

Waste Management Plan – 304.c.(11)

TR 32-28-597 Oil and Gas Location

Loc ID #324040

May 2023



INTRODUCTION

TEP Rocky Mountain LLC (“TEP”) has developed the following Waste Management Plan to address Exploration and Production (“E&P”) and other wastes related to its proposed operations on the existing TR 32-28-597 Pad (COGCC Loc ID: 324040). This plan provides an overview of methods TEP will use for managing waste materials as required by Colorado Oil and Gas Commission (“COGCC”) Rule 304.c.(11) and Rule 905.a.(4).

E&P waste is not regulated (i.e., exempt) as hazardous waste by the Environmental Protection Agency (EPA) (40 CFR 261) or by the COGCC. The COGCC regulates E&P waste in the State of Colorado. Both agencies publish a list of E&P exempt waste on their websites. To qualify as an E&P waste, the waste must be generated during the drilling, completion, or production operations. This waste must be managed (treated, stored, transported, and disposed of) in accordance with COGCC, County and municipal regulations, and land use codes and ordinances.

Non-E&P Waste are those that are not generated as part of Oil and Gas downhole operations and are generally classified as non-hazardous or hazardous. This waste must be managed in accordance with Colorado Department of Public Health and Environment (“CDPHE”) regulations, and County and Local landfill or waste disposal facility requirements.

The following documents, the general practices and procedures, TEP will use to manage the identified waste streams to be generated during development of the seventeen (17) proposed wells on the TR 32-28-597 pad.

SITE DESCRIPTION

The TR 32-28-597 Oil and Gas Development Plan (“TR 32-28-597 OGD”) is a 360-acre OGD consisting of 5.778-acres of Surface Lands and 360-acres of Mineral Lands located within W $\frac{1}{2}$ NW $\frac{1}{4}$, NW $\frac{1}{4}$ SW $\frac{1}{4}$, NE $\frac{1}{4}$, N $\frac{1}{2}$ SE $\frac{1}{4}$ of Section 28, Township 5 South, Range 97, 6th P.M., Garfield County, Colorado. The TR 32-28-597 OGD includes the re-construction of the existing TR 32-28-597 pad to support drilling, completion, and production operations for seventeen (17) proposed directionally drilled natural gas wells, upgrading small sections of the existing access entrances (north & south), and installation of associated pipeline infrastructure.

The TR 32-28-597 pad (COGCC Loc ID# 324040) is an existing Oil and Gas Location, with one (1) existing natural gas well, located within SW $\frac{1}{4}$ NE $\frac{1}{4}$ of Section 28, Township 5 South, Range 97 West, 6th P.M., within Garfield County, Colorado, on private land owned by Chevron USA Inc., which overlies private minerals. The Oil and Gas Location is located approximately 15.24 miles northwest of the Town of Parachute, Colorado. The land on which the pad is located is classified as non-crop land and rangeland. The seventeen (17) proposed wells planned for development on this location will be directionally drilled into the underlying Fee lease.

The existing 4.525-acres TR 32-28-597 pad will be reconstructed and expanded to a 5.778-acres footprint to support drilling and completion operations of the proposed directional wells. The long-term disturbance, or the disturbance required for long-term production operations, attributed to the TR 32-28-597 pad will be approximately 1.192-acres. All proposed disturbance will be located on private property.

A small portion of the existing TR 32-28-597 access road will be upgraded at both entrances to the pad (north and south side). The proposed access road upgrades associated with development of the proposed wells on the TR 32-28-597 pad will occur within the existing road disturbance area and will not create any new surface disturbance.

The existing 7.757-acres TR 34-16-597 pad will be utilized to support remote well completion operations associated with the seventeen (17) proposed wells on the TR 32-28-597 pad. The TR 34-16-597 pad will be reconstructed within the original footprint of the Oil and Gas Location. The TR 34-16-597 pad will be reclaimed back to the current production pad footprint (1.779-acres) after well completion operations associated with the proposed wells on the TR 32-28-597 pad have finished.

