Preparedness, Prevention, and Contingency (PPC) Plan

Pennsylvania
Conventional Operations

In Case of Emergency Call:.....9-1-1

24-Hour Company Contact Number: 724-743-6700

PA Emergency Contact (PADEP):.....1-800-541-2050

PA Emergency Contact (PEMA): 1-800-424-7362

Range Resources - Appalachia, LLC
3000 Town Center Blvd.
Canonsburg, PA 15317

Effective June 2019

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APPENDICES

1.0 Executive Summary

This Preparedness, Prevention and Contingency (PPC) Plan governs Range Resources - Appalachia, LLC's (RRC) Pennsylvania conventional oil and gas operations. It has been developed in accordance with 25 Pa. Code § 91.34 & § 78.55 to outline the measures taken to prevent potential pollution to waters of the Commonwealth.

This PPC Plan is an integral part of Range's environmental compliance, safety, and security programs. It is designed to provide preventative measures for foreseeable workplace occurrences by summarizing the operational activities at conventional oil and gas well sites, identifying the related regulated substances and wastes, and identifying the method for control and disposal of those substances or wastes.

The objective of this PPC Plan is to provide clear guidance to Range employees and contractors on how to effectively and efficiently prepare for and respond to incidents with the potential for causing accidental releases to waters of the Commonwealth. This PPC Plan will be reviewed on a regular basis with all involved Range personnel.

Mr. Jeremy Matinko is the administrator of this PPC Plan and is responsible for its implementation and maintenance. Reviews and revisions of this PPC Plan will be completed annually unless plan failure, operational changes, or regulatory revisions necessitate otherwise. Any questions, comments, or suggestions regarding this PPC Plan should be directed to Mr. Matinko.

Authorized for Implementation:
Jeremy Matinko

06/20/2019

Director of Environmental Compliance | Date Implemented

2.0 Plan Review and Implementation Record

2.1 Periodic Plan Review and Revisions

The following table is a record of the revisions made to this plan since the original date of plan implementation. It is required by the Pennsylvania Department of Environmental Protection (PADEP) that the plan be reviewed annually. This PPC Plan will also be reviewed and revised if any of the following occur:

- an applicable statute or regulation is revised;
- the Plan fails in an emergency;
- there is a change in the design, construction, operation, or maintenance that materially affects the operation's potential for discharge;
- the list of Emergency Coordinators changes;
- the list of emergency response equipment changes; or
- as otherwise directed by Range management.

Date	Revision	Signature	Comments
2019-02-09	1		Update plan administrator and format

2.2 Outstanding Plan Aspect Implementation

This PPC plan is in effect as of the date indicated in Section 1.0. The following table outlines the actions that must be taken in order to address elements for this PPC Plan that are missing or incomplete. Any field modifications and/or recommended changes to this PPC Plan to the responsible official identified in Section 1.0.

Action Item	Responsible Person	Anticipated Completion Deadline	Actual Completion Date

3.0 Description of Site

3.1 Description of Operational Activity

During the life of a conventional oil and gas well site, various operational phases occur.

Earthwork construction will be performed to prepare a site for the following typical phases:

- Site Development: During this phase the well pad and access road are constructed. The well pad provides sufficient area to develop wells. After pad construction, well(s) are drilled and completed, and production equipment is installed.
- Production: Once wells are ready for production, the well pad is restored, which consists of removing unnecessary equipment, reducing the well pad size for production (as needed), and installing containment;
- Workover: During a workover project the well pad can be expanded, if needed. If expanded, the well pad would be restored after workover; and

- Reclamation: At well retirement (wells are plugged and abandoned), and the well pad and access road are removed.

While operational, wells may produce natural gas liquid and/or gas that may contain the following: methane, propane, butane, iso-butane, pentane, and longer chain hydrocarbons. The operation's North American Industry Classification Systems (NAICS) codes are 211120 (Crude Petroleum Extraction) and 211130 (Natural Gas Extraction).

The Official responsible for each operational activity is set forth below, and their contact information is included in Appendix A.2.

A. Well Site Construction, Restoration, or Reclamation

Operational Official: Range Construction Supervisor

Well site construction, restoration, or reclamation is similar to any other earthmoving project. Prior to construction, an erosion and sedimentation control plan will be prepared, as needed, and implemented during construction. Construction includes surveying, clearing, earthmoving, grading, and stabilizing disturbed areas.

During well site construction, restoration, or reclamation, expected waste streams may include secondary liner materials (RWC 806) and plant trash (Residual Waste Code (RWC) 710). Wastes are collected, segregated, and stored appropriately at the site prior to disposal per Range's Control and Disposal Plan (CDP) (See Appendix B).

B. Drilling

Operational Official: Range Drilling Site Supervisor

During the drilling phase, a well is spud (start of drilling) with an auger rig. Then, the wellbore is advanced to total depth with a drilling rig. During drilling, casings are installed and cemented into the wellbore to provide the conduit for oil and/or natural gas production.

During drilling, drilling mud and other drilling fluid wastes (RWC 803), secondary liner materials (RWC 806), drill cuttings (RWC 810), and plant trash (RWC 710) are likely to be generated. These waste streams are collected, segregated, and stored appropriately at the site prior to disposal. Refer to Range's CDP for more detail. (See Appendix B.)

C. Completions

Operational Official: Range Completions Site Supervisor

The completions process consists primarily of two stages: hydraulic fracturing and flowback. During hydraulic fracturing, production is stimulated from new or existing wells by pumping sand, water, and a minuscule additive mixture into the well bore at high pressure to induce fracturing of the producing rock formation. Once hydraulic fracturing is complete, flowback is initiated. During flowback, fracturing fluids that return to the surface are collected for disposal or reuse.

During completions, flowback sand & sludge (RWC 802), secondary liner materials (RWC 806), and plant trash (RWC 710) are anticipated to be generated. The waste is collected, segregated, and stored appropriately at the site prior to disposal. Refer to the CDP in Appendix B for additional information.

D. Production

Operational Official: Range Well-Specific Lease Operator and/or Production Supervisor

Once completion operations are finished and the pipeline infrastructure to the well site is constructed, oil, natural gas, and/or condensate can be produced. These products may be transported via underground pipeline, while others and the byproduct (brine) are transported via truck.

Producing well sites and associated equipment are operated and inspected by Range's Lease Operators. Additionally, Range employs Environmental Compliance Specialists who periodically inspect the sites.

During production, only produced fluid (RWC 802) and sediment from production storage (RWC 807) are anticipated to be generated as waste. The waste is collected and stored appropriately in the production tanks at the site prior to disposal or reuse. Refer to the CDP in Appendix B for additional information.

