

AP 22-9-695 Pit

Facility ID 279360 | Location ID 335753

909.j.(6) Alternative Sampling Plan



A. INTRODUCTION

TEP Rocky Mountain LLC (“TEP”) has prepared this Alternative Sampling Plan for director approval per COGCC Rule 909.j.(6) for the AP 22-9-695 Pit. TEP has extensive water reuse and recycle infrastructure to utilize produced water from approximately 7,000 natural gas wells in the Piceance Basin for hydraulic fracturing of new natural gas wells, primarily in Garfield and Rio Blanco Counties. Twenty-eight (28) lined produced water pits are part of this infrastructure. Due to the very large number of individual actively producing wells it is impractical to sample produced water from each well. However, since proximate wells are producing from the same, or similar, formations, collecting and analyzing produced water from the composite inlet stream of each lined pit will provide representative analytical results.

B. LOCATION DESCRIPTION

The AP 22-9-695 facility is a single-well pit located within Section 9, Township 6 South, Range 95 West in Garfield County (facility ID 279360, location ID 335753, lat. 39.540473, long. -108.007232). A facility diagram is attached for reference. The facility consists of a 3,952 barrel capacity lined produced water pit, natural gas wells, three-phase production separators, and produced water & oil storage tanks.

C. PRODUCED WATER SAMPLING PROTOCOL

In accord with COGCC Rule 909.j.(1) produced water samples will be collected from the inlet produced water pipeline entering the pit and analyzed for the properties and constituents listed below. A list of well pads that send produced water to the AP 22-9-695 Pit is included in Section D (“Well List”) below.