The proposed pipeline corridors associated with development of the proposed wells on the TR 32-28-597 pad will create approximately 0.134-acres of surface disturbance. Of the 0.134-acres of surface disturbance, approximately 0.025-acres would be considered existing surface disturbance (i.e. existing roads) and approximately 0.109-acres would be considered re-disturbance (i.e. reclaimed rights-of-way). The long-term disturbance attributed to the proposed pipeline following reclamation of the pipeline Right-of-Way will be approximately 0.025-acres (i.e. existing access road). All proposed surface disturbance associated with permanent pipeline installation would be located on private surface.

TEP would also need to install temporary surface pipelines between TR 32-28-597 pad and the TR 34-16-597 pad to support remote well completion operations. No ground disturbance activities are planned during installation or removal of the proposed temporary surface pipelines.

The total surface disturbance associated with the TR 32-28-597 OGDG and the associated support facilities is approximately 13.668-acres, all of which would be located on private surface and includes reconstruction and expansion of the TR 32-28-597 pad, installation of the proposed gas and water pipelines, and reconstruction of the TR 34-16-597 pad to support remote well completion operations. Of the 13.668-acres of disturbance, 12.416-acres will be within areas of existing disturbance or areas previously disturbed by development activities. Approximately ninety one percent (91%) of the total disturbance acreage will be on lands previously disturbed. The long-term disturbance, or disturbance remaining after interim reclamation, including support locations, will be approximately 2.996-acres.

Please see the Plan of Development attached to the Form 2A for a detailed breakdown of disturbance acreage for all project components associated with the TR 32-28-597 OGDG.

DEVELOPMENT PHASE AND POTENTIAL WASTE STREAMS

Development of the proposed Oil and Gas Location and the proposed natural gas wells will generally occur in the following order of operations:

- 1) Construction operations;
- 2) Drilling operations;
- 3) Well completion operations;
- 4) Flowback operations;
- 5) Production operations;
- 6) Interim reclamation activities;
- 7) Spill response and remediation;
- 8) Plugging and abandonment; and
- 9) Final site reclamation

The potential waste streams identified for operations at the TR 32-28-597 pad are listed in Table 1, Potential Waste Streams by Operations Phase. This table identifies the types of waste streams likely to be generated during development of the proposed wells and the operational phase when the waste is likely to be generated.

Table 1, Potential Waste Streams by Operations Phase.

Potential Waste Streams	Operational Phase	Description
Drilling Fluids	Drilling Operations	Water-based circulating fluid/mud used in drilling operations to clean and condition the hole and to counterbalance formation pressure.
Drill Cuttings	Drilling Operations	Drill cuttings, and small quantities of cured cement in the shoe track, generated by drilling into the subsurface geological formations.
Excess Cement	Drilling Operations	Excess cement circulated to surface to protect groundwater and comply with COGCC Rule 408.i.(2) when conductor /surface casing is set.
Produced Water	Completion, Flowback, and Production	Produced water utilized during well completion operations and returned fluid during flowback and production.
Contaminated Soils	All Phases	Soils contaminated at any phase of development.
Sewage	All Phases	Sewage generated while location is occupied during construction, drilling, completion, flowback, and potentially production activities.
Solid Waste / Trash	All Phases	Solid waste materials produced during any phase of development at the oil and gas location.

TYPES OF WASTES AND DISPOSAL METHODS

Drilling Fluids Management

Water-based bentonitic drilling fluids will be utilized during drilling operations on the proposed Oil and Gas Location and are classified as E&P waste. During drilling operations water-based drilling fluids are necessary to ensure proper well control and to return cuttings generated during construction of the well back to the surface. Drilling fluids are pumped down hole and returned up the annulus and processed through a closed loop drilling fluid system, which separates liquids and solids.

Drilling fluids will be re-used throughout the drilling process on the Oil and Gas Location. Once drilling operations are complete, drilling fluids will be processed through solids control and dewatering equipment on the Oil and Gas Location to reduce volume and weight of the drilling fluid. The processed drilling fluid is then stored in tanks and recycled for future drilling operations. Approximately one thousand barrels (1,000bbls) of drilling fluids could be recycled for future drilling operations following completion of drilling operations.