E. Production Tubing Installation / Workover Operations

Operational Official: Range Completions Supervisor

Once a well is in production, tubing installation operations may occur at the well site. During this operation, a small-diameter tubing string is installed inside the production casing of a well to facilitate the removal of liquids. The tubing may be installed in the well while it is under pressure either using a combination of a workover rig and a rig-assist snubbing unit or a dedicated snubbing

unit. Additionally, well conditions or productivity may necessitate other workover operations at the well site. Workover operations could be considered any activity where a workover rig or unit is mobilized to enter and alter/maintain the wellbore.

During tubing installation and/or workover operations, produced fluid, sand & sludge (RWC 802), secondary liner materials (RWC 806), and plant trash (RWC 710) could reasonably be anticipated to be generated. These materials are collected, segregated, and stored appropriately at the site prior to disposal. Refer to the CDP in Appendix B for additional information.

F. Well Plugging

Operational Official: Range Completions Site Supervisor

Once the productive life of the well is over, well plugging operations will likely commence at the well site. During this operation, casing is removed to the extent possible, and cement plugs are placed in the wellbore at appropriate intervals. A workover rig or similar unit is utilized to perform this work.

During the plugging process, produced fluid, sand & sludge (RWC 802), secondary liner materials (RWC 806), and plant trash (RWC 710) could reasonably be anticipated to be generated. These materials are collected, segregated, and stored appropriately at the site prior to disposal. Refer to the CDP in Appendix B for additional information. Additionally, casing removed from the wellbore during the plugging process will be disposed of or recycled at proper facilities following the activity.

3.2 Typical Incidents First Responders Could Encounter at this Site

Law Enforcement could be requested in order to:

- Investigate reports of major damage or theft at the site;
- Assist in removing trespassers or dispersing unlawful demonstrations;
- Assist with traffic control or security of a site during a well control incident; and
- Assist Company and Local officials in evacuation of local residents from the vicinity.

Emergency Medical Services could be requested in order to:

- Provide emergency medical services/evacuation of injured /sick personnel from the site; and
- Provide emergency medical services/evacuation in the event of a mass casualty event at the site.

Firefighting services could be requested in order to:

- Contain fires greater than an incipient fire, i.e. equipment or grass fire near the site;
- Provide assistance to Well Control Contractors during a well control situation;
- Provide assistance to Company and Local officials in evacuation of local residents; and
- Provide assistance in monitoring air for released gases.

3.3 Description of Existing Emergency Response Plans

This PPC Plan is compatible with the following existing emergency response plans that may be applicable to the specific well site that, if relevant, are integrated in or attached as outlined below:

- Control and Disposal Plan (25 Pa. Code § 78.55 and § 91.34), see Appendix B
- Well Site Specific SPCC Plan (40 CFR 112), where required

3.4 Material and Waste Inventory

During the individual operational stages of construction, drilling, completions workover, production, and plugging, chemicals may be stored onsite. The actual type and volume of chemicals present at the well site will vary depending on:

1. The activities being conducted,
2. Site conditions,
3. Equipment usage,
4. Other site or operational specific factors

Transfers of materials and wastes at well sites are performed under the direct supervision of the Range operational officer listed for each operational stage in Section 3.1 of this PPC Plan. Regulated chemicals and wastes are stored, handled, treated, transported, and disposed of in accordance with applicable federal, state, and local, laws and regulations (See the CDP in Appendix B for a description of common wastes and disposal methods, and Appendix D for typical chemicals present at conventional well sites.)

Safety Data Sheets (SDSs) will be, at a minimum, available electronically onsite for hazardous chemicals used on Range sites. Contractors shall provide SDS for all hazardous chemicals that they bring onsite to Range's onsite representative. Manufacturer's websites that include SDS may be provided. Range's onsite representative will provide all SDS to Range's Safety Operations Coordinator. A comprehensive catalog of SDS for all hazardous chemicals used in Range's operations will be maintained by Range's Safety Group.

3.5 Pollution Incident History

Releases that occur onsite are recorded in Range's electronic database, and those records are maintained for five years. Releases are remediated in accordance with federal, state, and local requirements. Given the ongoing nature of tracking incident history, a full and up-to-date summary of Range Resources – Appalachia, LLC's pollution incident history and related response actions for this site can be obtained by contacting the Emergency Coordinator (EC) as listed in Appendix A.2.

3.6 Implementation Schedule for Elements Not Currently in Place

This PPC plan is currently in effect. Any outstanding elements and their implementation schedule are detailed in Section 2.2.

4.0 Description of How This Plan is Implemented by the Organization

4.1 Organizational Structure of Facility for Implementation (Pollution Prevention Team)

Range's Senior Management has delegated authority to develop and implement PCC Plan(s) to Range's Environmental Compliance Department. In addition, Environmental Compliance will monitor plan implementation in the field. Each of the Range Operational Officials (detailed in Section 3.1) will implement PPC Plan requirements during their listed stage of operation. Personnel under each Operational Official's direction will vary depending on the level of work. The headcount could be twelve or more including Range employees, contractors, and subcontractors.

In the event of an emergency, Range's Operational Officials will initiate first response. Then once Range's Emergency Coordinator (EC) or Incident Commander (IC) arrive onsite, they will take control of the emergency response. These persons have been delegated the authority necessary to oversee emergency response.

Range's Environmental Compliance Department will be available to support Operational Officials with their specific roles and responsibilities, which are detailed below in Section 4.3, and may be assigned roles as part of the Incident Response team. Through program monitoring, the Environmental Compliance Department provides supports and verifies the implementation of this plan.

Range encourages its employees to ask PCC Plan related questions or seek clarity directly from their supervisor or the Environmental Compliance Department. If a situation arises where an employee does not feel comfortable using these channels of communication, employees and contractors are invited to utilize the third-party-operated hotline called EthicsPoint. Reports can be made through the website at www.ethicspoint.com by clicking “File a Report” or by calling 1-866-384-4277.

Changes made to this PPC Plan that affect personnel will be communicated at the earliest available time, generally during regular safety meetings, and put into practice as part of standard operating procedures. Where mentoring or extended training is required for any employee, a mentoring system will be put in place and On-The-Job training will be documented by the Company within Range’s electronic database.

4.2 List of Emergency Coordinators and Chain of Command

Appendix A.2 of this PPC Plan includes the contact numbers for the Primary and Alternate EC. The listed ECs may delegate responsibility of duties to other staff when appropriate. Each of the ECs or delegates is thoroughly familiar with:

- Contents of this PPC Plan;
- Operations and activities at the well site;
- Location and characteristics of materials handled at the well site;
- Location of records associated with the well site; and
- Typical layout of the well site.

In the event the Primary EC is not present at the time of an emergency, the Operational Official present on the well site as set forth in Section 3.1 will be in charge of the facility until the Range EC Primary or Alternate arrives on site. Operational Officials are trained in the proper response procedures in the event of an emergency. ECs (Primary and Alternate) have been delegated the authority to commit resources necessary to carry out this Plan.

