



COGCC OPERATOR GUIDANCE

RULE 915.E.(2).C. - SOIL SAMPLING AND ANALYSIS - SAMPLE ANALYSIS

Document Control:

Created Date:	April 27, 2021
Last Updated Date:	June 2, 2021
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Rule Citation: Rule 915.e.(2).C. - Sample Analysis

Operators will analyze soil samples for contaminants of concern listed in Table 915-1 as appropriate to assess the impact or confirm Remediation. If an Operator believes it is appropriate to modify the list of contaminants of concern, the Operator will submit, and obtain the Director's approval of, a modified list of contaminants of concern through a Form 19, or Form 27, as applicable. The list will be based on site specific E&P Waste profile and process knowledge. Operators will analyze samples for additional contaminants of concern upon the Director's request.

Purpose of Rule

Complete characterization of a Spill or Release is important to ensure protection of air, water, soil, and biological resources. However, Operators may demonstrate to the Director that it is appropriate to change the list of contaminants of concern. The Operator must demonstrate through a combination of process knowledge *and* Exploration and Production Waste (E&P Waste) profiling that a specific contaminant of concern is not present.

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E&P Waste Spills and Releases will broadly fall into two categories of liquid wastes: hydrocarbons (crude oil and condensate), and produced water.

- For Spills and Releases of hydrocarbons only, where produced water is not known to be Spilled, Operators will analyze for the Table 915-1 Organic Compounds in Soils and Soil TPH (C6-C36).
- For Spills and Releases that are known to contain produced water, may contain produced water, including commingled hydrocarbon and produced water Spills, or historical Releases where it is unknown whether the Released fluid was hydrocarbons, produced water, or a mixture Operators will analyze for the Table

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915-1 Organic Compounds in Soils, Soil TPH (C6-C36), Soil Suitability for Reclamation, and Metals in Soils.

If Operator decides to pursue Director Approval for reduction in the list of contaminants of concern, Operator will submit laboratory analytical results from one or more soil samples of the most impacted material discovered during the initial phase of the Spill or Release investigation.

- Operators should be prepared to collect these samples from material directly impacted from hydrocarbons and/or produced water at the source area of the Spill or Release during the initial response.
- Discrete grab samples of the most impacted material must be used to demonstrate the contaminants of concern present in the impacted material. The number of soil samples required for adequate waste characterization will depend on the nature (volume, vertical and horizontal extent, soil type, nearby receptors) of the Spill or Release.
- Operator will submit waste characterization sample results with a proposed list of contaminants of concern that will apply to the subject Spill or Release for Director Review on a Form 19, Spill Report (Form 19) or a Form 27, Site Investigation and Remediation Workplan (Form 27) as required by Rule 915.e.(2).C.

The Spill or Release investigation and Remediation will be subject to all contaminants of concern as described above until a reduction to the contaminants of concern list is formally approved by the Director.

The Director will review Operator's request for a reduction of contaminants of concern on a site specific basis. However, in general Operator can expect that the Director will require continued analysis for all contaminants of concern detected in the waste characterization sample(s), regardless of whether the contaminant is detected at a concentration level above or below the Residential and Pathway to Groundwater Soil Screening Levels.

Some characterization samples with high concentrations of hydrocarbons may require dilution at the laboratory. In these cases, if the laboratory analytical report contains "non-detect" for samples with a dilution factor that causes the reporting limit to be higher than the Table 915-1 Soil Screening Levels, the Director will require continued analysis for those contaminants.

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General Notes

Optional Fluid Characterization: Operator may choose to characterize the fluids that were Spilled or Released, such as produced water or hydrocarbon fluids, at an individual Well to define potential contaminants of concern at a recent Spill or Release.

Optional Field or Basin Characterization: If an Operator chooses to characterize the E&P Waste on a Field or basin scale, Operator should contact the Area EPS or Environmental Supervisor to develop a sampling and analysis plan that the Director will agree to in advance. Basin or Field scale characterizations will necessarily vary in scope across Formations and across the State.

Reference: Excerpt From Page 163 of the *Statement of Basis, Specific Statutory Authority, and Purpose, New Rules and Amendments to Current Rules of the Colorado Oil and Gas Conservation Commission, 2 C.C.R. § 404-1, Cause No. 1R Docket No. 200600155 800/900/1200 Mission Change, Cumulative Impacts, and Alternative Location Analysis Rulemaking*, regarding use of abbreviated list of contaminants of concern:

“In Rule 915.e.(2).C, the Commission continued to allow operators to request that the Director modify the list of soil *contaminants* of concern listed on Table 915-1, based on site-specific E&P Waste profiles and process knowledge. The Commission intends that the Director may only approve a change to the list of *contaminants* of concern in Table 915-1 if doing so is equally or more protective of air, water, soil, and biological resources. To obtain approval of an alternate standard pursuant to Rule 915.e.(2).C, the Commission intends that an operator would need to demonstrate that a specific *contaminant* of concern is not present or that there is other reason to believe that a specific *contaminant* should not be analyzed at a given location. Rule 915.e.(2).C, which governs requests for alternative *contaminants*, is distinct from Rule 913.h.(2), which governs alternative *concentrations*.”