GUIDELINES

COMMERCIAL OILFIELD WASTEWATER DISPOSAL FACILITIES (COWDF)

REVISIONS: Financial assurance requirements (surveyed land)
Greater Sage-Grouse Core Area Protection
Interpretation of Setback Requirements

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GUIDELINES

COMMERCIAL OILFIELD WASTEWATER DISPOSAL FACILITIES (COWDF)

This guideline consolidates into one document the existing Wyoming Department of Environmental Quality (WDEQ), Water Quality Division (WQD) rules and regulations pertaining to the permitting, construction, operation, bonding, and monitoring of commercial oilfield wastewater disposal facilities. A commercial oilfield wastewater disposal facility (COWDF) is defined as any facility that accepts oilfield exploration and production (E&P) wastes from more than one producer.

I. AUTHORITY

a. Environmental Quality Act

W.S. 35-11-301(a) (i) requires a permit to discharge for any person who causes, threatens or allows the discharge of any pollution or wastes into waters of the state.

W.S. 35-11 (a) (iii) requires a permit to construct, install, modify, or operate any wastewater system, disposal system, or other facility capable of causing or contributing to pollution.

b. Chapter 3

Applies to all private, municipal, commercial, and industrial (including mining) sewerage systems, treatment works, disposal facilities, biosolids management facilities, treated wastewater systems, and other facilities capable of causing or contributing to pollution. Noncommercial pits and ponds permitted by the Wyoming Oil and Gas Conservation Commission for the storage, treatment, and disposal of drilling fluids, produced water, emergency overflow wastes or other oil field wastes associated with the maintenance and operation of oil and gas exploration and production wells on a lease, unit, or communitized area are exempt from this regulation.

This chapter contains regulations pertaining to construction permits required by W.S. 35-11-301(a) (iii).

c. Chapter 8

Establishes quality standards for Wyoming ground waters.

d. Chapter 2 and 7

Establishes requirements for the surface discharge of water associated with oil and gas.

e. Chapter 11

Establishes minimum design and construction standards for wastewater facilities. Parts A, C, and G are applicable to oilfield wastewater disposal systems and monitoring wells.

f. Chapter 20

Establishes minimum design and construction standards for confined swine feeding operations. Chapter 20 references an accepted engineering design for lined wastewater ponds. These regulations are referenced here under authority granted under Chapter 3, Section 6, (b) (iii) which states “All plans and
specifications must conform to common and accepted engineering practices as determined by the administrator or as defined by applicable Water Quality Division regulations.”

II. PERMIT APPLICATION REQUIREMENTS

The following procedures shall be used when applying for a permit:

a. Permit Required

Any person who proposes to construct, modify, or operate a commercial oil field wastewater disposal facility shall submit a written application for a permit on forms provided by the administrator (Chapter 3 application for a permit to construct). The application must contain an original signature of the real estate owner of record or a legal designee. The application must also contain an original signature of the operator.

b. Management Plan

The application for a permit shall be accompanied by a management plan. A complete management plan shall have the following components:

i. Engineering design report;
ii. Construction plan;
iii. Operation plan; and

c. Number of Copies

The application for approval of a permit or for modification of an approved permit must be accompanied by three (3) copies of plans, specifications, design data, or other pertinent information covering the project and any additional information requested by the administrator.

d. Groundwater Monitoring Plan

In instances where a groundwater monitoring program is required as determined by the administrator, the application shall also include a proposed groundwater monitoring program to satisfy the requirements of Chapter 26, Wyoming Water Quality Rules and Regulations.

e. Professional Engineer/Professional Geologist Requirements

All plans, specifications, and reports submitted under this chapter shall be sealed, signed, and dated by a licensed professional engineer under W.S. Title 33, Chapter 29 and/or by a licensed professional geologist under W.S. Title 33, Chapter 41, as applicable.

f. General Requirements

All plans and specifications must conform to common and accepted professional practices as determined by the administrator or as defined by applicable division regulations.
III. LOCATION STANDARDS

a. Setback Requirements

i. Commercial oilfield waste disposal facilities shall not be located within:
   A. One (1) mile of an occupied dwelling without the written consent of the owner of the house [W.S. 35-11-306(a) (i)].
   B. One (1) mile of a public or private school without the written consent of the school’s board of trustee or board of directors [W.S. 35-11-306 (a) (ii)].
   C. One (1) mile of the boundaries of any incorporated municipality without the resolution and consent of the governing body of the municipality [good engineering practice as set forth in Chapter 20, Section 34].
   D. One-fourth (1/4) mile of water well permitted for domestic purposes without the written consent of the owner of the well [good engineering practices as set forth in Chapter 20, Section 34].
   E. One-fourth (1/4) mile of a perennial stream unless it is proved to the division that potential adverse effects to the water quality of the stream can be avoided [good engineering practices as set forth in Chapter 20, Section 34].

ii. Setback distances
   A. The setback distances specified in these regulations may be waived with the consent of all parties located within the setback distances described above.
   B. The setback distances are determined from the nearest corner of an occupied dwelling building or school building to the nearest corner of the construction of the treatment facility itself, not including the access road.

b. Surface Water Protection

i. Extraneous surface water, such as stormwater runoff, shall be excluded from entering the wastewater pond or entering the wastewater flow into the pond.

ii. Ponds shall not be located within the ordinary high water mark of perennial rivers, streams, or creeks; not in the bottoms of rivers, streams, creeks, draws, coulees, or other natural drainages into which natural runoff may flow and/or enter.

iii. Ponds shall be protected from structural damage which could be caused by a 100-year flood event.

c. Groundwater Protection

i. Documentation that the facility poses no threat of discharge to groundwater. If an applicant proposes a facility of this nature and can provide the documentation, a subsurface investigation is not required. The documentation shall consist of data which demonstrates that:
   A. Facility construction will not allow a discharge to groundwater by direct or indirect discharge, percolation or filtration; or
   B. The quality of wastewater will not cause any violation of groundwater standards; or
   C. Existing soils or geology will not allow a discharge to groundwater.

ii. If the documentation required above cannot be provided, a subsurface study shall be provided as part of the application to demonstrate the groundwater standards contained in the application Wyoming Water Quality Rules and Regulations are adhered to. Chapter 3, Section 17 provides a detailed description of what is required for a subsurface study.
iii. Whenever the discharge of any pollution or wastes into waters of the state may be caused, threatened or allowed, or the physical, chemical, radiological, biological, or bacteriological properties of any waters of the state may be altered by a facility, a monitoring program shall be required and shall be adequate to insure knowledge of migration and behavior of the pollution or wastes. Such programs shall be described and contained in a submitted application for a permit to construct. The extent and design of a monitoring system will be influenced by the pollution potential of the proposed facility or modification.

iv. A monitoring program, as determined by the administrator to carry out the provisions of the Act, shall consist of any or all of the following:
   A. Operational monitoring
   B. Post-discharge or post-operation monitoring;
   C. Record keeping and reporting.