Drill Cuttings Management

Drill cuttings generated during drilling operations on the TR 32-28-597 pad will be managed within an L-shaped cuttings trench constructed along the north and east sides of the Oil and Gas Location. The drill cuttings trench would be approximately five hundred and twenty-five feet (525') in total length by forty feet (40') to fifty feet (50') in width, and with a depth of approximately eighteen feet (18'). The estimated volume of drill cuttings generated per well at this location is approximately four hundred sixty-six cubic yards (466cy). Hence, the total volume of drill cuttings estimated for the seventeen (17) proposed wells to be drilled at this location is approximately seven thousand nine hundred and eleven cubic yards (7,911cy). The cuttings trench has been designed with a maximum capacity of eight thousand two hundred and seventy cubic yards (8,270 cy).

Water-based, bentonitic drill cuttings from the TR 32-28-597 well pad will be temporarily managed as Oily Waste per COGCC Rule 905.g.(1).C, until the cuttings have been treated on-site to demonstrate compliance with Table 915.1. Subject to Surface Owner approval (and prior Director approval), drill cuttings that demonstrate compliance with Table 915-1, may be permanently stored in the onsite Cuttings Trench or utilized for beneficial reuse per COGCC Rule 905.g.(2) with an approved Form 27. Any excess cuttings remaining after interim reclamation will be hauled to an approved commercial disposal facility as noted in Table 4.

The cuttings trench will be constructed with a two- and one-half foot (2.5') high perimeter berm along all sides of the cuttings trench to ensure containment of drill cuttings. A wildlife ramp will be constructed near the northwest side to prevent entrapment. Please see the Layout Drawings attached to the Form 2A for additional details on the proposed cuttings trench.

Protocol for Managing Cuttings

As water-based, bentonitic drill cuttings are circulated to the surface, they will be temporarily placed into a high-walled, heavy-duty, metal storage bin that is located off the rig's drying shaker assembly. As needed, sawdust (or another acceptable, inert fill material) may be mixed with the cuttings during this phase to moderate and reduce the moisture content of the cuttings. Once dried cuttings are collected in the 3-sided bin(s), the drill cuttings will be placed inside the onsite Cuttings Trench.

The moisture content of the drill cuttings is kept as low as practicable to prevent accumulation of liquids within the cuttings trench. In cases where weather conditions, safety concerns, or operational constraints require, drill cuttings may be transported via truck to an approved third-party commercial disposal facility, or an approved TEP E&P Centralized Waste Management Facility (CWMF), in accordance with COGCC rules for treatment and final disposal.

TEP estimates that approximately 7,911 cy of drilling cuttings will be generated during drilling operations. Drilling cuttings will be mixed with clean fill materials and tested for compliance with Table 915-1 standards. TEP estimates that up to 1 cy of clean fill materials may be needed for every 1 cy of drill cuttings to bring the drill cuttings into compliance with Table 915-1 standards. The maximum estimation for the total volume of mixed drill cuttings is fifteen thousand eight hundred and twenty-two cubic yards (15,822cy). Assuming a 1:1 mixing ratio, this could result in approximately seven thousand five hundred and fifty-two cubic yards (7,552cy) of mixed drilling cuttings above the design capacity of the cuttings trench. Any excess drill cuttings that exceed the capacity of the cuttings trench will either be hauled to an approved third-party disposal facility, or utilized for beneficial reuse in recontouring during reclamation, if the cuttings meet Table 915-1 or are within background limits in the footnotes listed in Table 915-1. Please see the Reclamation Plan, attached to the Form 2A, for additional details regarding site reclamation, including Appendix A, Interim Reclamation Layout Drawing, which depicts the final placement of mixed drill cuttings.

The transportation of drill cuttings (E&P Waste) will be conducted in compliance with Rule 905.b, E&P Waste Transportation. TEP does not anticipate additional impacts in this TR 32-28-597 OGD that would result from hauling excess drill cuttings to the offsite disposal. Onsite treatment of this Oily Waste per Rule 905.e.(1).B. prevents additional emissions from diesel vehicles that results from hauling. It also allows TEP to minimize traffic on public roads, as well as minimize the use of freshwater resources to mitigate and suppress dust.

