

# WASTE MANAGEMENT PLAN

**GMT** EXPLORATION COMPANY LLC

**Invicta 3-65 28 Pad**

Sec. 28 T3S R65W N/2

Adams County, Colorado

Surface: Fee

Submitted as an accompaniment to the Form 2A Application and  
Consistent with the requirements of Rule 905.a.(4).

**Invicta 3-65-28 Oil and Gas Application**  
**DA-2371-00**  
**Case Number 2023-6050-00**

August 17, 2023

Revised: January 22, 2024

# **GMT Exploration Company LLC Adams County, Colorado**

## **Waste Management Plan**

### **Project Summary:**

GMT Exploration Company LLC's (GMT's) proposed Invicta 3-65 28 Pad "Location" is located in Township 3 South, Range 65 West of Section 28 in Adams County, Colorado. The proposed location is on fee surface with a total Location disturbance of 19.075 acres which includes the active working pad surface area of 8.585 acres. During interim reclamation and the production phase 8.774 acres will be reclaimed leaving a disturbed production area of 10.301 acres. The location address is 27300 E. 38<sup>th</sup> Pkwy Aurora, CO.

### **Plan Purpose**

The purpose and intent of this plan is to provide field wide and site-specific guidance and recommended Best Management Practices to properly manage waste. The Operator has developed this plan to comply and be consistent with Federal, State and local guidelines as they relate to waste management.

This plan is being developed as a requirement of Rule 303.c.(11) and consistent with the requirements of Rule 905.a(4) as well as local government (City of Aurora, Colorado) recommendations. The Operator will utilize these general guidelines on all sites at the onset of construction activities as well as perform the necessary management and maintenance throughout the project life.

This Waste Management Plan (WMP) identifies waste management requirements for common wastes generated by field operations.

### **Responsibilities**

Waste management is included in the planning process for all projects and activities. Company personnel are responsible for the proper identification, handling and storage of wastes, both at the facility and throughout the shipment process. Waste can only be disposed of at approved disposal or recycling facilities. Under this WMP, GMT and their designated contractors are responsible for the performance of the following tasks:

- Characterizing and classifying all waste generated.
- Developing and maintaining a list of waste generated.
- Documenting volumes recycled or disposed.
- Ensuring and documenting that all waste generated is properly handled, stored, transported, and disposed, including review of approved disposal facilities.
- Implementing and maintaining the WMP.
- Maintaining all manifests and recycling dockets.
- Developing and communicating waste handling procedures.

- Training appropriate staff in waste management procedures.
- Participating in waste minimization efforts.
- Performing periodic storage area inspections.
- Assisting with resolving non-conformances, if any.

## WASTE MANAGEMENT

Waste management regulations and policies are provided by the United States Environmental Protection Agency (EPA) via the Code of Federal Regulations (CFR), the United States Bureau of Land Management (BLM), the Colorado Department of Public Health and Environment (CDPHE), and the Colorado Energy & Carbon Management Commission (ECMC).

### **TYPES OF WASTE**

Industrial waste is characterized as either hazardous waste or non-hazardous waste under the Resource Conservation and Recovery Act (RCRA) regulations in 40 CFR 261 Subpart D. There are two ways in which a waste can be considered a hazardous waste; by listing, or by characteristic. Hazardous waste is not anticipated in the GMT field. All waste that GMT will generate is anticipated to be non-hazardous. However, the term non-hazardous is not synonymous with harmless. The improper management and disposal of non-hazardous waste can also result in environmental and human health problems.

#### 1. Exempt Waste

There are several major exemptions listed in 40 CFR 261.4. One of the major exemptions includes the Oil and Gas Exploration and Production (E&P) exemption which includes wastes that are produced upstream from the first change in custody of the product. The waste is considered exempt from regulation as hazardous waste if it is generated in the field by the Operator or the Operator's contractors upstream from the point of sale.