v. A monitoring program shall include plans for monitoring the quality of affected or potentially affected surface water and groundwater. A monitoring program shall be included as part of the Operation and Maintenance Manual (as required by Chapter 11, Section 24). The monitoring program shall include the following:
   A. Stratigraphic and depth interval to be monitored by each well;
   B. Details of monitor well(s) construction;
   C. Details of how the monitoring program will be carried out, from preparation to site abandonment;
   D. Background water quality obtained from representative samples which characterize the water quality and water quality variability for each monitor well;
   E. Background water quality for wells and surface water which might be impacted. This information will vary depending on site specifics based on geohydrology;
   F. A description of how representative sampling will be accomplished;
   G. Parameter list(s) and frequency of sampling after operation begins.

vi. The permittee is responsible for properly installing, operating, maintaining, and removing all necessary monitoring equipment.

d. Sage Grouse Core Area Protection

In accordance with State of Wyoming Executive Department, Executive Order 2010-4 (replaces 2008-2), Greater Sage-Grouse Core Area Protection, all COWDFs will comply with siting and operational requirements set forth in the above referenced Executive Order. Further information concerning siting in Greater Sage-Grouse Core Areas, please refer to the following website:

IV. DESIGN REPORT STANDARDS

An engineering design report which describes existing conditions, problems, and the proposed solution is required for each project. Components of the plan are described below.

a. Facility Description

A description of the facility site and location, including a scaled site plan and:

i. Present and projected facility property. The landowner of record should also be specified.

ii. Flood protection indicating predicted elevation of 25- and 100-year flood stages.

iii. Present and proposed access.

iv. Distances from current habitation.

v. Prevailing wind direction.

vi. Fencing and/or security.

vii. Topographic features and contours with indicated datum.

viii. Soil and subsurface geological characteristics.

ix. Location of soil borings, rock elevations and groundwater elevations shall be indicated. Provide a soils investigation report of the proposed site.

b. Types of Waste(s)

i. A detailed description of the types of waste(s) to be accepted at the facility, including anticipated generators.

ii. EPA RCRA-exempt oil and gas exploration and production (E&P) wastes include but are not limited to the following:  
   A. Produced water  
   B. Drilling fluids  
   C. Drill cuttings  
   D. Well completion and stimulation products  
   E. Wastes from production separators  
   F. Gas plant dehydration wastes and  
   G. Gas plant sweetening wastes

Further information description of EPA RCRA-exempt waste may be found in the following document:  http://www.epa.gov/epawaste/nonhaz/industrial/special/oil/oil-gas.pdf

iii. Non-exempt wastes which meet non-hazardous waste regulatory levels, as determined by appropriate laboratory analysis, will be approved on a case-by-case basis, at the facility’s request.

In a policy letter dated September 25, 1997, EPA clarified that a mixture is exempt if it contains exempt oil and gas exploration and production (E&P) waste mixed with non-hazardous, non-exempt waste. Mixing exempt E&P waste with non-exempt characteristic hazardous waste,
however, for the purpose of rendering the mixture non-hazardous or less hazardous, could be considered hazardous waste treatment or impermissible dilution.

c. Design Conditions

i. Design conditions shall be described to include:
   A. Proposed effluent standards, if applicable.
   B. Existing and projected flows and flow variations.
   C. Climate conditions at existing or proposed treatment facility site.
   D. Theory of operation.
   E. Odor control operation.
   F. Complete description of existing facilities.

ii. Non-surface water discharging ponds will be designed on the basis of a water balance that considers net evaporation and storage. Non-discharging ponds shall be designed to provide sufficient storage to retain all wastewater and rainfall during the wettest occurring year of a ten-year period.

d. Groundwater Protection

i. A geologic report signed and sealed by a licensed professional geologist in accordance with W.S. 33-41-101 through 33-41-121 that includes:
   A. A stratigraphic column that illustrates the thickness and geologic names of alluvial materials and geologic formations that comprise the unsaturated, or vadose, zone.
   B. A description of the lithology and hydraulic conductivity of materials and geologic formations comprising the unsaturated zone, the first encountered groundwater section, and the uppermost aquifer underlying the proposed facility.
   C. A potentiometric map of the uppermost water table that illustrates the locations and use of all wells within one (1) mile of the proposed facility, clearly identifying those wells producing in whole, or in part, from the uppermost aquifer. Include project borings or wells.
   D. A description of the uppermost aquifer in terms of its confinement or unconfinement, type and amount of porosity.

ii. Baseline groundwater quality: Baseline groundwater quality shall be established for any unconfined aquifer and any other Class I, II, or III aquifers being produced within two (2) miles of the facility. All wells owned or developed by the common ownership controlling the facility shall be sampled and tested one (1) time for the parameters listed in Table 1 of Chapter 8 of the Water Quality Division Regulations. The permit applicant shall make all reasonable efforts within the applicant’s control to obtain water samples from private wells as necessary to test all aquifers.

e. Surface Water Protection

i. Baseline surface water quality: Baseline water quality shall be established for all surface waters within two (2) miles of the facility. Where adequate water quality records are not available, four (4) quarterly samples shall be performed. All quarterly sampling need not be completed when the permit application is submitted.

f. Detailed Plans

i. All plans shall have a suitable title block and legend that includes:
   A. Name of permittee and location of project.
   B. The revision date and number.
   C. North arrow and graphical drawing scale.
D. Name, seal, and signature of the engineer. The engineer must have a current registration in the State of Wyoming.

ii. All plans shall be tied to the reference datum used for the project.

iii. All drawings shall be scaled and dimensioned.

iv. The first page of each plan set shall be a cover sheet with an index to the plans. The second page shall be the site plan referred to in Section 8 (a) (iii).

v. Site location and layout, including existing and proposed buildings and facilities.

vi. Locations and dimensions of piping, including those in and under buildings.

vii. Detailed cross sections and profiles. The location of all cross sections and profiles shall be identified on the plan views.

viii. Schematic flow diagrams and hydraulic profiles.

ix. Detailed cross sections. The location of all cross sections should be identified on the plan views.

x. Construction details. Special emphasis shall be given to primary and secondary containment features and leak detection. All mechanical and electrical devices and lines associated with evaporation pond(s) shall be shown.

g. Specifications

The specifications accompanying the construction drawings shall include the following information for all construction related to oilfield wastewater management:

i. Identification of required performance characteristics of all construction materials.

ii. The type, size, strength, operating characteristics, rating or requirements for all mechanical and electrical equipment; laboratory fixtures and equipment; operating tools; special appurtenances; and chemicals where applicable.

iii. Construction and installation procedures.

iv. Testing requirements to assure materials and equipment meet design standards.