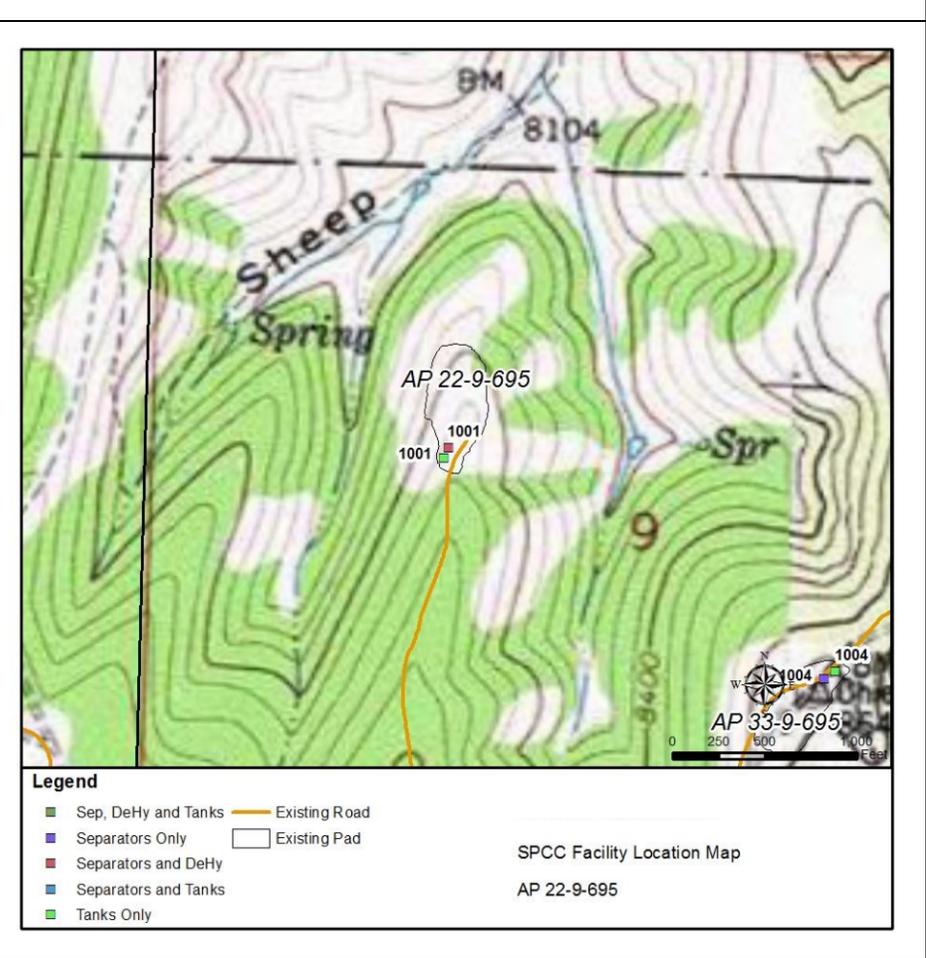
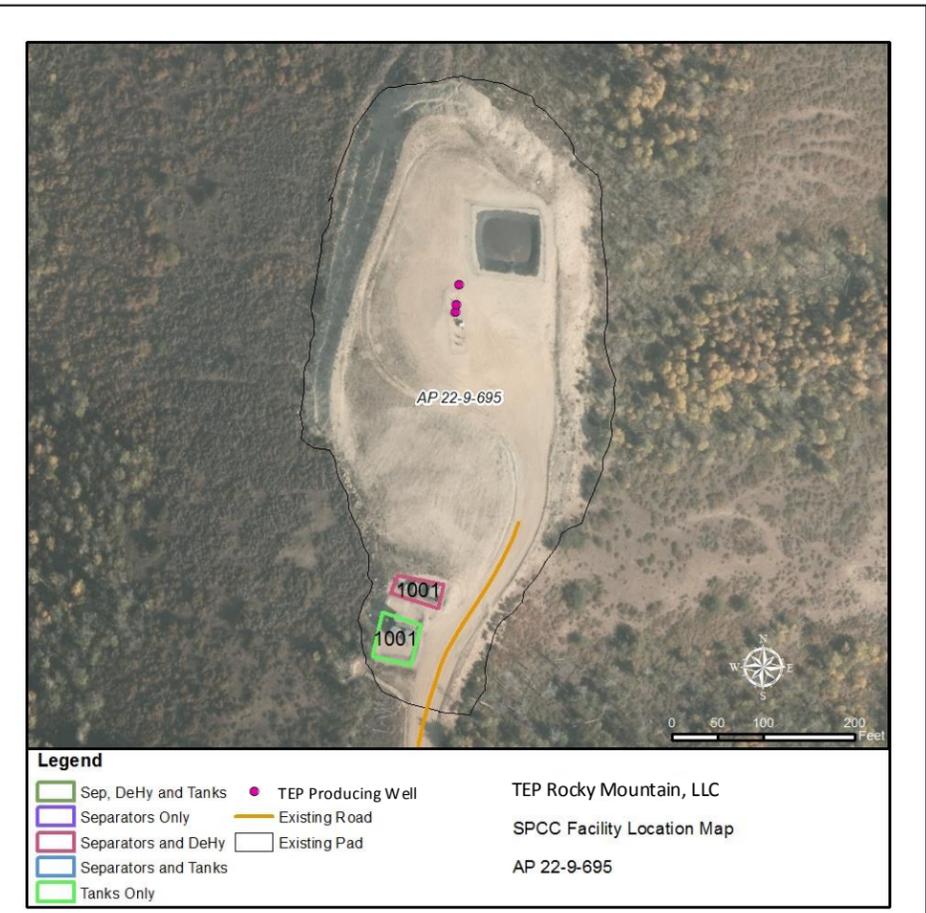
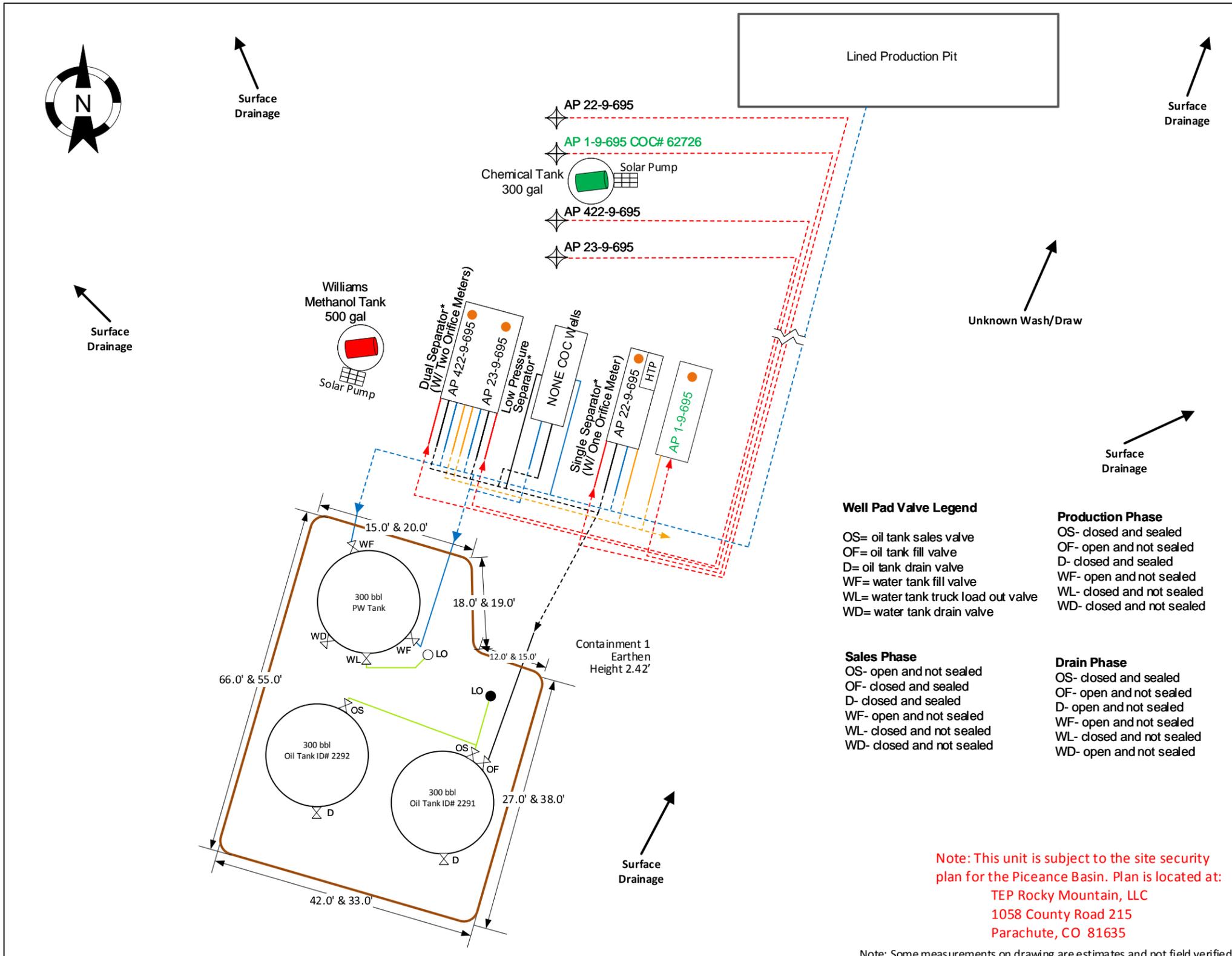
- pH
- Specific conductance
- Total dissolved and suspended solids (TDS and TSS)
- Alkalinity (total, bicarbonate, and carbonate as CaCO₃)
- Major anions (bromide, chloride, fluoride, sulfate, nitrate and nitrite as N, and phosphorus)
- Major cations (calcium, iron, magnesium, manganese, potassium, and sodium)
- Other elements (barium, boron, selenium, and strontium)
- Naphthalene
- Total petroleum hydrocarbons (“TPH”) as total volatile hydrocarbons (C₆ to C₁₀) and total extractable hydrocarbons (C₁₀ to C₃₆)
- BTEX compounds (benzene, toluene, ethylbenzene, and xylenes)
- Radium (226Ra and 228Ra)