The following wastes are considered exempt:

- Water produced along with oil and gas from any formation
- Drilling fluids used during the drilling of any oil and gas well on those locations
- Drill cuttings from the drilling of any oil and gas well or the water supply wells on those locations
- Rig wash water
- Drilling fluid or cuttings
- Geothermal production fluids
- Hydrogen sulfide abatement wastes from geothermal energy production
- Well completion, treatment, and stimulation fluids
- Basic sediment and water and other tank bottoms from the storage facilities that hold crude oil, natural gas, gas condensate, or another exempt waste
- Accumulated materials such as hydrocarbons, solids, sand, and emulsion from production separators, treating vessels, and production impoundments
- Pit sludges and contaminated bottoms from storage or disposal of exempt wastes

- Waste produced during any workover or abandonment of an oil or gas well or test hole
- Gas plant sweetening wastes for sulfur removal including amines, amine filter media, backwash, and molecular sieves
- Gas plant dehydration wastes, including glycol filters, filter media, backwash, and molecular sieves
- Hydrogen sulfide removed from natural gas
- Cooling tower blowdown wastes on gas plan or other exempt sites
- Spent filters, filter media and backwash, as long as the filter itself is not hazardous waste
- Packing fluids
- Produced sand
- Pipe scale, hydrocarbon solids, hydrates, and other deposits removed from piping and equipment prior to transportation
- Pigging wastes from infield gathering lines, but not from interstate pipeline systems
- Wastes from subsurface gas storage and retrieval wastes
- Constituents removed from produced water before it is injected or otherwise disposed of
- Liquid hydrocarbons removed from the production stream but not from oil refining
- Gases from the production stream such as carbon dioxide and volatilized hydrocarbons
- Materials ejected from producing well during the process known as blowdown
- Hydrocarbon bearing soil from a site which is otherwise exempt
- Waste crude oil from primary field operations and production
- Light organics volatilized from exempt waste in reserve pits or impoundments or production equipment

In Colorado, the ECMC 900 series rule outlines practices for managing E&P wastes, including pits, spill response and reporting, produced water, drilling fluids, and oily waste. In addition to the state and federal regulations, disposal facilities have instigated their own procedures for waste acceptance. All these rules and procedures are to be followed to properly dispose of waste materials.

Mixing of wastes will be avoided. Mixing non-hazardous waste with hazardous waste can lead to the entire mixture being classified as hazardous waste. Exempt or non-exempt waste will not be commingled with known hazardous waste.

GMT anticipates generating E&P exempt waste, such as petroleum-contaminated soil, tank bottoms, flowback fluids, and produced water.

## 2. Non-Exempt Waste

Some wastes generated by operations are not exempt from federal hazardous waste regulations. For example, new or unused leftover products, such as acids, methanol, diesel, drilling mud, and cement, are not E&P exempt. Non-exempt waste must be evaluated to determine whether it is either hazardous or non-hazardous before transportation and disposal of the material. To complete this determination,

testing or process knowledge may be required by the disposal facility for approval. Guidelines for making this determination are:

- Non-Exempt Non-Hazardous Waste: Wastes which are not specifically exempted but are not hazardous under the regulations. The generator is required to determine if a non-exempt waste is hazardous. Testing will be done if there is any question regarding whether a waste is hazardous.
- Non-Exempt Hazardous Waste: Wastes which are not exempted and are hazardous by RCRA definition must be handled and disposed as hazardous waste.

### **Waste Characterization**

Once waste is contained and characterized, GMT will choose the appropriate disposal facility and prepare a waste profile for approval by the disposal company. Disposal, injection, or recycling facilities each have their own procedures on waste characterization and profiling for acceptance into their facility. Many require samples for specific laboratory analyses and/or a statement of process knowledge for waste generation. The profile usually requires an estimate of volume and a date range for delivery. For some waste streams, GMT may already have waste characterization profiles on file with the disposal or recycling facility for regular deliveries.

Following approval of a waste profile, the disposal company will provide the manifests for transport of the waste.

### **Waste Streams**

GMT has identified certain disposal companies for their common waste streams:

E&P Exempt Petroleum Contaminated Waste:

- Petroleum contaminated soil will be disposed of at a commercial solid waste disposal facility.
- Tank Bottoms will be disposed of at a commercial solid waste disposal facility.

- Solid Waste Disposal Facilities:
  - Republic Services
  - Tower Landfill 5126
  - 8480 Tower Road
  - Commerce City, CO 80022

Waste Management  
Denver Arapahoe Disposal Site  
3500 South Gun Club Road  
Aurora, CO 80018

Pawnee Waste LLC  
47368 Weld Co Rd 118  
Grover, CO 80729

Liquid Waste (Flowback and Produced Water)

- Flowback fluids recovered after hydraulic fracturing is complete are temporarily stored on site in tanks. When necessary, the tanks will be pumped and trucked offsite to a Class II Injection Facility.