V. CONSTRUCTION/MATERIALS

The construction and operation of commercial oilfield wastewater disposal facility shall meet the following minimum standards.

a. Receiving Facility

Due to the wide variety of wastes, wastewater and site conditions, Wyoming Water Quality Rules and Regulations do not contain specific requirements for receiving facilities. Section 25, Chapter 11 specifies that the latest available scientific information shall be used to demonstrate that violations will not occur.

i. Each application for a permit for a commercial oilfield wastewater disposal facility shall be evaluated on a case-by-case basis and compared to best available technology. The following
information pertaining to the design of the receiving facility, if available, shall be included with the application:

A. Data obtained from a full scale, comparable installation that demonstrates the acceptability of the design.
B. Data obtained from a pilot plant operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design.
C. Data obtained from a theoretical evaluation of the design that demonstrates a reasonable probability of the facility meeting the design objectives.
D. An evaluation of the flexibility of making corrective changes to a constructed facility that does not function as planned.
E. An evaluation of the risk and potential costs of failure of the proposed facility or technology. The financial assurance plan must reflect this evaluation. The administrator may choose to increase or decrease the corrective action bond amount based on this evaluation.

ii. Regardless of the above, it shall be demonstrated that the design of the receiving facility and phase separation facility will remove hydrocarbons from produced water before it is discharged to the evaporation cells.

iii. All open-top tanks in the receiving facility shall be covered with netting or screen to prevent the entry of birds and/or other wildlife. The netting or screen shall be constructed so it remains intact and above the surface of the liquid in the tank even during winds up to 80 mph and/or weighted with snow, ice, or rain.

iv. Structures and other improvements shall be included in closure / post-closure plan. In accordance with Section 3, Chapter 14, salvage values cannot be used to offset demolition costs.

b. Phase Separation Facility

Due to the wide variety of wastes, wastewater and site conditions, Wyoming Water Quality Rules and Regulations do not contain specific requirements for phase separation facilities. Section 25, Chapter 11 specifies that the latest available scientific information shall be used to demonstrate that violations will not occur.

i. Each application for a permit for a commercial oilfield wastewater disposal facility shall be evaluated on a case-by-case basis and compared to best available technology. The following information pertaining to the design of the phase separation facilities, if available, shall be included with the application:

A. Data obtained from a full scale, comparable installation that demonstrates the acceptability of the design.
B. Data obtained from a pilot plant operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design.
C. Data obtained from a theoretical evaluation of the design that demonstrates a reasonable probability of the facility meeting the design objectives.
D. An evaluation of the flexibility of making corrective changes to a constructed facility that does not function as planned.
E. An evaluation of the risk and potential costs of failure of the proposed facility or technology. The financial assurance plan must reflect this evaluation. The administrator may choose to increase or decrease the corrective action bond amount based on this evaluation.
ii. Regardless of the above, it shall be demonstrated that the design of the receiving facility and phase separation facility will remove hydrocarbons from produced water before it is discharged to the evaporation cells.

iii. All open-topped tanks in the phase separation facilities shall be covered with netting or screen to prevent the entry of birds and/or other wildlife. The netting or screen shall be constructed so it remains intact and above the surface of the liquid in the tank even during winds up to 80 mph and/or weighted with snow, ice, or rain.

iv. Structures and other improvements shall be included in closure / post-closure plan. In accordance with Section 3, Chapter 14, salvage values cannot be used to offset demolition costs.

c. Pond Requirements

i. Discharging treatment systems and ponds that require liners to protect groundwater shall consist of a minimum of two cells. The largest cell shall not contain more than 55 percent of the total waste volume at the design capacity.0

ii. Inlet and intra-cell structures for discharging treatment systems shall prevent short circuiting, and shall not erode or disturb the liner, seal or dike.

iii. Outlet structures from a discharging treatment system shall have an overflow device, prevent short circuiting, prevent floating debris from discharging, and keep outlet velocities to a minimum so as not to erode or disturb the receiving channel. Erosion control material shall be designed based on flow velocities and quantities. Ice formation shall neither stop the overflow nor damage the outlet structure.

iv. All pipe protruding through a dike or embankment shall have adequate seepage controls. Capabilities shall exist to drain the ponds for maintenance purposes.

v. A manhole or vented cleanout wye shall be installed prior to the entrance of the influent pipe into the primary pond(s) and shall be located as close to the dike as topography permits.

vi. The influent pipe invert should be at least six inches above the maximum operating level of the pond.

vii. The maximum and minimum water depth shall be determined on a case-by-case basis. However, the design engineer must demonstrate that ponds with less than two feet water depth will not have vegetation problems.

viii. Free board shall be provided to protect embankments and dikes from overtopping from wave action, and shall be a minimum of three feet above the high water level. For ponds less than two acres, two feet of freeboard may be acceptable.

ix. To protect birds and other wildlife, evaporation cells shall be kept virtually oil free at all times, or shall be completely netted or screened to the standards required for open-topped tanks. All produced water received by this facility shall be treated in the receiving and pre-treatment facilities to remove hydrocarbons from the produced water before it is discharged to the evaporation cells. If a sheen develops on any part of the evaporation cell, it shall be removed immediately by skimming, use of sorptive materials and/or by the introduction to the evaporation cell(s) of biological cultures that digest hydrocarbons.
d. Earthwork Standards

i. Soils used in constructing pond bottom and dike cores (not including the liner) shall be relatively incompressible, have low permeability, and be free from organic material or trash. The soil shall be compacted at a water content that shall ensure structural stability, reduce hydraulic seepage, and reduce settling. The soil shall provide an adequate foundation for the liner, if used.

ii. For ponds that are not specified to receive a geomembrane liner, no rocks larger than six (6) inches in length shall be permitted in any of the designated embankment.

iii. For ponds specified to be lined with a geomembrane liner, rocks larger than six (6) inches in length shall not be placed within five (5) feet of the interior slope of any pond embankment. Material containing by volume less than 25 percent of rock larger than six (6) inches and less than 12 inches in length may be placed in the remainder of the embankment.

iv. Outer dike slopes shall not be steeper than one (1) vertical to three (3) horizontal. Flatter slopes may be required to maintain slope stability. Outer dike slopes shall prevent surface runoff from entering the lagoons.

v. Inner dike slopes shall be sloped between one (1) vertical to four (4) horizontal and one (1) vertical to three (3) horizontal. Flatter inner slopes may be allowed where vegetation, due to the shallower slopes, shall not interfere with treatment or the dike's integrity. Interior slopes surfaced with concrete paving or riprap may be constructed at slopes of one (1) vertical to two (2) horizontal.

vi. The minimum top dike width shall be 12 feet to allow access to maintenance vehicles. Top dikes wider than 12 feet shall be required when necessary to assure structural stability.

vii. The minimum freeboard at the maximum operating level shall be three (3) feet.

viii. Interior embankments shall be protected from wave action with riprap, paving, or other erosion resistant material. The following conditions may be exempted from the riprap requirements:
   A. Ponds of one (1) surface acre or less.
   B. Ponds with a geomembrane liner.
   C. Embankments cut into natural slopes when a soil liner is not provided.
   D. Ponds sheltered from wind or where wind velocities are low enough that significant erosion shall not occur.

ix. Exterior of dikes, top of dikes, and all interior dike surfaces where riprap or a seal is not provided shall be covered with topsoil and seeded with suitable dry land grasses to prevent erosion. A coarse uniform graded gravel may be substituted for the vegetation requirement.

x. The seepage through the pond bottom and side walls shall not cause a violation of the groundwater standards as described in Chapter 8, Quality Standards for Wyoming Groundwaters, Water Quality Division Rules and Regulations.

xi. The allowable permeability of a compacted clay liner shall be based on the type of pond construction and the type of oilfield wastewater contained in the pond.

xii. The specifications for compacted clay liners shall be based upon the results of a preliminary testing program and shall contain the type of material, optimum and acceptable range in water content, acceptable range for compaction, and maximum allowable particle size. Compacted clay liners used to protect groundwater quality shall meet the following criteria:
A. The tests for water content and density shall be taken during the placement of each lift of the liner. A total minimum liner thickness of one (1) foot shall be provided and shall be constructed with maximum lifts of one-half (0.5) foot. Either permeability testing of undisturbed core samples from the in-place seal, or detailed tests such as particle size distribution and Atterberg limits shall be conducted. Detailed tests should confirm that the soil specified was used for liner construction. One (1) test shall be conducted per acre per lift. For core sampling of the in-place liner, one (1) core of the completed liner shall be tested per acre. The permittee shall provide the division written certification by a Wyoming registered professional engineer that the soil liner was constructed according to the permit and that final testing indicated results within the allowable limits established by the permit.