Sampling Protocol

The COGCC Guidance Document for Rule 905.g – Drill Cuttings, states that an operator may propose a reduced sampling frequency for drill cuttings provided they have been previously sampled and characterized from wells drilled in the same formations in the same field. Further, the Guidance Document states that if cuttings are being generated from multi-well pads, the Operator can propose / designate samples from one well to represent additional wells on the pad if wells are being drilled in the same formation.

In compliance with the COGCC Guidance Document for Rule 905.g – Drill Cuttings, all seventeen (17) wells drilled from the TR 32-28-597 well pad are being drilled from the same geologic formations and horizons and all drill cuttings are expected to contain identical chemical and physical properties. Therefore, TEP is proposing to collect cuttings samples from the first well drilled at this location to demonstrate compliance with Table 915-1. Drill cuttings from this initial well will be segregated and mixed / blended at an estimated 1:1 ratio with clean fill materials. As described above, each well is expected to yield approximately four hundred and sixty-six cubic yards (466cy) of drill cuttings, and after being mixed with clean fill at the 1:1 ratio, the total blended volume will be approximately nine hundred and thirty-two cubic yards (932cy). For sampling purposes, this volume of blended material will be divided into 4 quadrants and a discrete sample will be collected from each quadrant, which will result in four (4) individual samples being collected from the first well bore. Samples from each quadrant will be analyzed for the complete list of contaminants included in Table 915-1. All sampling and analysis will be conducted in compliance with Rule 915.e.(2).

Analytical results from this initial well sampling will be considered representative of all other wells being drilled from this location. If the resulting analytical data indicates that the blended cuttings comply with Table 915-1 standards, this initial well will be representative of all remaining wells to be drilled from this location, and all subsequent drill cuttings will be mixed / blended with clean fill at the same 1:1 ratio. If the resulting analytical data indicates that the blended cuttings do not comply with Table 915-1 standards, the ratio of clean-fill to be mixed with cuttings will be incrementally increased until it can be demonstrated that the mixture complies with Table 915-1 standards.

This approach for management and sampling of drill cuttings complies with the COGCC Guidance Document for Rule 905.g – Drill Cuttings since all wells to be drilled at the TR 32-28-597 well pad will be drilled from the same geologic formations and will have the same surface, intermediate, and production zones.

Regarding the requirement for Soil Suitability for Reclamation (Rule 915.b), TEP is providing a detailed Reclamation Plan that describes the revegetation techniques, site stabilization practices, and site-specific data that will be applicable to the reclamation of the cuttings trench area. If after treatment / blending with clean fill, any of the cuttings trench materials contain elevated inorganics (pH, EC, SAR, boron), TEP will discuss and evaluate the data with COGCC staff on a case-by-case basis.

Final Disposition of Waste:

Once the water-based bentonitic drilling cuttings meet the requirements of Table 915-1 as determined upon sampling and analysis, the drill cuttings will be managed and disposed of pursuant to Rule 905.g.(2) Drill Cuttings.

Drill cuttings generated from the TR 32-28-597 pad will be buried in accordance with Rule 905.g.(2).E., subject to Surface Owner approval, and prior to Director approval of a Form 27, in a Cuttings Trench. The

treated drill cuttings may also serve as fill material to allow for natural contouring during reclamation of the site. Pending Director approval of the Form 27, TEP will use salvaged topsoil as coverage in accordance with Rule 1003.e.(2) Revegetation of non-crop lands.

“All segregated soil horizons removed from non-crop lands shall be replaced to their original relative positions and contour as near as practicable to achieve erosion control and long-term stability and shall be tilled adequately in order to establish a proper seedbed.”

The cuttings trench will be re-contoured to blend as nearly as possible with the natural topography per the TR 32-28-597 Reclamation Plan, which is attached to the Form 2A.

As required by Rule 905.g.(2).E, TEP will submit a Form 27 for Director approval for final cuttings burial during interim reclamation.

Per the TR 32-28-597 Reclamation Plan, Interim Reclamation of the TR 32-28-597 pad will begin within six (6) months following completion of drilling and well completion operations. A working area (production pad) must be maintained around each wellhead and production equipment to ensure site accessibility and safe working conditions during long-term production operations.

