous waste, E&P Waste may contain naturally occurring hazardous substances (e.g., benzene, benzo(a)pyrene, arsenic, etc.), or listed hazardous constituents (e.g., barium, diesel, methanol, etc.) added during drilling, completion, or production activities, or the waste may exhibit hazardous characteristics such as flammability, corrosivity, or reactivity.

Non-E&P Waste: There are certain wastes that may be associated with oil and gas operations that do not meet the 100 Series definition of E&P Waste and are regulated as solid or hazardous wastes under federal or state regulations by the EPA or the Colorado Department of Public Health and Environment (“CDPHE”) Hazardous Materials Waste Management Division HMWMD”). Non-E&P Waste is addressed in Rule 906. The Operator is responsible for properly identifying and disposing of all wastes pursuant to applicable local, state, and federal regulations.

Wastes resulting from cleanup of unused chemicals spilled on location, or chemicals stored but not yet used in oil and gas operations, are not E&P Waste. Fuel or lubricant spills (i.e. refined petroleum products) from vehicles or equipment are not E&P Waste. Non-E&P Waste mixed with E&P Waste may result in the entire waste stream being

WASTE MANAGEMENT PLAN GUIDANCE

regulated as a non-E&P Waste. It is the Operator's responsibility to determine if a waste is a non-E&P Waste or an E&P Waste. This determination may be based on knowledge of process, sampling and analysis, and review of applicable regulations for solid waste, E&P Waste, and RCRA hazardous waste.

The CDPHE Solid and Hazardous Waste Commission ("SHWC") regulations are incorporated by reference, in Rule 901.b. An Operator must determine if a non-E&P Waste is a hazardous waste or a non-hazardous waste and manage the waste accordingly. An Operator must comply with all hazardous waste treatment, storage, and disposal requirements in the most current version of the SHWC Hazardous Waste Rules.

Definition

EXPLORATION AND PRODUCTION WASTE (E&P WASTE) shall mean those wastes associated with operations to locate or remove oil or gas from the ground or to remove impurities from such substances and which are uniquely associated with and intrinsic to oil and gas exploration, development, or production operations that are exempt from regulation under Subtitle C of the Resource Conservation and Recovery Act (RCRA), 42 USC § 6921, et seq. For natural gas, primary field operations include those production-related activities at or near the wellhead and at the gas plant, (regardless of whether or not the gas plant is at or near the wellhead), but prior to transport of the natural gas from the gas plant to market. In addition, uniquely associated wastes derived from the production stream along the gas plant feeder pipelines are considered E&P Wastes, even if a change of custody in the natural gas has occurred between the wellhead and the gas plant. In addition, wastes uniquely associated with the operations to recover natural gas from underground storage fields are considered to be E&P Waste.