- Produced water is stored on site in 750-barrel (bbl) steel tanks located within the tank battery secondary containment. Produced water will be collected and trucked offsite to a Class II injection facility at an appropriate interval determined by production operations and tank storage capacities.
- Class II Injection Facility: Expedition Water Solutions  
31631 County Road. 398  
Keenesburg, CO 80643

ECMC allows other options for produced water disposal; evaporation/percolation in a properly-permitted pit, evaporation in a properly-lined pit at a centralized E&P waste management facility (permitted in accordance with Rule 908), disposal at a permitted commercial facility, disposal by road-spreading (with additional criteria), and discharging to state waters via a Colorado discharge permit. Produced water is also allowed to be reused for enhanced recovery, drilling, or other approved uses as long as it meets existing water rights and water quality standards.

Fluid Evaporation/Solidification and Disposal Facilities:

Republic Services  
Tower Landfill 5126  
8480 Tower Road  
Commerce City, CO 80022

Waste Management  
Denver Arapahoe Disposal Site  
3500 South Gun Club Road  
Aurora, CO 80018

Pawnee Waste LLC  
47368 Weld Co Rd 118  
Grover, CO 80729

**TRANSPORTATION**

Packaging waste for transportation will be designed to reduce the risk of loss, leakage, or exposure during shipment and to communicate information on potential hazards posed by the material in transport.

Waste shipments will be tracked and correctly packaged and labeled to communicate potential hazards. Specific transport requirements include manifesting, packaging, marking, and labeling waste packages, placarding transport vehicles, choosing appropriate waste transporters and shipment destinations, recordkeeping, and reporting. The transportation of hazardous materials is regulated by the Department of Transportation (DOT) (refer to 49 CFR Part 172). Hazardous waste manifests serve as DOT shipping papers. E&P exempt waste may be documented by non-hazardous waste manifests or bills of lading for transport.

GMT has established procedures and contracts with transportation companies for their common waste streams:

- All E&P waste will be trucked offsite. Truck transport will vary depending on the site and volume of the waste produced.
- Fluids and produced water will be hauled in a tanker or vacuum truck and soil cuttings will be hauled in dump trucks.

Transporter of Solids: Northern Plains Trucking  
18302 Hwy 392  
Greeley, CO 80631

Norco Transport LLC  
5311 West 5th Street  
Greeley, CO 80634

Beast Hydro  
PO Box 599  
Douglas, WY 82633

Advanced Contracting Group  
804 Grand Avenue  
Platteville, CO 80651

Transporter of Liquids: Northern Plains Trucking  
18302 Hwy 392  
Greeley, CO 80631

Norco Transport LLC  
5311 West 5th Street  
Greeley, CO 80634

Beast Hydro  
PO Box 599  
Douglas, WY 82633

Advanced Contracting Group  
804 Grand Avenue  
Platteville, CO 80651

### **Waste Storage and Containers**

When storing waste or recyclables, containers will be:

- In good condition and not leaking.
- Compatible with the materials they are storing to avoid corrosion or chemical reactions that could result in fire. Materials Safety Data Sheets (MSDS) information can be used as a guide in the selection of storage containers.

- Storage containers will meet the applicable EPA Spill Prevention, Control, and Countermeasure (SPCC) Plan requirements including secondary containment and SPCC Plan preparation where required.
- Kept closed except when adding waste
- Protected from the weather (when possible).
- Not opened, handled, or stored in ways that could cause leaks or rupture.
- Clearly marked and labeled to identify what is being stored.

### **Waste Minimization**

Waste minimization efforts are pursued where economically feasible. A hierarchy of waste management options, listed from most desirable to least desirable, includes:

- Reduction
- Reuse
- Recycling and recovery
- Disposal

Prevention of waste generation is the first step. The best waste management practice is to avoid creating waste. Examples of waste prevention techniques are:

- Plan work processes. Consider all possibilities that something can be reused instead of being thrown out.
- Completely empty one container before opening another of the same product. Open containers are more likely to create a spill hazard and leftover products often eventually become waste. If products are completely used, they never become a waste.
- Require suppliers to ship materials in reusable containers and to minimize packaging where it is safe to do so.
- Segregate waste and recyclables at the source.