B. For compacted clay liners, a method of maintaining the seal at or above optimum moisture conditions is required.

C. Unlined ponds or ponds using compacted clay liners as the primary liner shall require a subsurface investigation and monitoring plan according to the provisions of Chapter 3, Section 15 (b), (c), and (d).

xiii. Geosynthetic clay liners installed according to the manufacturer’s instructions are acceptable. Geosynthetic clay liners shall have a maximum hydraulic conductivity of 1 X 10⁻⁸ cm/sec. The liner manufacturer shall have more than ten million square feet of its product installed. The liner installation contractor shall be approved by the manufacturer. Geosynthetic clay liners used as primary liners require:

A. Surface erosion and abrasion protection provided shall be acceptable to the liner manufacturer. The factor of safety for slope failure of the composite liner shall be shown to be at least 1.5:1. Primary geosynthetic clay liners shall be installed over a compacted clay liner. The compacted clay liner shall have a minimum thickness of one (1) foot and a maximum permeability of 1 X 10⁻⁵ cm/sec.

B. Compacted clay liners shall be constructed, tested, and certified in accordance with the provision of Section 35 (d) (i) (A). This type of construction shall satisfy the requirements for a subsurface investigation as required by the provisions of Chapter 3, Section 15

C. A monitoring system installed according to the provisions of Chapter 3, Section 15 (b) shall be required.

D. Geosynthetic clay liners may be used as secondary liners. Overlying leachate collections systems shall be sand blankets at least four (4) inches in thickness. Synthetic drainage media shall not be used with geosynthetic clay liners.

xiv. Geomembrane liners constructed of polyvinyl chloride or polypropylene shall be at least 30 mils in thickness. High density polyethylene liners shall be at least 60 mils in thickness. The liner manufacturer shall have more than ten million square feet of its product installed. Geomembrane liners installed and operated according to this section shall satisfy the requirements for a subsurface investigation and monitoring as required by the provisions of Chapter 3, Section 15 (b). Secondary containment will be required for all geomembrane liners. The secondary containment shall consist of one of the following:

A. A compacted clay liner with a maximum permeability of 1 X 10⁻⁶ cm/sec.

B. A geosynthetic clay liner.

C. A geomembrane liner with a minimum thickness of 20 mils backed by a compacted clay liner one (1) foot thick with a maximum permeability of 1 X 10⁻⁵ cm/sec.

D. Compacted clay liners shall be constructed, tested, and certified in accordance with the provision of Chapter 20, Section 35 (d) (i) (A).
xv. Geomembrane liners require a secondary containment system.
   A. The drainage layer between the primary and secondary liners shall have a minimum hydraulic transmissivity of one (1) gpm/foot. Synthetic drainage media may be used when the secondary liner is a geomembrane. All other construction shall require a durable granular filter blanket with a minimum thickness of four (4) inches. The drainage layer shall have a minimum grade of 0.4 percent.
   B. Perforated or slotted collection lines shall be installed in the drainage layer arranged to create sub-cells with a maximum area of two (2) acres or less. A means of monitoring the collection system to isolate a leak to an individual sub-cell shall be provided. No portion of the drainage layer should be more than 100 feet from a collection line.
   C. The collection lines shall drain to a sump enclosed by the secondary liner. The sump shall be designed so that the maximum high liquid level during operating conditions is below the invert of any collection line discharging to the sump. The sump shall be large enough to allow the pump installed to operate with a minimum pumping time of two (2) minutes between the automatic start and stop levels. A high level alarm shall be installed.
   D. The recovery pump in the sump shall be self-priming and capable of pumping a volume at least four (4) times the failure rate of flow designated in the permit for the lagoon. The pump shall have a totalizing hour meter that records total time of operation.
   E. Monitoring requirements are as follows:
      • High level alarms shall be continuously monitored.
      • The totalizing hour meters shall be read at least weekly. If the calculated recovery rate exceeds the allowable for the smallest sub-cell, the inflow from each sub-cell must be measured to determine individual sub-cell compliance.
   F. Reporting and required repair actions are as follows:
      • If the recovery rate exceeds 400 gpd/acre for any sub-cell as delineated by the recovery system, the permittee shall notify the division within seven (7) days. Repair of the primary liner must be scheduled within 12 months.
      • If the recovery rate exceeds 800 gpd/acre for any sub-cell as delineated by the recovery system, the division shall be notified within 48 hours. Repair of the primary liner must be scheduled within 60 days.
      • If the high alarm level is reached, the division must be notified immediately. Repairs must be initiated immediately.

e. Aeration/Enhanced Evaporation Systems
   Due to the wide variety of wastes, wastewater and site conditions, Wyoming Water Quality Rules and Regulations do not contain specific requirements for aeration / enhanced evaporation systems. Section 25, Chapter 11 specifies that the latest available scientific information shall be used to demonstrate that violations will not occur.
   
i. Each application for a permit for a commercial oilfield wastewater disposal facility shall be evaluated on a case-by-case basis and compared to best available technology. The following information pertaining to the design of the aeration / enhanced evaporation systems, if available, shall be included with the application:

   A. Data obtained from a full scale, comparable installation that demonstrates the acceptability of the design.
   B. Data obtained from a pilot plant operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design.
   C. Data obtained from a theoretical evaluation of the design that demonstrates a reasonable probability of the facility meeting the design objectives.
   D. An evaluation of the flexibility of making corrective changes to a constructed facility that does not function as planned.
E. An evaluation of the risk and potential costs of failure of the proposed facility or technology. The financial assurance plan must reflect this evaluation. The administrator may choose to increase or decrease the corrective action bond amount based on this evaluation.

ii. Regardless of the above, it shall be demonstrated that the design of aeration / enhanced evaporation systems will not discharge wastewater to the surface waters of the state.

iii. Structures and other improvements shall be included in closure / post-closure plan. In accordance with Section 3, Chapter 14, salvage values cannot be used to offset demolition costs.

f. Active Wastewater Treatment and Processes

Due to the wide variety of wastes, wastewater and site conditions, Wyoming Water Quality Rules and Regulations do not contain specific requirements for active water treatment facilities. Section 25, Chapter 11 specifies that the latest available scientific information shall be used to demonstrate that violations will not occur.