Excess Cement

Wellbore cement that is returned to surface during cementing operations of the surface casing and conductor sections will be diverted to, and accumulated in, an open top bin on location. Cement E&P Waste will be managed to comply with COGCC Rule 905.b.(1). This cement waste stream, defined as *Excess Cement* on Table 1, will subsequently be transported for final disposal to an appropriate third-party disposal facility (Table 4).

Cement Washout

Non-hazardous excess cement waste, called “cement washout”, will be managed separately on location in an open top bin. This cement waste stream, defined as *Cement Washout* on Table 1, will subsequently be transported as solid waste via truck to an approved disposal facility in accordance with COGCC rules for final disposal. TEP will comply with all storage, treatment, and disposal requirements in the Solid and Hazardous Waste Commission’s (SHWC) Solid Waste Regulations, as incorporated by reference in Rule 901.b.(3).C.

Produced Water

Produced water (water produced from the wells after the wells are turned over to production) will be transported through the proposed two (2) four-inch (4”) produced water pipeline to the tie-in point with TEP’s existing water management system. Water will then be transported via existing water pipelines to one of the following TEP-operated Centralized E&P Waste Management Facilities for treatment, recycling, or disposal.

Produced water will be treated with biocide at the water management facility. Produced water will also be treated with biocide prior to disposal if necessary. Produced water is then disposed of through (1) natural evaporation at the evaporation ponds, (2) delivered and injected into one of the approved TEP-operated underground injection control (“UIC”) facilities, (3) re-used in hydraulic fracturing operations, or (4) hauled to an approved third party, commercial disposal facility as described below.

Table 2, Existing E&P Waste Management Facilities

Facility Name	Location	COGCC Location ID	COGCC Facility ID
Spruce Creek 14-4-794	SWSW Section 4 T7S R94W	427810	441099
Smith Gulch 31-32-796	NWNW Section 32 T7S R96W	430110	446561
KP 32-17 Completions Pit	SWNE Section 17 T6S R91W	323844	418807
Parachute E&P Waste Management Facility	SWSW Section 36 T6S R96W	--	149015
Rulison E&P Waste Management Facility	NWSW Section 20 T6S R94W	--	149006
Mautz Ranch E&P Waste Fac.	SENE Section 19 T2S R98W	422672	444993

Natural Evaporation Ponds

Produced water that has been collected and treated at any of the various Centralized E&P waste management facilities is stored in large, lined, engineered evaporation storage ponds that have been permitted and constructed to comply with COGCC Rule 907, Centralized E&P Waste Management Facilities, Rule 909 Pits – Construction and Operation, and Rule 910 Pit Lining Requirements and Specifications. These water storage ponds are purposefully designed with a large surface area to maximize evaporation of the produced water. Exposure to the sun, warm temperatures, and wind effectively evaporate water from the ponds and return that water to the atmosphere and ultimately to the hydrologic cycle. The arid climate of western Colorado is an ideal location for use of natural evaporation ponds as the annual evaporation rate typically is 3 – 4 times the annual precipitation rate for the area.

Underground Injection Control Facilities

Disposal of produced water at permitted underground injection control facilities is another viable option for disposal of excess produced water. Currently, TEP owns and operates 38 UIC injection wells (see Table 3) that are used for produced water disposal as needed. These UIC disposal wells / facilities are a critical component of TEP’s water management process as they help to maintain the balance between the total volume of production water generated, and the volume of water that is re-used / recycled or otherwise evaporated. All UIC facilities have been permitted per the COGCC Rule 800 series.

Table 3, Approved UIC Facilities

Well Name	Location	UIC Facility Number	Ownership	API
Circle B Land 33A-35-692	NWSE-S35-T6S-R92W	159277	Fee	05-045-18493
GGU Roderick	NENW-S31-T6S-R91W	159176	Fee	05-045-13803
Scott 41D-36-692	NENE-S36-T6S-R92W	159159	Fee	05-045-11169
Specialty 13A-28	NWSW-S28-T6S-R92W	159212	Fed	05-045-14054
KP SWD 9-12D	NESE-S8-T6S-R91W	159301	Fee	05-045-18532
PWD Federal 21-6	SWSE-S21-T6S-R91W	159479	Fed	05-045-21277
GM 14-36	Lot 4-S36-T6S-R96W	159262	Fee	05-045-07501
GM 239-36	NESW-S36-T6S-R96W	159369	Fee	05-045-14693
GM 523-36	NESW-S36-T6S-R96W	159266	Fee	05-045-13979