The ECMC encourages waste minimization. To promote waste minimization, Operators may propose plans for managing E&P waste through beneficial use, reuse, and recycling by submitting a written management plan to the ECMC for approval on a Sundry Notice, Form 4, if applicable.

### **RECORDKEEPING AND DOCUMENTATION**

Prior to transporting the waste, GMT will ensure that a waste profile is on file with the disposal company or characterize the waste for profiling. When the waste is sent for disposal or recycling, the waste will be identified on the waste shipping manifest, bill of lading, or recycle docket. Any associated sampling data and/or SDSs will be kept with the waste profile documentation. Organize recordkeeping files by disposal company and year. Manifests or bills of lading will include a minimum of the following data:

- The generating location/facility
- The waste identification/classification
- The weight or volume of the waste
- The date of transport and date of disposition
- The recycle/disposal facility and location

Manifests (hazardous and non-hazardous) also require signatures of the generator, transporter, and disposal facility.

GMT will keep track of offsite disposal activities by keeping a daily Recycle/Disposal Log tracking the following information:

- Waste type and volume
- Facility where waste was generated
- Transporter
- Whether waste was disposed, injected, or recycled
- The disposal facility/location
- If a waste profile is on file

The following records shall be maintained by GMT for all waste management activities:

- Waste characterization profiles and supporting documentation (including laboratory data if applicable)
- Disposal manifests, bills of lading, recycle dockets, and transportation documents
- Recycle/Disposal Logs

Records may be maintained as a hard copy or as an electronic copy. Records will be maintained by GMT indefinitely. ECMC requires that copies be maintained for no less than five years. Per ECMC Rule 206 f. GMT will abide by the following requirements:

- (1) Unless otherwise specified by the Commission's Rules, Operators will maintain and keep all records, reports, and underlying data required by the Commission's Rules for a period of 5 years.
- (2) Operators will maintain and keep Chemical Inventories and Well Records for 5 years after the plugging and abandonment of the applicable Well.
- (3) Operators will maintain and keep Chemical Inventories for 5 years after the closure of an Oil and Gas Location.

### **Garbage and Household Waste**

All trash will be contained in a portable, completely enclosed, wire mesh trash cage. Upon completion of the drilling operation, the trash cage will be removed and hauled to the nearest authorized landfill.

A portable self-contained chemical toilet will be supplied on location for human waste temporarily during drilling and completion operations. As necessary the holding tank will be pumped and disposed of at an approved sewage facility.

Handwashing stations and hygiene protocols are in place at the location.

Garbage and the chemical toilet will be disposed of on a weekly basis.

APPENDIX A  
Site-Specific Waste Management Table

**Waste Characterization**

Waste	Identification Method	Assessment Method	Treatment	Transport	Disposal	Recycle
Drill Cuttings	Knowledge of Process	Sampling and Analysis	Separated from drilling mud via shakers	Trucked to approved disposal facility	Republic Services Tower Landfill	No
Drilling Fluids	Knowledge of Process	Sampling and Analysis	TBD by Table 915-1 analysis	Dewatered Fluids Trucked if not recycled	Republic Services Tower Landfill	Yes - When Applicable
Cement Returns	Knowledge of Process	Knowledge of Process	None	Truck		No
Frac Sand		Not applicable				
<b>E&amp;P Exempt Liquids</b>						
Produced Water	Knowledge of Process	Sampling and Analysis	TBD by Table 915-1 analysis	Truck	Hauled by 3 <sup>rd</sup> party vendor	When Applicable
Impacted Soil	Visual Determination	Sampling and Analysis	If any: TBD by Table 915-1 analysis	Truck		No

**APPENDIX B**  
**Best Management Practices (BMPs)**

Management

- All personnel, including contractors, will be informed of waste management protocols and locations of waste receptacles prior to the start of any operations.
- Operator will conduct site inspections throughout all operational phases to ensure waste is properly stored and receptacles are being emptied as needed.

Treatment

- All treated waste will be clearly labeled and properly stored.
- Operator will maintain records of all waste analysis and treatment.

Storage

- All waste storage will include compatible containers and be in compliance with regulations. Containers will also be inspected regularly to ensure proper function.
- Waste levels will be monitored, and maximum storage limits will not be exceeded.
- Operator will maintain records of all waste storage.

Disposal

- On-site receptacles for waste will be clearly labeled, placed in designated locations, and emptied as needed, within compliance.
- Transported waste will only be disposed at permitted locations.
- Operator will maintain records of all waste disposal.