If a well control situation occurs, the Division Vice President activates the Well Control Emergency Response Plan (WCERP), and an incident command is established with a specific chain of command; see Section 11.

Range employees and contractors have specific roles and responsibilities during an emergency. Contact information for Range Emergency Response personnel is included in Appendix A.2

4.3 Duties and Responsibilities of Emergency Coordinators

The Primary EC's general duties and responsibilities are as follows:

1. Risk management and inventory of materials;
2. Establishment of spill-reporting duties;
3. Implementation of visual inspection procedures;
4. Review of past incidents and actions taken;
5. Implementation of plan goals;
6. Contact emergency response contractors, if necessary;
7. Coordinate spill clean-up activities;
8. Notification of necessary authorities;
9. Notification of company officials;
10. Education and training of onsite personnel;
11. Evaluation of plan and change as needed;
12. Review any changes relative to the current plan;
13. Evaluate overall effectiveness of plan; and
14. Review and update the plan on a regular basis and make changes as necessary.

During an emergency, the EC or onsite authority at the well site will direct the response efforts taken by Range. Upon notification of a real or potential emergency situation the EC will complete the following steps in the order that they are listed:

1. Determine if injured personnel are present and contact emergency response services (fire, law enforcement, or emergency medical services), as required.

2. Make a preliminary evaluation of the seriousness of the situation. In the case of a material release, the EC will determine the hazard potential of a spill by evaluating the factors:
   - the source of the release;
   - the amount of material spilled;
   - the extent of spreading;
   - whether effective containment exists;
   - potential for uncontrolled or uncontained release; and
   - hazard potential and proper personal protective equipment.

3. Notify his/her supervisor and request assistance or activation of the Range Emergency Response plan, as required.
4. Determine if a shutdown is required and order one, if necessary.
5. Determine if the area must be evacuated and order evacuation, if necessary.
6. Deploy pollution control equipment as long as safety is not compromised.
7. As reinforcing personnel arrive on site (whether lead element of the On-Site Response Team (ORT) or augmentation personnel), provide initial orientation and direction.
8. Provide situation updates to the senior management listed in Appendix A.2.
9. If there has been a release of a reportable quantity of a substance the PADEP and, if necessary, the National Response Center ("NRC") will be notified per procedures in Section 7.2.

During an emergency, the situation is always subject to change; the EC should continuously be re-evaluating the situation by repeating the steps above as necessary. All steps consistent with employee safety will be taken to secure those portions of the well site that are not involved in the emergency and to contain, control, and correct the emergency situation.

After the emergency is resolved, the EC will be responsible for ensuring that the well site is cleaned up and for arranging for the proper disposal of waste materials generated from or during the incident. The EC will also prepare required post-incident reports.

5.0 Spill or Leak Prevention and Response

5.1 Pre-Release Planning

The sources for potential releases from well sites are from aboveground storage tanks, drum and intermediate storage containers, trucks and other motorized equipment, drilling, completions, and workover equipment, and aboveground piping. Areas where there exists a higher potential for releases may be provided with surface containment. Quantities of potential releases will vary depending upon the causal factors at issue and the material and storage container involved.

The systems, equipment, and practices employed to prevent and mitigate releases are described below.

5.1.1 Containment Systems

Best Management Practices (BMPs) will be employed to prevent spills to the ground surface. BMPs at conventional well sites may include: earthen dikes, plastic membranes with berms, or double-walled tanks, depending on the application.

The overall capacity of the containment system will be designed to hold the contents of the largest container stored within the containment plus 10 percent to allow for precipitation. Some containers may utilize a local containment or double-walled tank system to meet the capacity requirements.

The physical and chemical characteristics of all liners, coatings or other materials used for containment, that could potentially come into direct contact with the products or materials being contained, are resistant to physical, chemical and other failure during handling, installation and use. In addition, the containments will be sufficiently impervious and capable of containing spilled material or waste until it can be removed or treated. Range Completions, Facilities, Water, and Infrastructure Engineers evaluate liner materials for these characteristics prior to their use.

Containment systems may include, but would not be limited to, the following:

- Diking;
- Curbing or berming;
- Double-walled tanks;
- Open-top tanks and containers;
- Manifold containment tanking systems;
- Portable collapsible containment systems;
- Liquid transfer containment kits;
- Modular spill decks;
- Pipe sleeves;
- Surface liners;
- Sub-surface liners; or
- Spill kits, booms, and absorbent pads, mats, pillows and socks.

For drilling and completions activities, a temporary surface containment system may be used at a well site with localized containment around product storage areas (*i.e.,* drilling mud additives, diesel fuel tanks, *etc*.). This method is effective to contain any releases to a small area for easy

remediation. Specific containment sizes and materials used will vary depending on the type of operation and well site layout. Modifications to the containment system may be required at the well site based on changes associated with equipment requirements, operations, access, etc. Therefore, the exact footprint of each containment system will vary for each well site. For producing well sites, oil tanks have secondary containment systems comprised of an earthen berm.

5.1.2 Spill Response Resources

Range maintains spill response materials and equipment at field offices and in vehicles of most staff to be used as necessary. Additionally, Range contracts with outside firms (Emergency Response Contractors) who can provide spill response resources when needed; see Appendix A.3. The materials, equipment, and resources maintained by or available to Range for spill response at well sites is described in Section 6.5 of this Plan.

5.1.3 Well Site Design and Construction

The well site design and construction is such that:

During well site construction temporary Best Management Practices (BMPs) are used to control erosion and prevent sediment from leaving the site. These BMPs may include rock construction entrances, compost filter sock, erosion control blankets, rock filters, temporary interceptor channels, cross culverts, outlet protection, sediment traps, sediment basins, and seeding and mulching.

The above features also serve a tertiary function as a means to control and collect potential releases from operations on the site.

5.2 Material Compatibility

Materials held in inventory are stored properly to ensure material compatibility. All chemicals are stored within chemically compatible containment while on site. Storage and handling practices employed at the well site include:

- Drilling fluid and hydraulic fracturing additives, other than bulk acid, are stored in and dispensed from containers provided by the manufacturer.

- Friction reducer (FR) is typically purchased, stored and managed from a 6,000 gallon stainless steel tank, a steel lined 4,000 gallon tank, or 3,000 gallon composite tank.
- Bulk additives from the completions chemical provider, such as sodium nitrate, may be purchased, stored, and managed in 4,000-6,000 gallon International Organization for Standardization (ISO) tanks.
- Chemicals other than FR, bulk acids, and oils are typically purchased, stored, and managed in intermediate bulk containers (IBC) with galvanized steel or aluminum protective cages or smaller 5-10 gallon containers. These containers are compatible with liquid chemicals routinely managed onsite.