Well Name	Location	UIC Facility Number	Ownership	API
GM 923-1D	SWNE-S1-T7S-R96W	159295	Fee	05-045-18424
GM 931-1D	SWNE-S1-T7S-R96W	159297	Fee	05-045-18425
GM 943-1D	SWNE-S1-T7S-R96W	159296	Fee	05-045-18426
Fed 299-23-1	SESW-S23-T2S-R99W	159478	Fed	05-103-10488
Fed 299-23-2	NESE-S23-T2S-R99W	159452	Fed	05-103-10490
Fed 299-26-1	SWNW-S26-T2S-R99W	160001	Fed	05-103-10364
Fed 299-26-2	NWNW-S26-T2S-R99W	159413	Fed	05-103-10538
Fed 299-27-5	SWNE-S27-T2S-R99W	159317	Fed	05-103-10624
Fed 299-27-6	NENW-S27-T2S-R99W	159396	Fed	05-103-10644
RG 41-16-397	NWNE-S16-T3S-R97W	159410	Fed	05-103-11517
RMV 215-21	NESW-S21-T6S-R94W	159388	Fee	05-045-07465
RWF 434-21	SWSE-S21-T6S-R94W	159386	Fee	05-045-10469
RWF 623-21	NESW-S21-T6S-R94W	159387	Fee	05-045-10389
RWF 911-28D	SESW-S21-T6S-R94W	159447	Fee	05-045-22176
RWF 933-19D	SWNW-S20-T6S-R94W	159462	Fed	05-045-22333
SG 334-32	NWSE-S32-T7S-R96W	159971	Fee	05-045-18442
SG 914-32D	NESE-S32-T7S-R96W	159981	Fee	05-045-18533
SG 922-32D	SESW-S32-T7S-R96W	159960	Fee	05-045-22654
SG 924-29D	NWNE-S32-T7S-R96W	159974	Fed	05-045-23023
B19-N	NWNE-S32-T7S-R96W	159220	Fee	05-103-11000
BAT 23CWI-24-07-96	NESW-S24-T7S-R96W	159457	Fee	05-045-22313
CSF #1-10W (Speakman)	NESW-S10-T7S-R91W	159150	Fed	05-045-06273
Tompkins 41 AWI-08-07-95	SESE-S5-T7S-R95W	160006	Fee	05-045-22551
Valley Farms D3	NENW-S15-T6S-R92W	159299	Fee	05-045-12082
Valley Farms F4	NWSW-S14-T6S-R92W	159298	Fee	05-045-14287
Watson Ranch B 24AWI-17-07-95	SESW-S17-T7S-R95W	159983	Fee	05-045-22801
DOE 1-W-27	Lot 5-S27-T6S-R95W	159432	Fed	05-045-06584
DOE 2-W-27	Lot 8-S27-T6S-R95W	159432	Fed	05-045-06585
DOE 2-W-29	Lot 8-S29-T6S-R95W	159418	Fed	05-045-06588

Re-use/Recycle in Hydraulic Fracturing Operations

Re-use and recycling of produced water is an effective and efficient use of produced water as it precludes the use and consumption of freshwater resources. As produced water is generated from existing wells, the water is collected / transported to one of the Centralized E&P waste management facilities for further treatment and potential re-use / recycling during hydraulic fracturing operations. The “finished” water from the treatment facility has been treated to remove any residual hydrocarbon content that was not separated at the well-head. After treatment, the treated water may then be “re-used / recycled” during hydraulic fracturing operations where the water is pumped from a Centralized E&P waste management facility to a series of remote storage ponds where the water is staged and ultimately re-used / recycled for hydraulic

fracturing operations. Hydraulic fracturing operations is a highly water intensive activity and re-using / recycling produced water serves to protect and reserve freshwater resources.