i. Each application for a permit for a commercial oilfield wastewater disposal facility shall be evaluated on a case-by-case basis and compared to best available technology. The following information pertaining to the design of active water treatment facilities, if available, shall be included with the application:

A. Data obtained from a full scale, comparable installation that demonstrates the acceptability of the design.
B. Data obtained from a pilot plant operated under the design condition for a sufficient length of time to demonstrate the acceptability of the design.
C. Data obtained from a theoretical evaluation of the design that demonstrates a reasonable probability of the facility meeting the design objectives.
D. An evaluation of the flexibility of making corrective changes to a constructed facility that does not function as planned.
E. An evaluation of the risk and potential costs of failure of the proposed facility or technology. The financial assurance plan must reflect this evaluation. The administrator may choose to increase or decrease the corrective action bond amount based on this evaluation.

ii. Regardless of the above, it shall be demonstrated that the design of active water treatment systems will not cause a violation of surface and/or ground waters of the state.

iii. Design of active water treatment must comply with applicable sections of Chapters 3 and 11.

iv. Structures and other improvements shall be included in closure / post-closure plan. In accordance with Section 3, Chapter 14, salvage values cannot be used to offset demolition costs.
VI. OPERATION AND MAINTENANCE PLAN

An operation and maintenance plan is required for each new or modified commercial oilfield wastewater disposal facility. The plan shall be finalized and approved prior to the approval of the permit. The plan shall address the following items, as appropriate for the facility. Additional items may be required based on the facility.

a. Facility Management
   i. Operator
      A. Responsibility
      B. Organizational Structure
   ii. Staffing
      A. Man Hours
      B. Personnel
      C. Qualifications
      D. Training
   iii. Permit
      A. General
      B. Permit and Permit Conditions
      C. Facility Drawings
      D. Maintenance versus Modification Guidelines
      E. Permit Guidelines
         • Modification
         • New construction
   iv. File System
      A. Central Location
      B. Regulatory Agency Access
      C. Records
         • Manifests
         • Sampling
         • Testing
         • Inspection reports
         • Maintenance reports
         • Facility log books
   v. Report System
      A. Operator (internal)
         • Submittal schedule
         • Routing and contacts
         • Information
      B. Regulatory Agencies
         • Submittal schedule
         • Contacts
         • Information

b. Facility Operations and Maintenance
   i. Facility
      A. Description
• Receiving facilities
• Phase separation facilities
• Active water treatment facilities
• Evaporation pond(s)
• Aeration/Enhanced evaporation system(s)
• Monitor wells
• Miscellaneous

B. Waste Disposal
• Authorized / Unauthorized wastes
• Manifests
• Unloading area

C. Access
• Business hours
• Authorized personnel
• Closure
• Facility log book

ii. Receiving Facilities
A. Description
• Basic Components
• Purpose of receiving facilities

B. Operations
• Facility security
• Unloading
• Waste acceptance procedures
• Pipe system
• Inspections (by operator)
• Record keeping requirements

C. Maintenance
• Schedule
• Reports

iii. Phase Separation Facilities
A. Description
• Basic Components
• Purpose of phase separation facilities

B. Operations
• Flagging and netting
• Freeboard
• Pipe system
• Oil recovery (for recycling)
• Sludge wasting
• Inspections (by operator)

C. Maintenance
• Schedule
• Reports

D. Troubleshooting
• Oil carryover
• Upset
• Off-spec wastewater
iv. **Active Water Treatment Facilities (if present)**
   A. Description
      • Basic Components
      • Purpose of active water treatment facilities
      • Treatment process
      • Water treatment specifications
   B. Operations
      • Process
      • Pipe system
      • Chemical usage (if applicable)
      • Waste disposal
      • Treated water disposal
      • Inspections (by operator)
   C. Maintenance
      • Schedule
      • Reports
   D. Troubleshooting
      • Out-of-spec treated water
      • Plant upset

v. **Evaporation Pond(s)**
   A. Description
      • Basic Components
      • Purpose of Evaporation pond(s)
   B. Operations
      • Freeboard
      • Piping system
      • Aeration system (if present)
      • Leak detection
      • Oil recovery (for recycling)
      • Water wasting
      • Sludge wasting
      • Inspections (by operator)
   C. Maintenance
      • Schedule
      • Reports
   D. Troubleshooting
      • Oil carryover
      • Leak detection

vi. **Aeration / Enhanced Evaporation Systems (if present)**
   A. Description
      • Basic Components
      • Purpose of aeration / enhanced evaporation system
   B. Operations
      • Operational conditions
      • Piping system
      • Pumping system
      • Inspections (by operator)
   C. Maintenance
      • Schedule
• Reports
D. Troubleshooting
• Overspray
• Pump failure

vii. Monitor wells
A. Description
• Basic Components
• Purpose of monitor wells
B. Operation
• Sampling
• Testing
• Inspection (by operator)
C. Maintenance
• Schedule
• Reports
D. Troubleshooting

viii. Miscellaneous
A. Description
• Grounds
• Roads
• Signs
• Gates and security
• Fencing
B. Purpose
• Access
• Security
C. Operations
• Inspections (by operator)
D. Maintenance
• Schedule
• Reports

C. Facility Emergencies
i. Definitions
A. Emergency
• Injury
• Fire
• Release
B. Reference WWQRR Chapters 4 and 7
C. Reference Permit and Permit Conditions

ii. Notification
A. Operator
• Emergency Coordinator and alternate
• Phone numbers
• Addresses
B. Regulatory Agencies
   • Contacts
   • Phone numbers
   • Addresses
C. Other Emergency Contacts
   • Area ambulance service / hospital
   • Wyoming Highway Patrol
   • County emergency response coordinator
   • County fire department
   • County Sheriff’s department
   • Landowner

iii. Contingency Plans (for respective emergencies)
   A. Procedures
      • Assessment
      • Containment (if applicable)
      • Remediation (if applicable)
      • Facility closure (if applicable)
      • Documentation

iv. Follow-up
   A. Monitoring
      • Monitor wells
      • Leak detection
   B. Inspection
      • Operator
      • Regulatory Agencies
   C. Maintenance
      • Operator
   D. Modifications
      • Permit application package
   E. New construction
      • Permit application package
   F. Reporting
      • Internal
      • Regulatory Agencies

VII. CLOSURE/POST CLOSURE PLAN

Permits for regulated facilities require closure, post-closure and corrective action financial assurance plans as prescribed in this chapter for the purpose of assuring that operators of these facilities are financially responsible for protection of public health and the environment. Chapter 14 contains general requirements governing closure, post-closure, care and corrective action for violations of a permit, standard, rule or requirement. These requirements may be supplemented by site-specific closure, post-closure care and corrective action permit conditions. Together with the factors used to produce cost estimates, these maintenance requirements form the basis of the financial assurance standards included in this chapter.
a. Closure/Post Closure Requirements

i. Notification
   A. An operator intending to close a regulated facility shall notify the department of the intention to do so at least 180 days prior to the anticipated date for initiation of closure. Simultaneous notice shall be made by the operator to the governing body of each locality and adjacent property owners by certified or registered mail.
   B. The operator shall post one sign notifying all persons of the closing and prohibition against further receipt of waste materials. Further, suitable barriers shall be installed at former accesses to prevent new waste from being deposited.