- Cuttings and diesel fuel are stored in steel tanks.
- Bulk acids are delivered in and dispensed directly from 5,000 gallon composite tanks. These trailers are compatible with acids routinely used onsite.
- Lubricating oils, hydraulic oils, and glycols are typically purchased and dispensed directly from 55-gallon closed-head steel drums. These drums are compatible with petroleum oils, synthetic oils, and glycols routinely used onsite.
- Production chemicals (methanol soaps) are evaluated by Range engineers prior to being delivered and used at the well site for process and material compatibility.

5.3 Inspection and Monitoring Program

5.3.1 Well Site Inspection and Monitoring Program

Several types of inspections are performed at well sites. During well development sites are generally manned 24 hours a day. During this phase, the Operational Official as identified in Section 3.1 performs visual inspection regularly, observing equipment for leaks and potential hazards. Following well development, once the wells are placed into production, the sites are visited regularly by company lease operators and deficiencies noted and addressed in Cygnet/SharePoint and Production Explorer-based reports.

Specific inspections, monitoring, and testing include the following:

- Pressure test of iron before each stage during completions operations;
- Regular iron inspections during completions operations;

- Quarterly well mechanical integrity inspection for active wells (§ 78.88(a));
- Yearly well mechanical integrity inspection for inactive wells (§ 78.103); and
- Regular inspection and monitoring of discharge response equipment and restock as needed.

5.4 Preventative Maintenance

Routine inspections are performed on secondary containment for regulated substances. Accumulated precipitation in containments is periodically removed to maintain operational capacity. Containment system repairs and maintenance will be performed in a timely manner to address deficiencies identified.

5.5 Housekeeping Program

The following items housekeeping items will be addressed as directed by the appropriate operational official as identified in Section 3.1:

- Equipment, packaging materials, and miscellaneous materials will be inspected for leaks, oily surfaces, etc. Deficiencies shall be promptly corrected;
- Areas where materials are unloaded, transferred, or loaded will be kept free of debris;
- Cleanup, storage, disposal, and inspection procedures will be reviewed with facility personnel as part of the training requirements of this plan; and
- Housekeeping conditions will be included in the facility inspections conducted in accordance with this plan.

5.6 Security

Different levels of security are utilized during the various activities in the development and operation of the well-site.

- Construction – Range's onsite Operational Official will be responsible for managing personnel arriving on site;
- Drilling – Range's onsite Operational Official will be responsible for managing personnel arriving on site. Persons requesting entry to the location must have Range-required personal protective equipment;

- Completions – Range's onsite Operational Official will be responsible for managing personnel arriving on site. Persons requesting entry to the location must have Range-required personal protective equipment;

- Production – The location is generally unmanned during the production of the well site. Production sites are inspected for unauthorized entry and vandalism during each regularly scheduled site visit performed by Range's Operational Official;

- Production Tubing Installation / Workover Operations – Range's onsite Operational Official will be responsible for managing personnel arriving on site. Persons requesting entry to the location must have Range-required personal protective equipment; and

- Plugging – Range's onsite Operational Official will be responsible for managing personnel arriving on site. Persons requesting entry to the location must participate in a site safety briefing and have Range-required personal protective equipment.

5.7 External Factor Planning

Employees are trained in procedures that are in place for emergency situations. Power outages, floods, and/or snowstorms may prevent operations from continuing, but should not result in an incident that would have an adverse effect on public health or the environment. Power outages do not increase the likelihood for release of pollutants and do not affect spill prevention measures, or spill containment, cleanup, and removal operations.

In the event of an external emergency situation, no operations involving regulated material transfer will be initiated at the site unless necessary to prevent a release.

5.8 Training Program

Employee training shall be conducted periodically to ensure that responsible employees are knowledgeable of emergency and spill response procedures. Employees with responsibilities under this plan receive training in the following areas, as required:

- New Employee Safety Orientation upon hire
    - Annual field safety orientation
- OSHA 10 Hour or equivalent course
- SMITH Defensive Driving
- Annual Computer-Based Safety modules covering a variety of subjects such as:
    - OSHA inspection;

    - Spill Prevention Control and Countermeasures (SPCC);
    - Defensive Driving;
    - Flammable and Combustible Liquids;
    - Confined Space Hazards;
    - Hazard Communication;
    - Blood-borne Pathogen;
    - Hearing Conservation;
    - Welding Cutting Brazing;
    - Fall Protection; and
    - Lockout/Tagout.
- Task Specific Hands on Training – where/when applicable
    - Fall Protection;
    - Confined Space;
    - Lockout/Tagout; and
    - Radiation.
- Range conducts monthly safety meetings at which safety and environmental protection topics are covered.

Employees completing the training shall be capable of demonstrating competency in the above training elements. Elements of the plan that enhance the prevention and management of environmental and safety incidents should also include and provide for training in these areas:

- Site Emergency and Evacuation Procedures;
- Housekeeping;
- Material Management Practices;
- Loading and Unloading Procedures;
- Preventative Maintenance; and
- Visual Inspections.

Records of formal training untaken by staff are maintained within the company's training management software with the assistance of the Human Resources Department. A sufficient number of personnel shall be trained to ensure that personnel are capable of responding effectively to emergencies and to satisfactorily accomplish an evacuation of the facility if required.

6.0 Countermeasures

6.1 Countermeasures to be Undertaken

Accidental releases of regulated materials may occur during the regular course of operations. Such releases may originate from storage tanks, transfer equipment, pipelines, or other containers. In the event of a release, measures shall be taken to minimize the impacts or risks of impacts following the guidelines below, and to promptly remediate any affected areas. **All releases are to be reported internally upon occurrence or discovery.** External notifications will be made by the Environmental Compliance Department as necessary. Both internal and external notification criteria and mechanisms are described below.

Basic Steps to Take Following a Release:

- Assess the incident to ensure necessary actions can be performed safely:
    - Shutdown of site/facility operations may be required; and
    - Evacuation of personnel / adjacent properties may be required.
- Secure the source of the spill; close feed valves, shut off pumps, raise or invert discharge points, etc.;
- Retrieve absorbent material(s) and/or necessary equipment to contain or collect the released material and secure migration pathways, if present;
- Absorb, contain, or collect released material and secure migration pathways, if present;
- Make proper notification, following the structure outlined in Appendix A.2. The Environmental Compliance Group will make notifications to the following external entities, as necessary:
    - PADEP (if a reportable quantity has been released, or if the released material has reached a waterway);
    - PA Fish & Boat Commission (if the released material has reached a waterway); and
    - National Response Center (if the released material has reached or threatens to reach navigable waters).
- Remove any remaining released material, and remediate any areas affected by the release. This may require vacuuming, pumping, excavation of media (stone, soil, etc.), cleaning of equipment / containers / containment, or other appropriate action, as determined by EC or the regulatory agency involved, if any;
- Place used absorbent materials and affected media into appropriate containers (drums, overpacks, roll-off boxes, etc.). Waste generated from clean up and remediation shall be disposed of by an authorized contractor; and

- Secure the site / affected area, ensure that no hazards to public safety, human health or the environment exist.