Third Party Disposal Facilities

Third party disposal facilities are an option available to TEP for management and disposal of produced water. However, because this option requires trucking to a distant commercial disposal facility, this is typically considered to be a labor-intensive option, is not cost effective for TEP, and therefore, is not a preferred option. There are six Third-Party, commercial disposal facilities that are locally / regionally available to TEP operations (see Table 4). Typically, TEP would only use a third-party commercial disposal facility for produced water disposal if our existing water treatment facilities were full (at maximum capacity) and/or TEP’s permitted injection wells were incapacitated (not available) for some reason.

Table 4, Approved Third Party Disposal Facilities

Facility Name	Location	Permit No.
OWL SWD Operating LLC Services	SE Sec 8, T20S, R24E Grand County, UT	Grand County Council Resolution 2798
Harley Dome #1 SWD 43-019-31622	Sec. 10-9S-25E	UIC-358-1
Greenleaf Environmental Services	15655 45 ½ Road Debeque, CO 81630	Mesa County CUP Resolution MCM 2012-044 APCD Permit – 02ME0577 CDPHE-HMWMD – SW / MES BLA / 2.2
ECDC Environmental Landfill	1111 West Highway 123 East Carbon, UT 84520	Class V Landfill Permit #9422R1
White River Dome (Owned by RNI/DHI) Colorado disposal site	White River City Rio Blanco County, CO Intersection of CR 5 and Hwy 64	CDPHE Solid Waste Permit: SW-RBL.PIC 2.3 APCD Permit- 07RB0987
PBR Disposal	SWSW Section 2, T3S, R98W Rio Blanco County	Air Construction Permit. 09RB0921 Rio Blanco County SUP Resolution 2007-42 (07/13/09)

Contaminated Soils

Occasionally, spills of production fluids may occur during oil and gas operations that result in localized impacts to soils on or near the well pad. All spills are immediately investigated by TEP Environmental and Operations personnel. Impacted soils are assessed to determine if they exceed regulatory cleanup standards and require removal, treatment, or disposal. Characterizing potentially contaminated soils is accomplished either by field-screening the impacted soils to determine relative hydrocarbon concentrations, and/or by collecting samples of the impacted soils and sending the samples to an approved commercial lab for analysis per Table 915-1 constituents.

All contaminated soils exceeding regulatory cleanup standards are excavated and managed / disposed of appropriately. If a spill incident is subject to agency reporting requirements, the appropriate agencies are notified within the regulatory timelines. Impacted soils that exceed applicable cleanup standards are excavated and taken to an off-site commercial disposal facility (see Table 4) that is authorized to accept that type of waste.

Sewage

Chemical toilets (i.e., porta potties) will be provided on site for personnel use during construction, drilling, and completions operations. Porta potties will be emptied weekly by an approved sanitary waste contractor and hauled to an approved sanitary waste disposal facility. Please see Table 5, Waste Handling Summary, for additional details.

Garbage

All garbage and trash (i.e., solid, non-hazardous wastes) will be stored in enclosed bear-proof trash containers. Disposal of garbage and trash will occur approximately once per week during drilling and completions operations. All garbage and trash will be transported to a permitted solid waste landfill within one (1) week following termination of drilling or completion operations. Garbage or trash will not be disposed of on-location. The well site and access road will be kept free of trash and debris during long-term production operations. No hazardous substances or hazardous wastes are anticipated to be generated during construction, drilling, and completions operations. Such materials are strictly prohibited for disposal at a solid waste landfill. Please see Table 5, Waste Handling Summary, for additional details.

RECORD KEEPING

TEP will comply with COGCC Rule 905.b.(3), Waste Generator Requirement, which states that operators that generates E&P Waste that is transported off-site will maintain records of invoices, bills, or tickets for a minimum of five (5) years including the following information:

1. The date of the transport;
2. The identity of the waste generator;
3. The identity of the waste transporter;
4. The location of the waste pickup site;
5. The type and volume of waste; and
6. The name and location of the treatment or disposal site.

Records will be maintained in compliance with COGCC Rule 206, Recordkeeping and Access to Records. Records will be maintained at TEP's main field office in Parachute, CO. TEP will maintain facility inspection forms, maintenance documentation, analytical sample data, storm water management and weed control documentation, operational data, and any other information relative to the operation of this facility.