In accord with COGCC Rule 909.j.(3) analytical results will be submitted to the COGCC via Form 43.

D. WELL LIST

Produced water from the wells listed below are sent to the AP 22-9-695 Pit via on-site flowlines:

Well Pad Name	Well Pad Location ID	Well API	Formation 1	Formation 2
AP 22-9-695	335753	05-045-06715	WSTC	-----
AP 22-9-695	335753	05-045-11019	WFCM	-----
AP 22-9-695	335753	05-045-14042	WFCM	WMFK
AP 22-9-695	335753	05-045-14043	WFCM	-----



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 DRAWN BY: TG
 DATE: 12/12/18
 SCALE: NONE

Facility Diagram
 TEP Rocky Mountain, LLC
 North Grand Valley - AP 22-9-695
 Latitude: 39.540473 Longitude: -108.007232
 SE/NW, Sec.9, T6S, R95W
 COC# 62726
 Garfield County, CO

Note: Some measurements on drawing are estimates and not field verified.

Legend

Water Dump Line	Oil Dump Line 4	Tank Heater	Thermal Electrical Generator
Flowline	Gas Sales Line	Well Head	HTU = Heat Trace Unit
Oil Dump Line 1	Unload Line	Drip Tank	HTP = Heat Trace Pump
Oil Dump Line 2	Overflow Line	Valve	
Oil Dump Line 3	Vent Line	Load Out Valve	
	Manifold Line	Gas Facility Measurement Point	
	Load Line		

Note: Dotted lined denote underground pipes. All lines denote 2" steel pipe, unless otherwise noted. Valves on separator not shown.