As part of the assessment, Range's internal Incident Classification Matrix will be used to determine the severity level of and environmental incidents (releases).

6.2 Countermeasures to be Undertaken by Contractors

A release that cannot be contained, controlled, and/or cleaned up by onsite personnel will require assistance from emergency response contractors. See Appendix A.3 for emergency response contractor contact information. The emergency response contractors, under the direction of the EC, will take all necessary measures to contain, control, and/or clean up the release.

6.3 Internal and External Communications and Alarm Systems

During a spill or release, cellular telephones, 2-way radios, voice, and/or hand signals are utilized to provide immediate instruction to facility personnel. Cellular telephones are utilized to communicate with emergency response contractors and emergency response agencies in the event of a spill or release.

6.4 Evacuation Plan for Facility Personnel

In the event of an onsite incident and/or emergency that cannot be mitigated by individuals at the well site, immediately implement and refer to the Emergency Response Plan and the Well Control Emergency Response Plan for the organization, formation, and responsibilities of the Emergency Response Team (ERT) and the Onsite Response Team (ORT).

All visitors and personnel not essential to the control and cleanup operations will evacuate the area. These individuals will exit the facility through the nearest available exit and proceed to the assembly point identified by the EC (if possible, an area upwind and uphill from the incident). Employees can exit the facility by means of one (1) access road and travel in either direction along public roads to a place of safety. Signals used to begin evacuation will be voice or radio. At the assembly point, the EC or their designee will be responsible for a head count to ensure that all personnel have been accounted for.

6.5 Emergency Equipment Available for Response

Emergency equipment is maintained in proper working order, clearly labeled, and stored in strategic locations. Emergency equipment includes, portable fire extinguishers (periodically

tested), spill control equipment, and first aid supplies. The spill control equipment is maintained in spill kits containing the following materials:

- 55 gallon or overpack drum(s);
- Oil absorbent pads, 4" oil absorbent boom, and oil absorbent granular floor dry;
- Trash bags; and
- Labels for waste description.

Operations personnel will ensure that spill kits are available, and the Environmental Compliance Specialist will periodically check to ensure that appropriate materials are available.

In the event of fire at a site, the EC or onsite authority will advise Community Fire Fighters about any possible water logistics support that Range and its contractors can contribute to firefighting operations. Company water logistics includes assets such as pre-existing agreements with water hauling contractors, access to mobile storage water tanks, and cross-country fresh water pipelines. All drilling and completion sites maintain a collection of various hose connectors that are compatible with firefighting equipment used in that area by first responders.

If additional equipment is needed, emergency response contractors will assist in containment and cleanup efforts. See Appendix A.3 for emergency response contractor contact information.

After an emergency, the equipment used will be decontaminated, cleaned, and inspected for proper working order before normal operations resume.

All equipment used for emergency procedures shall be kept in satisfactory condition and maintained and or replaced as needed. Contaminated tools or equipment shall be properly cleaned or disposed. Emergency equipment shall be tested for proper working order and be replaced as necessary.

7.0 Emergency Spill Control Network

7.1 Arrangements with Local Emergency Response Agencies and Hospitals

Arrangements will be made prior to activities at the well site to designate primary and support emergency response services. Information will be provided to police, fire departments, emergency response teams, and the County Public Safety Department to define and describe the well site configuration; operation processes; hazardous material properties, storage, and handling

provisions; locations where personnel would normally be working, entrance and egress locations and access routes, and possible evacuation routes and muster points. Ancillary support facilities, such as local hospitals or medical transport providers, will be identified and contracted in advance of well site activity, if needed.

Appendix A.1 provides a site-specific list of contact information for medical agencies and general emergency contacts which can be contacted, if necessary, in the event of an accident or release requiring outside assistance.

7.2 Notification Lists

The EC will notify company officials in the chain of command as required by this Plan, as well as; State, Local, and Federal regulatory agencies depending upon the emergency and the required response.

Appendix A.2 provides a comprehensive list of contact information for key Range Resources personnel and State, local, and Federal regulatory agencies which can be contacted, if necessary, in the event of an accident or release requiring outside assistance.

7.2.1 Notification Protocol

The following narrative should be followed for making initial verbal contact with any Emergency Agency:

"This is **[*state your full name]*** with Range Resources – Location Coordinates. We have an emergency. Our emergency is a ***[specify type of emergency.]***"

FOR PRODUCT SPILL:

It is estimated that ***[state quantity]*** of ***[state product]*** has been released.

The spill is [contained/not contained].

The release occurred at ***[state time – a.m./p.m.]*** and lasted for approximately ***[state period of time]***.

The medium or media into which the release occurred is ***[state air, water, ground etc.]***.

The number of people known to be involved in the emergency is ***[state number]***.

There are ***[state number]*** of injuries known at this time.

WAIT FOR OTHER PARTY TO HANG UP FIRST!

7.3 Downstream Notification

Not applicable at this facility.

8.0 Erosion and Sedimentation Prevention

During construction or earth disturbance, the control of sediment erosion and migration is addressed by installing erosion control BMPs where appropriate and promptly covering disturbed land with seed and mulch.

Where required, Erosion and Sedimentation Control General Permit will be obtained from the PADEP. An Erosion and Sedimentation Control Plan will be prepared for each site where earth disturbance activities will occur and will contain the following:

- General Information;
- Project Description;
- Erosion & Sedimentation Control;
- Staging of Activities;
- Maintenance Program;
- Seeding, Mulching & Soil Conditioning;
- Hydrology;
- Soil Maps;
- Soil Information;
- Location Map; and
- Detailed Drawings of the Proposed Site & BMPs.

9.0 Storm Water Management Practices

Stormwater management activities are detailed in the E&S and PCSM (as required) plans designed specifically for this site, if applicable.

The procedures for site housekeeping and inspections programs, are considered to be reasonable and appropriate, and are consistent with Best Management Practices (BMPs) for this type of site in regard to stormwater management. Intermittent or perennial waterways within the potential area of influence, in the event of a release at the site, will be identified and protected.

10.0 Additional Requirements for EPCRA Section 313 Facilities

Not applicable. The site does not meet the criteria for EPCRA Section 313 reporting.