ii. Closure/Post Closure Standards
   A. Closure and post-closure maintenance shall occur in accordance with approved plans. A closure plan and a post-closure plan shall be submitted with the permit application. The operator shall submit a revised closure plan and post-closure plan to the department for review and approval as necessary to describe any plan changes.
   B. The operator shall close the facility in a manner that minimizes the need for post-closure maintenance and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, the post-closure escape of leachate, surface runoff or waste decomposition products to the ground water, surface water or the atmosphere. The post-closure monitoring period shall continue for a minimum of five (5) years after the date of completing closure of the regulated facility. The minimum post-closure monitoring period shall be extended if the department determines it is needed to protect human health and the environment.

iii. Inspection
   A. The department shall inspect all closed regulated facilities to determine if the closure is complete and adequate in accordance with the approved plan after being notified by the operator that closure has been completed. The department shall provide written inspection results to the operator of a closed facility after the inspection. If the closure is not satisfactory, the department shall specify necessary construction or such other steps as may be appropriate to bring unsatisfactory sites into compliance with closure requirements.
   B. Notification by the department that the closure is satisfactory does not relieve the operator of responsibility for corrective action in accordance with regulations of the department to prevent or abate problems caused by the regulated facility which are subsequently discovered.

b. Correction Action Requirements

i. Notification
   A. The department shall notify the operator of the need to take corrective action to remedy a violation of a permit condition, standard, rule or requirement relating to a regulated facility. The notification shall describe the nature of the violation.
   B. If deemed necessary by the department, the operator will be required to close the facility and cease further receipt of waste materials.
   C. If the facility is closed, the operator shall post one sign notifying all persons of the closing and prohibition against further receipt of waste materials. Further, suitable barriers shall be installed at former accesses to prevent new waste from being deposited.

ii. Remediation Activities
   In the event of a release, the operator shall:
   A. Initiate immediate measures to:
c. Prevent further release to the environment.
   Prevent further migration of the released substance into surrounding soils and waters of the state.
   Identify, monitor and mitigate any safety hazards or health risks associated with the violation.

B. Prepare a plan to conduct an investigation of the release, the release site and any surrounding area which may be affected by the release. The plan shall include:
   A comprehensive subsurface investigation to define the extent and degree of contamination.
   A schedule for conducting the investigation.
   A cost estimate for a third party to perform the tasks identified by the plan.

C. Submit the investigation plan to the department within 30 days. The extent of contamination study should begin as soon as the plan has been approved and all necessary permits obtained.

D. Conduct the extent of contamination study in accordance with the approved plan and submit a written report of the findings to the department.

E. If required by the department, develop a comprehensive plan for mitigation and clean-up. The remediation plan shall be submitted to the department for approval. The remediation plan shall be implemented as soon as the department has approved the plan and all necessary permits have been obtained. The remediation plan shall contain an estimate of the costs for a third party to perform the tasks identified by the plan.

c. Financial Assurance

In order to assure that the costs associated with protecting the public health and safety from the consequences of an abandonment, or a failure to properly execute closure, post-closure care or required corrective action and clean-up of a regulated facility are recovered from the operator of such a facility, the operator shall provide financial assurance in one, or a combination of the forms described in this chapter including a self bond, a surety bond, a federally insured certificate of deposit, government-backed securities, or cash. Such financial assurance shall be in the amount calculated as the cost estimate using the procedures set forth in Sections 3(e)(i), 3(e)(ii) and 3(e)(iii) of Chapter 14. Evidence of the selected forms of financial assurance shall be filed with the department as part of the permit application procedures and prior to the issuance of an operating permit. The department may reject the proposed forms of assurance of financial responsibility if the evidence submitted does not adequately assure that funds will be available as required by these rules. The operator shall be notified in writing within 60 days of receipt of the evidence of financial assurance of the decision to accept or reject the proposed forms of financial assurance.

All financial assurance documents MUST include the legal description of the facility. The legal description must be prepared and sealed by a registered surveyor, AND must be filed at the appropriate courthouse office. The legal description, including the county of record, book and page, must be attached to the financial assurance document as “Exhibit A”. Exhibit A must reference county, book and page where it was filed, and must be signed and notarized by the principal and surety.

d. Cost Estimates

i. Cost Estimate for Facility Closure:

   A. In submitting a closure plan as required by these regulations, the operator of a regulated facility shall include therein an itemized written estimate of the cost of closing the facility. The estimated closing cost shall be determined by the department on a case-by-case basis, considering information supplied by the operator.
B. The estimated closing cost shall be based on the work required for a third party contractor to effect proper closure at the most expensive point in the life of the facility. Those factors to be considered in estimating the closure cost shall include:
   - The size and topography of the site.
   - The daily or weekly volume of waste to be received at the site.
   - Availability of cover and fill material needed for site grading.
   - The type of waste to be received at the site.
   - Disposal method and sequential disposal plan.
   - The location of the site and the character of the surrounding area.
   - Requirements for surface drainage.
   - Operation and maintenance of the leachate collection and treatment system, and, the off-site disposal of leachate.
   - Environmental quality monitoring system.
   - Structures and other improvements to be dismantled and removed. Salvage values cannot be used to offset demolition costs.
   - Site storage capacity for solid waste, incinerator residue and compost material.
   - Off-site disposal requirements.
   - Vector control requirements.
   - A minimum of fifteen percent (15%) variable contingency fee to cover other closure costs as determined appropriate by the department.
   - Other site specific factors.
C. Revised closure cost estimates will be submitted to the department on an annual basis. When the revised estimates are approved by the department, the operator shall submit revised financial assurance for the revised closure costs.