Transport

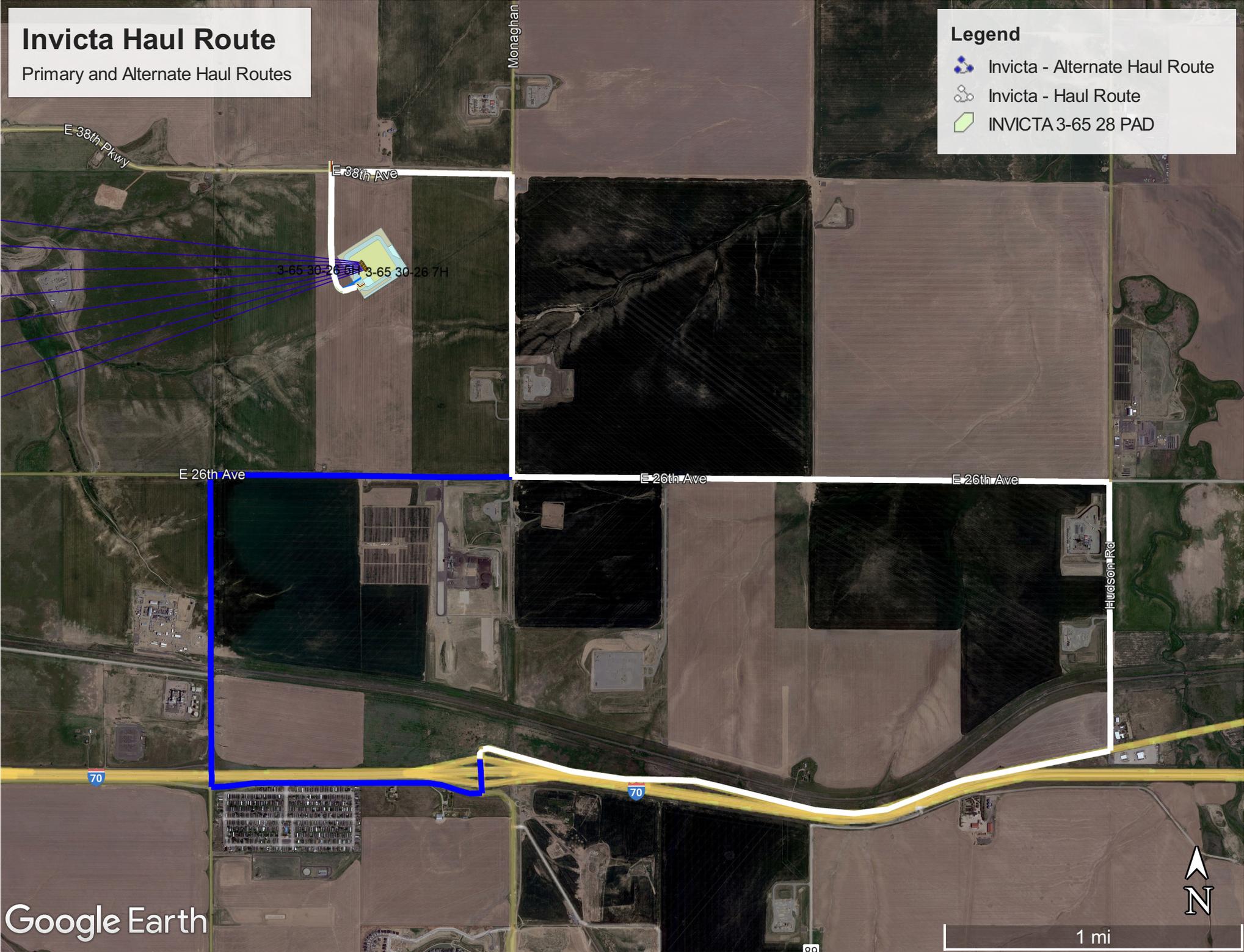
- All transport will be conducted via compatible containers and by licensed transporters.
- All transport vehicles will use the designated haul route to ingress and egress the locations.
- Operator will maintain records of all waste transport.