11.0 Emergency Response

Once any emergency has been declared at a Range well site, the local Range division headquarters will activate its Well Control Emergency Response Plan (WCERP). The division will establish an Emergency Response Team (ERT) of designated personnel in the headquarters to begin monitoring, assessing, and reporting on the incident. Concurrent with activation, the ERT will make local and state notifications of applicable governmental and regulatory agency personnel to inform them of the situation. As required, the ERT will activate and deploy an On-Site Response Team (ORT) of designated personnel to the site of the incident to make a detailed assessment of the situation and to recommend expansion of on-site personnel, equipment, and supplies. The composition of the ERT and ORT will be determined in a sequential, measured manner—based on the situation—to minimize confusion, reduce personnel footprint at the site of the incident, facilitate communication, and ensure knowledgeable, experienced personnel are involved. Throughout the incident, accurate communication among Range personnel, and externally with outside agencies, will inform the decision-making and actions of both ERT and ORT, and if established, a Unified Command. External support of local contract service providers, First Responders, and (in the event of a well control situation) a well control contractor, may be required.

11.1 First Responders

In the Commonwealth, the senior First Responder Official on the scene of an incident (i.e., Fire Chief, Law Enforcement Officer) will assume the role of on-scene Incident Commander. Range personnel recognize and support this relationship, but they are also trained to follow the tenets of Unified Command. To that end, the senior Range representative at the site during an incident should be regarded as the Range incident commander, should be consulted on all aspects of the situation, and should be provided the opportunity to offer their best professional advice in the development of any incident response plan of action.

The deployment of First Responder personnel and equipment at the scene will be at the discretion of the First Responder Incident Commander. However, in emergency situations to which local

First Responders are called, the senior Range representative on-site is qualified and expected to assist First Responder Incident Commanders by providing the following types of information:

- Briefing on the general situation at the incident site;
- Accounting of personnel on the site; total personnel, casualties, injured; personnel location(s) at the site; possible location of unaccounted-for personnel;
- The potential for fire or gas release to become a more serious well control situation;
- Location, quantity, and nature of hazardous substances on the site;
- An orientation to the layout of the site; obstacles, access and egress routes, hazardous areas, equipment locations; water sources, auxiliary power units, generators, material handling equipment, etc.;
- Location of run-off water containments and sumps;
- Location of possible First Responder Command Post sites;
- Location of most likely staging areas near the site for parking and equipment staging;
- Location of Range security personnel and how to best secure the area and control access;
- Available communications resources—cell phones primary; radios secondary;
- Location of power, water, and gas lines near/on the site that could affect emergency operations;
- Location of residents, critical infrastructure, waterways, and avenues of approach to the site;
- Whether special equipment or personnel should be used, i.e., SCBA, HAZMAT teams; and
- Recommended initial objectives for First Responders.

11.2 Response to Emergencies During:

11.2.1 Site and Access Road Construction

Potential hazards during the above operational phase include: vehicle or heavy construction equipment accidents causing injury; vehicle or heavy construction equipment accidents resulting in fire; fuel spills occurring as a result of accident or equipment malfunction; accidental destruction of over-head or buried cables or pipes leading to injuries, fire, or equipment damage.

Guidelines for emergency response to these situations are outlined in the table below:

Potential Hazards	Emergency Response Actions
Vehicle or heavy construction equipment accidents causing injury	• Provide first aid; and • Contact 9-1-1 operator to request EMS support.
Vehicle or heavy construction equipment accidents resulting in fire	• Extinguish fire with on-site fire extinguishers; or • Evacuate immediate area of the fire and contact 9-1-1 operator for local First Responder firefighter support.
Fuel spills occurring as a result of accident or equipment malfunction	• Notify appropriate regulatory agencies as required by current regulations; • Use on-site spill control equipment to stop and remediate spill; • For well flow or spills off-site, use heavy equipment to establish containment to prevent pollution of navigable waters; and • Engage environmental contractor support for mitigation and clean-up.
Destruction of over-head or buried cables or pipes	• Secure immediate area to avoid contact with damaged infrastructure; • Contact 9-1-1 operator for local First Responders or EMS support; and • Contact applicable utility provider as necessary.

11.2.2 Drilling, Completions, Production, Workover, or Well Plugging Operations

While emergency response actions will be dictated by an event's severity and magnitude, the immediate response will be consistent for incidents during drilling, completions, production, workover, and plugging operations. Emergency events stemming from operations at a well site, whether during drilling, completing the well, or during its production life, require common sense and sound professional judgment by all personnel involved in the response actions.

Potential hazards during the above operational phases include: well control events; fire at the well head or in equipment/structures located on the site; uncontrolled release of gas; uncontrolled release of liquid hydrocarbons, condensate, or drilling fluids; personnel injury.

Based on the conditions at the site, Range personnel will determine if events can be controlled and corrected through the use of standard industry operating procedures. If circumstances dictate, Range management will notify well control specialists and jointly determine if well control specialists should be deployed to the affected site. Local officials will be kept informed of all developing circumstances and of decisions to deploy specialized well control contractor support and equipment.

- General guidelines for emergency actions include the following (implementation of these guidelines, their order of implementation and their timing, will be dependent on the situation):
- Activate emergency shutdown devices (ESD) where installed (i.e., production sites);
- Order evacuation of on-site personnel to designated upwind safe area or muster point;
- Account for all personnel;
- Do not re-enter the affected area until authorized;
- Notify local First Responders as necessary;
- Treat and evacuate injured;
- Initiate Range notification chain;
- Establish Range Incident Command Structure (ICS) (ERT and ORT) on order of local division senior management;
- Range management will inform local emergency management agencies, regulatory agencies as required, and implement WCERP;

- Coordinate establishment of Incident Command System with local officials and company representatives. Establish Unified Command and Staff structure to facilitate decision-making and staff coordination;
- Secure the location;
- Shut down fired equipment. All fired (non-intrinsically safe) equipment should be shut down per established operator guidelines and procedures, consistent with safety of personnel;
- Secure the Site's perimeter to prevent area population, news media, etc. from accessing the well site area.
- Request assistance from local law enforcement;
- Deploy contract security company Strike Team in coordination with law enforcement;
- Establish Safety Zones;
- Based on various criteria, the area immediately around the well head is designated the Hot Zone (no less than 50' perimeter). Access to the Hot Zone will be strictly limited to Well Control Contractor personnel. Based on wind and other conditions, the Hot Zone may change throughout the course of the event, be prepared to modify boundaries as required;
- The Safe Zone is located away from the well so that major well control events will have minimal impact on the Zone;
- Between the Hot Zone and the Safe Zone is the Warm Zone, consisting of any area of the pad not designated as Hot Zone. Access to the Warm Zone will be monitored and restricted to essential support personnel only;
- Initiate Fire Watch and monitor well conditions from a safe location, record and report all well changes;
- Identify quantity, location, and types of hazardous materials on site. Collect SDS sheets from Company Representative and provide to Safety representatives on site; make SDS available to First Responders upon arrival;
- Implement pollution abatement measures with on-hand materials and using heavy equipment to establish safe drainage and storage of well flow away from the wellhead area. Prevent well flow runoff from entering public drainage, culverts, septic systems, waterways, roadways, etc.;
- Organize well site layout;
- Conduct hazard assessment and prepare Site Safety Plan;
- Initiate safety measures;

- Set up air monitoring equipment; begin water sampling;
- Coordinate on-site command center with First Responders;
- Identify staging areas;
- Establish communication;
- Identify sources of water and arrange for transportation and staging of the same. Range drilling and completion sites maintain various hose adaptors to assist firefighters on site; and
- Coordinate population evacuation plan with local officials; utilize Range rosters of local residents to assist First Responders in evacuation planning. When evacuation decision is made, assist local officials in:
    - Arranging for transportation from the area;
    - Identifying and securing temporary housing for evacuees;
    - Arranging for meals, medical care, etc.; and
    - Designating Range spokesman to communicate with evacuees at regular intervals.