ii. Cost Estimate for Facility Post-Closure:
A. In submitting a closure plan as required by these regulations, the operator of a regulated facility shall include therein a written estimate of the cost of post-closure care, monitoring and maintenance. Unless onsite disposal of wastes or residues from the treatment or storage of wastes is planned or required, an incinerator, resource recovery facility, compost facility or storage surface impoundment will not be required to include a post-closure cost estimate in its closure plan. The estimated post-closure cost shall be determined by the department on a case-by-case basis considering information supplied by the operator. Such costs shall be based on the work required for a third party contractor.
B. Those factors to be considered in estimating post-closure maintenance costs shall include:
   - The size and topography of the site.
   - The type and quantity of waste received.
   - Disposal method and sequential disposal plan.
   - The potential for significant leachate production and the possibility of contaminating water supplies.
   - Environmental quality monitoring systems.
   - Soil conditions.
   - The location of the site and the character of the surrounding area.
   - A minimum of fifteen percent (15%) contingency fee to cover other post-closure costs as determined appropriate by the department.
   - Other site specific factors.
C. Estimated costs of post-closure activities shall be determined on a case-by-case basis. Revised post-closure cost estimates will be submitted to the department on an annual basis. When the revised estimates are approved, the operator shall submit revised financial assurance for the revised post-closure costs.
iii. **Cost Estimate for Corrective Action:**
   A. The operator of a commercial oil field disposal system regulated under W.S. 35-11-306 or a commercial sludge facility regulated under W.S. 35-11-307 in submitting an application for a construction permit as required by Chapter III, Wyoming Water Quality Rules and Regulations shall include a written estimate of the cost of corrective actions to remediate a release from the facility. The estimated cost of corrective action and clean-up of a release shall be determined by the department on a case-by-case basis considering information submitted by the operator. Such costs shall be based on the work required for a third party contractor.
   B. The factors to be considered in estimating the cost of corrective actions and clean-up of a release shall include the following:
      - Soils, geologic and hydrogeologic conditions at the site.
      - The type and quantity of waste received.
      - Disposal method and sequential disposal plan.
      - The potential for significant leachate production and the possibility of contaminating groundwater.
      - Environmental quality monitoring systems.
      - The location of the site and the character of the surrounding area.
      - A minimum of fifteen percent (15%) contingency fee to cover other corrective action and clean-up costs as determined appropriate by the department.
      - The ability of the facility to prevent and detect a release and to facilitate clean-up activities. The criteria used to evaluate this ability shall include design, construction, operation, monitoring and contingency plans submitted as part of the application package.
      - The class, use, value and environmental vulnerability of surface and groundwater resources which may be impacted by a release.
      - Other site specific factors.

**e. Financial Assurance**

i. **General:**
   A. For each regulated facility for which a permit is applied, financial assurance shall be provided for closure and post-closure activities, and for corrective action if required under Section 3(e) (iii).
   B. Determination of the financial assurance requirements for corrective action and clean-up of commercial oil field waste disposal and commercial sludge facilities will be made by the Water Quality Division when the construction permit application is evaluated.
   C. The financial assurance will be calculated based on ALL of the development on the property and not tied to a specific permit to construct.
   D. All financial assurance documents MUST include the legal description of the facility. The legal description must be prepared and sealed by a registered surveyor, AND must be filed at the appropriate courthouse office. The legal description, including the county of record, book and page, must be attached to the financial assurance document as “Exhibit A”. Exhibit A must reference county, book and page where it was filed, and must be signed and notarized by the principal and surety.

ii. **Forms of Financial Assurance:**
   Financial assurance may be provided in one or a combination of the following forms executed in the amount calculated as the estimated closure and post-closure costs in accordance with W.S. 35-11-307(a) or W.S. 35-11-306(d) of the act. These forms may also be available for financial assurance for corrective actions at a regulated facility.
   A. Self-bond;
B. Surety bond;
C. Federally insured certificates of deposit;
D. Government-backed securities;
E. Cash

f. Transfer of Permits

Permits may be transferred from one operator to another only if the new operator can demonstrate compliance with the financial assurance requirements of this chapter. Construction permit ownership will be transferred in accordance with Section 10, Chapter III Wyoming Water Quality Rules and Regulations.

VIII. OPERATION

Under W.S. 35-11-306, any person who knowingly locates, constructs or operates a commercial oil field waste disposal facility in violation of statues in the Environmental Quality Act of Wyoming is subject to the penalties provided by W.S. 35-11-901.

a. Construction

Section 5, Chapter 3, Wyoming Water Quality Rules and Regulations specifies that the construction, installation, or modification of facilities shall be allowed only in accordance with the terms and conditions of issued permits and provisions of Wyoming Water Quality Rules and Regulations.

Under Section 11, Chapter 3, Wyoming Water Quality Rules and Regulations, a permittee shall conduct all construction, installation, or modification of any facility permitted consistent with the terms and conditions of the permit. Unauthorized changes, deviations, or modifications will be a violation of the permit.

b. Operation

Section 11 states that a permittee shall conduct the operation in accordance with statements, representations, and procedures presented in the complete application and supporting documents, and permit conditions.

If deemed necessary by the division, the permittee shall be required to close the facility and cease acceptance of all wastewater until operations are conducted in accordance with applicable regulations, permit conditions, and/or operation and maintenance plan.

c. Suspension or Revocation of a Permit

Section 16, Chapter 3, Wyoming Water Quality Rules and Regulations states that a permit may be suspended or revoked for:

i. Noncompliance with the terms of the permit; or
ii. Unapproved modifications in design or construction; or
iii. False information submitted in the application; or
iv. Changing site conditions which would result in violations of applicable regulations; or
v. Non-compliance with requirements of Section 18 (state and local water quality management plans); or
vi. Any other reason necessary to effectuate applicable statutes, standards or regulations.
d. Acceptable Wastes

Commercial oilfield wastewater disposal facilities are authorized to accept EPA RCRA-exempt oil and gas E&P wastes. Permit conditions will specify if the facility is authorized to accept drilling fluid and/or production wastes. Commercial oilfield wastewater disposal facilities were not permitted for hazardous wastes and are not intended to provide environmental protection required for disposal of hazardous wastes.

i. EPA RCRA-exempt oil and gas exploration and production (E&P) wastes

E&P wastes include but are not limited to the following:

A. Produced water
B. Drilling fluids
C. Drill cuttings
D. Well completion and stimulation products
E. Wastes from production separators
F. Gas plant dehydration wastes and
G. Gas plant sweetening wastes

Further information description of EPA RCRA-exempt waste may be found in the following document: http://www.epa.gov/epawaste/nonhaz/industrial/special/oil/oil-gas.pdf

ii. Non-exempt E&P wastes

Non-exempt E&P wastes which are considered non-hazardous (as defined in RCRA) will be approved on a case-by-case basis, at the facility’s request.

In a policy letter dated September 25, 1997, EPA clarified that a mixture is exempt if it contains exempt oil and gas exploration and production (E&P) waste mixed with non-hazardous, non-exempt waste. Mixing exempt E&P waste with non-exempt characteristic hazardous waste, however, for the purpose of rendering the mixture non-hazardous or less hazardous, could be considered hazardous waste treatment or impermissible dilution.

WDEQ will require hazardous waste characteristic analysis of all non-exempt wastes proposed to be disposed of at a commercial oilfield wastewater disposal facility. Additional sampling maybe required by WDEQ based on the type of waste to be disposed. If any of the hazardous waste regulatory levels are exceeded, the wastes must be disposed at an approved RCRA facility.

WDEQ will require hazardous waste characteristic analysis for all oil and gas field exempt wastes except produced water and drilling fluids. If the regulatory levels are exceeded, the wastes can be placed in a commercial pit after the operator is notified and WDEQ approval is provided on a case-by-case basis.

e. Monitoring

All monitoring shall be conducted in accordance with the permit conditions, the Operation and Maintenance Plan, and/or as required by WDEQ regulations.

i. Leak Detection

The leak detection system inspection pipes are to be checked weekly for the first month and monthly thereafter with a log kept of the inspection results. If fluid is found, WDEQ is to be notified immediately, and samples are to be pulled from the inspection pipes and the evaporation cell(s) and tested for total petroleum hydrocarbons (TPH) by EPA Method 8015.
(modified for gasoline and diesel range hydrocarbons), chlorides, total dissolved solids (TDS) and sulfates. Results are to be reported to WDEQ as soon as they are available.