BEST MANAGEMENT PRACTICES

- 1) TEP will properly characterize and dispose of all waste streams at facilities approved for acceptance of each waste stream;
- 2) TEP will properly characterize and dispose of all waste at the appropriate specific landfill/waste disposal location that allows for acceptance of the particular waste stream.
- 3) No offsite disposal of cuttings to another Oil and Gas Location shall occur without prior approval of an amended Waste Management Plan specifying disposal location and waste characterization method; commercial disposal of drill cuttings and drilling fluids will only require the operator to maintain documentation (manifests, bills of lading) of drill cuttings and drilling fluids disposal; the operator will implement measures (covers, misting) in trucks to reduce dust and particulate matter (PM) emissions during transport of water-based muds, solids, and drill cuttings materials from the well pad location;
- 4) A closed loop drilling system will be employed;

- 5) The moisture content of any water/bentonite-based drilling mud (WBM) generated cuttings will be minimized through good engineering practices and mechanical processes to prevent the accumulation of liquids greater than de minimis amounts;
- 6) All cuttings generated during drilling will be managed within the proposed cuttings trench prior to disposition;
- 7) Solids control and separation equipment will be utilized to separate WBM-generated cuttings solids from liquids (water/bentonite drilling mud);
- 8) In the event that the drill cuttings analytically demonstrate constituents above able 915-1 standards, the cuttings will be remediated prior to interim reclamation activities to levels below all applicable standards of Table 915-1 or are within background limits; No liners will be used or disposed of in the cuttings trench;
- 9) Any trash generated during the project will be disposed of properly at a commercial disposal facility;

SUMMARY

As described above, development of the proposed wells on the TR 32-28-597 pad will produce waste fluids and materials which will be managed in accordance with all Federal, State, and local guidelines. Table 5, Waste Handling Summary, shows a detailed summary of the waste streams involved in development of the proposed wells.

Table 5, Waste Handling Summary

Waste Type	Waste Classification	Waste Content Description	Waste per Well	Total Waste	Disposal Frequency	Containment Description	Disposal Type	Disposal Location
Drill Cuttings	E&P Waste	Water-based Bentonitic Drill Cuttings	466cy	7,911cy	One Time Only	Cuttings Trench	On-site Disposal	Private / O&G Location
Water-based Drilling Fluids	E&P Waste	Water-based Bentonitic Drilling Fluids	NA	1,000bbls	One Time Only	Tanks	Recycle	Private / TEP E&P CWMF
Excess Cement	E&P Waste	Excess cement generated from setting surface casing and conductors.	4cy	68cy	As needed	3-sided bin or Open Top Tank	Haul to an Approved Commercial E&P Waste Facility	Commercial
Cement Washout	Non-hazardous Solid Waste	Cement washout from cleaning equipment and lines	0.1cy	1.7cy	As needed	3-sided bin or Open Top Tank	Haul to Commercial Facility	Commercial
Sewage	Non-hazardous Solid Waste	Sewage	200bbl	NA	Weekly	Chemical toilets or enclosed sewer system	Haul to Commercial Facility	Commercial
Garbage	Non-hazardous Solid Waste	Garbage/Trash	4000lb	NA	Weekly	Enclosed trash containers	Haul to Commercial Facility	Commercial
Produced Water	E&P Waste	Produced water after well is turned over to production. The volume reported is not accurate nor known at this time.	100+bbls	NA	Weekly	Water is piped into existing infrastructure	Recycled/Off-Lease Injection/Commercial Facility	Private / TEP E&P CWMF or Injection Facility
Contaminated Soils	E&P Waste	Contaminated soils from spill or release of <u>produced water</u> or <u>condensate</u> .	NA	NA	As needed	Earthen berm containment on pad	On-site Disposal or Haul to approved commercial disposal facility.	Private / O&G Location or Commercial
Contaminated Soils	Hazardous Waste or Substance	Contaminated soils from spill or release of <u>diesel fuel</u> or <u>chemicals</u>	NA	NA	As needed	Excavation and direct placement into dump trucks or temporary storage bins	Haul to approved commercial disposal facility	Commercial