# Invicta Haul Route

Primary and Alternate Haul Routes

## Legend

-  Invicta - Alternate Haul Route
-  Invicta - Haul Route
-  INVICTA 3-65 28 PAD



## WASTE MANAGMENT PLAN

### GMT Exploration Company LLC

#### A. Site-Specific Information

Feature	Description
Well Count	8 HZ Wells
Drilling Summary	Utilize closed-loop oil-based mud system, etc.
Completions Summary	Slick water Frac for 8 Niobrara Wells
Production Summary	Natural gas and Oil will be sold through the Bronco Pipeline System. Produced water will be trucked.

#### B. Waste Disposition Summary (all numbers estimated on a per well basis)

Waste Description	Type	Storage	Onsite Treatment	Estimated Total Amount	Disposal Frequency	Duration of Waste Production	Waste End Point
<b>DRILLING</b>							
Oil-Based Drilling Fluid	E&P	Metal tanks associated with rig (mud tanks), then transport tanker truck to be recycled, or disposal	Circulated through wellbore while drilling, processed thru shakers to remove cuttings	Not Anticipated (recycled)	Not anticipated (recycled)	Not anticipated recycled)	<i>While oil-based mud waste is not anticipated, it would be taken to the following facility if it were generated:</i> Pawnee Waste LLC Landfill - 47368 Weld Co Road 118, Grover, CO 80729
Water-Based Drilling Fluid		Metal tanks associated with rig (mud tanks), then transport tanker truck to disposal	Circulated through wellbore while drilling, processed thru shakers to remove cuttings	1200 BBL	End of drilling surface hole	3 -5 days	Expedition Water Solutions (EWS) 31631 County Road 398, Kennesburg, CO 80643
Drill Cuttings	E&P	20 cubic yd metal roll-off container, then transported to landfill via truck	Separated from drilling mud via shakers	1,400 yd^3	4-5 loads/day	2 weeks	Waste Management Denver Arapahoe Disposal Site 3500 South Gun Club Road Aurora, CO 80018
Cement	E&P	Metal cement tanks, then transport tanker truck to landfill	None	50 BBL	Once a week	2 weeks	Pawnee Waste LLC Landfill - 47368 Weld Co Road 118, Grover, CO 80729
<b>COMPLETIONS</b>							
Flowback Water	E&P	Enclosed 500 bbl steel flowback tanks	None	20,000 BBL	Daily	2 weeks	Expedition Water Solutions (EWS) 31631 County Road 398 Kennesburg, CO 80643
Produced Sand	E&P	Drill out of completion plugs produces limited amounts of sand. Operator flows its wells back utilizing a choke management system that minimizes sand production from flowback	None	100 yd^3	Daily	2 weeks	Waste Management Denver Arapahoe Disposal Site 3500 South Gun Club Road Aurora, CO 80018
<b>PRODUCTION</b>							
Produced Water	E&P	750 bbl (15' 6" d x 24' h) lined steel tanks x 4	Separated from total wellbore fluids via HLP separator	200,000 BBL	Daily to begin, bi-weekly later	The life of the wells, ~10- 20 yrs	Expedition Water Solutions (EWS) 31631 County Road 398, Kennesburg, CO 80643
Waste Oils	E&P	Leak-proof, closed containers (for instance, heavy-duty plastic bucket w/lid)	None	0 BBL	Once every 6 mos	The life of the wells, ~10- 20 yrs	Pawnee Waste LLC Landfill - 47368 Weld Co Road 118, Grover, CO 80729
Oily Trash	E&P Exempt	55 gallon drums w/lid	None	10 drums	Once every 6 mos	The life of the wells, ~10- 20 yrs	Waste Management Denver Arapahoe Disposal Site 3500 South Gun Club Road Aurora, CO 80018
<b>OTHER</b>							
Impacted Soil	E&P	Temporarily on a lined surface, then placed in roll-off dumpsters or 55 gal drums (depending on amount) for transport to landfill	If soils are impacted by E&P fluids, absorbent materials are utilized to remove as much fluid from the soil as possible	Every effort is made so this number is zero	Every effort is made so this number is zero	Every effort is made so this number is zero	Waste Management Denver Arapahoe Disposal Site 3500 South Gun Club Road Aurora, CO 80018
Household and Human Waste	E&P	Portable Self-Contained Toilet Trash will be contained in a portable, completely enclosed wire mesh trash cage.	None	(1) Wire Mesh Cage (1) Portable Toilet	Weekly	During Drilling.	Pawnee Waste LLC Landfill - 47368 Weld Co Road 118, Grover, CO 80729 Chemical Toilet will be pumped and disosed of at an approved sewage facility.