If a leak is confirmed, the pond(s) will be pumped dry of all wastewater. No additional wastewater will be placed into the pond(s) until a complete inspection and test of the liner is completed.

ii. Groundwater Monitoring
Measurement of depth to groundwater and testing of groundwater is to be performed prior to filling any ponds at this facility. Groundwater monitoring will be conducted on a quarterly basis and results reported to DEQ within a month after receiving laboratory analytical reports. Samples will be submitted for the analysis as specified in the permit or as modified by WDEQ. The analyte list and monitoring frequency are subject to revision as needed by WDEQ.

iii. Pit Monitoring
Fluids in the ponds are to be checked annually for the following constituents. Each pond will be sampled and analyzed separately in accordance with permit conditions. The analyte list and monitoring frequency are subject to revision as needed by WDEQ.

iv. Other Monitoring
All open-topped tanks shall be covered with netting or screen to prevent the entry of birds and/or other wildlife. The netting or screen shall be constructed so it remains intact and above the surface of the liquid in the tank even during winds up to 80 mph and/or weighted with snow, ice, or rain.

To protect birds and other wildlife, evaporation cells shall be kept virtually oil free at all times, or shall be completely netted or screened to the standards required for open-topped tanks. All produced water received by this facility shall be treated in the receiving and pre-treatment facilities to remove hydrocarbons from the produced water before it is discharged to the evaporation cells. If a sheen develops on any part of the evaporation cell, it shall be removed immediately by skimming, use of sorptive materials and/or by the introduction to the evaporation cell(s) of biological cultures that digest hydrocarbons.

f. Annual Report
An annual report will be submitted to WDEQ by April 1 of each year. The annual report will include relevant details of the construction, modification, and operation details of the facility from the previous year, any anticipated construction, modification and/or operational changes for the upcoming year. The report will include a discussion and analysis of the groundwater monitoring, leak detection monitoring and pond analysis. A listing of all non exploration and production wastes accepted by the facility will also be included in the annual report. This listing shall include generator, type of waste, amount and date of disposal. The annual report will also include a review of the closure and post closure requirements, including financial costs. A renewal of the bond will be required as part of the annual report. Reporting requirements are subject to modification by WDEQ.

g. Financial Assurance
Financial assurance cost estimates are to be submitted to WDEQ by April 1 of each year, as part of the annual report. Once cost estimates are approved, financial assurance documents must be submitted to WDEQ by July 1 of each year.
h. **Spill Reporting**

Under the regulations, anyone owning or having control of hazardous substances which is released shall:

i. Immediately take appropriate action to stop and contain the release.

ii. Immediately notify WDEQ in the event of the following:

A. Any amount of oil or hazardous substance enters or threatens to enter waters of the state;

B. Any release involving more than ten (10) barrels (420 gallons) of crude oil, petroleum condensate, produced water, or combination thereof;

C. Any release involving more than 25 gallons of refined crude oil products such as gasoline, diesel, etc.

iii. Immediately proceed to correct the cause of the release.

iv. Clean-up released materials in a timely and diligent manner.

v. Submit a complete written report to the Water Quality Division within seven days of the release.

i. **Agency Inspections**

The owner of the facility shall allow authorized representatives of the WDEQ, upon presentation of credentials, in compliance with the permittee’s established, printed site security protocols, and at reasonable times to:

i. Enter upon the premises of the operation, land application areas, or premises where records are kept as required by the permit.

ii. Read or copy any records required to be kept under the terms of the permit.

iii. Inspect any facilities, equipment, and land application areas covered under the permit.

iv. Sample any waste, wastewater, sludge, residuals, and byproducts covered under the provisions of the permit.

IX. **LOCAL, STATE, AND FEDERAL AGENCIES**

a. **County Planning and Zoning**

Approval of a permit for a commercial oilfield wastewater disposal facility does not relieve the permittee of the responsibility to comply with any local requirements including land use, zoning, or permitting requirements established by any local government. It is the permittee’s responsibility to obtain required local permits.

b. **State Agencies**

A permit does not allow the permittee to violate any provision of the Environmental Quality Act or any other applicable regulation.
i. The Wyoming Department of Environmental Quality, Air Quality Division requires new sources of air emissions to obtain a permit.

ii. The Wyoming State Engineer regulates the appropriation and use of water and the safety of dams.

iii. All water well construction requires a permit from the State Engineer. Appropriate water rights must be granted by the State Engineer before the use or detention of surface water.

iv. Lagoons with above ground berms or dikes may be subject to regulations administered by the State Engineer governing safety of dams.

v. The Wyoming Department of Environmental Quality, Water Quality Division requires a storm water permit for construction activities including clearing, grading, and excavation activities that disturb a total land area as designated by the National Pollutant Discharge Elimination System (NPDES) Regulations.

vi. Disposal / acceptance of any hazardous waste is expressly not permitted. The Wyoming Department of Environmental Quality, Solid and Hazardous Waste Division regulates disposal of hazardous and non RCRA-exempt E&P wastes.

vii. The Wyoming Oil and Gas Conservation Commission (WOGCC) is the state agency authorized to regulate oil and gas exploration and production waste. Landfarming and landspreading must be approved by the DEQ. Jurisdiction over road-spreading and road application is shared by the DEQ and the WOGCC.

c. Federal Agencies

The permittee is responsible for complying with any federal regulations.

i. **U.S. Environmental Protection Agency**
   The U.S. Environmental Protection Agency (the EPA or the Agency) is entrusted with protecting human health and safeguarding the natural environment — air, water, and land. Disposal of Naturally Occurring Radioactive Materials (NORM) is regulated by EPA.

   Regulations promulgated by the EPA are published in Code of Federal Regulations, Title 40 (40 CFR).

ii. **U.S. Fish and Wildlife Service**
   The U.S. Fish and Wildlife Service (USFWS) regulates provisions of the Migratory Bird Treaty Act. In addition, the USFWS investigates bird and wildlife deaths associated with operations at commercial oilfield wastewater disposal facilities.

iii. **U.S. Bureau of Land Management**
   The Bureau of Land Management (BLM), a bureau in the U.S. Department of the Interior, has jurisdiction over onshore leasing, exploration, development, and production of oil and gas on federal lands. In addition, the BLM approves and supervises most oil and gas operations on American Indian lands. The BLM regulations governing onshore oil and gas operations are codified at 43 CFR Part 3160 (Onshore Oil and Gas Operations). General requirements for operating rights of owners and operators include compliance with applicable laws and regulations, the lease terms, Onshore Oil and Gas Orders, Notices to Lessees and Operators (NTLs), and other orders and instructions of the authorized officer.
iv. **U.S. Corp of Engineers**

The mission of the Corps of Engineers Regulatory Program is to protect the nation’s aquatic resources, while allowing reasonable development through fair, flexible and balanced permit decisions. The Corps evaluates permit applications for essentially all construction activities that occur in the nation’s waters, including wetlands. Corps permits are also necessary for any work, including construction and dredging, in the nation’s navigable waters.