11.2.3 Well Site Restoration Operations

Hazards during well site restoration are similar to those discussed in paragraph 11.2.1 (Site and Access Road Construction) above. Hazards during restoration could also include fires; spills of condensate, oil, or brine; or gas release resulting from construction equipment accidents with well site production infrastructure—tanks, well heads, pipelines.

The table below applies.

Potential Hazards	Emergency Response Actions
Gas release from well head or pipeline	• Activate ESD device if available; • Evacuate site to upwind muster point and account for personnel; • Contact Range production supervisory personnel to conduct hazard assessment

	to determine if well can be shut-in safely. If not; • Contact well control specialists and secure site until they arrive; and • If gas release threatens highways or populated areas, coordinate with First Responders to block traffic on highways and organize evacuation of affected population.
Well head fire	• If well head is on fire, do not extinguish fire until authorized by Range management; • Evacuate site and monitor activity; and • If well control specialists are deployed to affected site, secure area until arrival of specialists.
Storage tank fire	• Evacuate immediate area of the fire and contact 9-1-1 operator for local First Responder firefighter support; • Extinguish fire; or • If fire cannot be controlled by local First Responder firefighters, secure area and await arrival of well control specialists.

APPENDIX A
EMERGENCY CONTACTS

APPENDIX A.1 - EMERGENCY CONTACTS AND MEDICAL AGENCIES

Emergency Contacts	
All Emergencies or use Satellite Numbers	**911**
ALLEGHENY County Satellite Phone Number	**(412) 247-3056**
ARMSTRONG County Satellite Phone Number	**(724) 548-5105**
BEAVER County Satellite Phone Number	**(724) 775-0880**
BRADFORD County Satellite Phone Number	**(570) 265-9101**
BUTLER County Satellite Phone Number	**(724) 287-7769**
CENTRE County Satellite Phone Number	**(814) 355-6904**
CLEARFIELD County Satellite Phone Number	**(814) 765-1533**
CLINTON County Satellite Phone Number	**(570) 748-2936**
CRAWFORD County Satellite Phone Number	**(814) 724-2548**
FAYETTE County Satellite Phone Number	**(724) 430-9114**
GREENE County Satellite Phone Number	**(724) 852-2911**
INDIANA County Satellite Phone Number	**(724) 349-9300**
JEFFERSON County Satellite Phone Number	**(814) 849-1617**
McKEAN County Satellite Phone Number	**(814) 887-4911**
MERCER County Satellite Phone Number	**(724) 662-6110**
VENANGO County Satellite Phone Number	**(814) 676-4545**
WARREN County Satellite Phone Number	**(814) 723-7100**
WASHINGTON County Satellite Phone Number	**(724) 229-4600**
WESTMORELAND County Satellite Phone Number	**(724) 836-1551**

ALLEGHENY County Area Medical Agencies	
Citizens General Hospital - New Kensington, PA	**(724) 337-5000**
UPMC St. Margaret - Pittsburgh, PA	**(412) 784-4000**
Alle-Kiski Medical Center - Natronia Heights, PA	**(412) 784-4000**
ARMSTRONG County Area Medical Agencies	
Armstrong County Memorial Hospital	**(724) 543-8500**
Brookville Hospital	**(814) 849-6878**
Allegheny Valley Hospital	**(724) 224-5045**
Indiana Regional Medical Center	**(724) 357-7000**
Punxsutawney Area Hospital	**(814) 938-1800**
UPMC St. Margaret	**(412) 784-4000**
Clarion Hospital	**(814) 226-9500**
BEAVER County Area Medical Agencies	
UPMC Beaver Valley	**(724) 857-1212**
The Medical Center	**(724) 728-7000**
Ellwood City Hospital	**(724) 752-0081**
BUTLER County Area Medical Agencies	
Butler Memorial Hospital	**(724) 283-6666**
UPMC Passavant - McCandless	**(412) 367-6700**
UPMC Passavant - Cranberry	**(724) 772-5300**

BRADFORD County Area Medical Agencies	
Robert Packer Hospital - Sayre	**(570) 888-6666**
Memorial Hospital – Towanda	**(570) 265-2191**
Soldiers and Sailors Memorial – Wellsboro	**(570) 723-7764**
The Williamsport Hospital and Medical Center	**(570) 321-1000**
Bucktail Medical Center – Renovo	**(570) 923-1000**
Divine Providence Hospital	**(570) 326-8000**
Jersey Shore Hospital	**(570) 398-0100**
Troy Community Hospital	**(570) 297-2121**
Muncy Valley Hospital	**(570) 327-8137**
St. Joseph's Hospital – Elmira, NY	**(607) 733-6541**
CENTRE County Area Medical Agencies	
Mount Nittany Medical Center	**(814) 231-7000**
Lock Haven Hospital	**(570) 893-5000**
Clearfield Hospital	**(814) 765-5341**
CLEARFIELD County Area Medical Agencies	
IRMC at Northern Cambria	**(814) 948-2640**
Punxsutawney Area Hospital	**(814) 938-1800**
Clearfield Hospital	**(814) 765-5341**
Dubois Regional Medical Center	**(814) 371-2200**
Memorial Medical Center – Johnstown	**(814) 534-8000**
Conemaugh Valley Memorial Hospital	**(814) 534-9118**
Mercy Hospital – Johnstown	**(814) 534-9000**
Miners Hospital – Spangler	**(814) 247-3100**
Somerset Hospital	**(814) 443-5000**
CLINTON County Area Medical Agencies	
Lock Haven Hospital	**(570) 893-5000**
Bucktail Medical Center	**(570) 923-1000**
Jersey Shore Hospital	**(570) 398-0100**
CRAWFORD County Area Medical Agencies	
Meadville Medical Center	**(814) 333-5000**
Titusville Area Hospital	**(800) 385-2552**
UPMC Northwest	**(814) 676-7600**
St. Vincent Health System	**(814) 864-4031**
UPMC Hamot	**(814) 877-6000**
Greenville Regional Hospital	**(724) 589-6136**
FAYETTE County Area Medical Agencies	
Frick Hospital-Mt. Pleasant	**(724) 547-0454**
Highlands Hospital-Connellsville	**(724) 628-1500**
SW Regional Medical Center-Waynesburg	**(724) 627-3101**
Monongahela Valley Hospital	**(724) 258-1000**
Westmoreland Hospital-Greensburg	**(724) 832-4000**
Uniontown Hospital	**(724) 430-5000**
GREENE County Area Medical Agencies	
SW Regional Medical Center-Waynesburg	**(724) 627-3101**
Washinton Hospital	**(724) 225-7000**

INDIANA County Area Medical Agencies	
Indiana Regional Medical Center	**(724) 357-7000**
IRMC at Chestnut Ridge	**(724) 459-4762**
IRMC at Marion Center	**(724) 397-2995**
IRMC at Northern Cambria	**(814) 948-2640**
IRMC at Seward	**(814) 446-9944**
Armstrong County Memorial Hospital	**(724) 543-8500**
Punxsutawney Area Hospital	**(814) 938-1800**
Brookville Area Hospital	**(814) 849-6878**
JEFFERSON County Area Medical Agencies	
IRMC at Northern Cambria*	**(814) 948-2640**
Punxsutawney Area Hospital	**(814) 938-1800**
Clearfield Hospital	**(814) 765-5341**
Dubois Regional Medical Center	**(814) 371-2200**
Miners Hospital – Spangler	**(814) 247-3100**
Brookville Area Hospital*	**(814) 849-2312**
McKEAN County Area Medical Agencies	
Kane Community Hospital	**(814) 837-8585**
Bradford Regional Medical Center	**(814) 837-8038**
Warren General Hospital	**(814) 368-4143**
MERCER County Area Medical Agencies	
Meadville Medical Center	**(814) 333-5000**
Titusville Area Hospital	**(800) 385-2552**
UPMC Northwest	**(814) 676-7600**
St. Vincent Health System	**(814) 864-4031**
UPMC Hamot	**(814) 877-6000**
Greenville Regional Hospital	**(724) 589-6136**
VENANGO County Area Medical Agencies	
Meadville Medical Center	**(814) 333-5000**
Titusville Area Hospital	**(800) 385-2552**
UPMC Northwest	**(814) 676-7600**
St. Vincent Health System	**(814) 864-4031**
UPMC Hamot	**(814) 877-6000**
Greenville Regional Hospital	**(724) 589-6136**
WARREN County Area Medical Agencies	
Meadville Medical Center	**(814) 333-5000**
Titusville Area Hospital	**(800) 385-2552**
UPMC Northwest	**(814) 676-7600**
St. Vincent Health System	**(814) 864-4031**
UPMC Hamot	**(814) 877-6000**
Greenville Regional Hospital	**(724) 589-6136**
WASHINGTON County Area Medical Agencies	
Washington Hospital	**(724) 225-7000**
Ohio Valley Hospital	**(740) 283-7000**
Canonsburg Hospital	**(724) 745-6100**
Washington Hospital - Burgettstown Medical Plaza	**(724) 947-6261**
Southwest Regional Medical Center	**(724) 627-3101**

WESTMORELAND County Area Medical Agencies	
Forbes Regional Hospital - Monroeville	**(412) 858-2000**
Frick Hospital – Latrobe	**(724) 537-1170**
Frick Hospital – Mt. Pleasant	**(724) 547-0454**
Highland Hospital – Connellsville	**(724) 628-1500**
Conemaugh Valley Memorial Hospital	**(814) 534-9118**
Mercy Hospital – Johnstown	**(814) 534-9000**
Indiana Regional Medical Center	**(724) 357-7000**
Somerset Hospital	**(814) 443-5000**
Jeanette District Memorial Hospital	**(724) 527-3551**
Latrobe Area Hospital	**(724) 537-1000**
Southwest Regional Medical Center	**(724) 627-3101**
Excela Health Westmoreland Hospital – Greensburg	**(724) 832-4000**

APPENDIX A.2 - NOTIFICATION LIST

Range Resources Key Personnel Notifcation	
24-Hour Company Contact	**(724) 743-6700**
Emergency Coordinator (Primary) – Field Environmental Compliance Specialist	**(724) 754-4510**
Emergency Coordinator (Alternate) – Field Environmental Compliance Manager	**(724) 754-4511**
Security Manager	**(724) 754-4517**
Safety Director	**(724) 754-4516**
Senior Vice President – Government Affairs, Environmental Compliance & Security – Scott Roy	**(724) 799-1816**
Vice President – Environmental Compliance	**(724) 743-6700**
District Production Manager - Dean Shober	**(724) 884-3592**

Local County Agency Notification	
ALLEGHENY County - Emergency Management Agency	**911 or (412) 247-3056**
ARMSTRONG County - Emergency Management Agency	**911 or (814) 724-2552**
BEAVER County - Emergency Management Agency	**911 or (724) 775-1700**
BRADFORD County - Emergency Management Agency	**911 or (724) 548-3243**
BUTLER County - Emergency Management Agency	**911 or (724) 287-7769**
CENTRE County - Emergency Management Agency	**911 or (800) 479-0050**
CLEARFIELD County - Emergency Management Agency	**911 or (814) 765-1533**
CLINTON County - Emergency Management Agency	**911 or (570) 748-2936**
CRAWFORD County - Emergency Management Agency	**911 or (814) 724-2552**
FAYETTE County - Emergency Management Agency	**911 or (814) 724-2552**
GREENE County - Emergency Management Agency	**911 or (724) 852-2911**
INDIANA County - Emergency Management Agency	**911 or (724) 349-9300**
JEFFERSON County - Emergency Management Agency	**911 or (814) 849-1617**
McKEAN County - Emergency Management Agency	**911 or (814) 887-4911**
MERCER County - Emergency Management Agency	**911 or (724) 662-6100**
VENANGO County - Emergency Services	**911 or (814) 677-0325**
WARREN County - Emergency Management Agency	**911 or (814) 563-2220**
WESTMORELAND County - Emergency Services	**911 or (814) 563-2220**

State Agency Notification	
PADEP Emergency Hotline (Statewide)	**(800) 541-2050**
PADEP NW Regional Office	**(814) 332-6945**
PADEP NC Regional Office	**(570) 327-3636**
PADEP SW Regional Office	**(412) 442-4000**
PA Emergency Management Agency	**(800) 424-7362**
PA Fish & Boat Commission Waterways Patrolman	**(814) 445-8974**

Federal Agency Notification	
DOT - Hazardous Material Information Center	**(202) 366-4488**
EPA Region 3	**(215) 814-3255**
National Response Center - (Only if the spill leaves the property and is likely to enter navigable waters)	**(800) 424-8802**
OSHA Hotline	**(800) 321-6742**

APPENDIX A.3 - EMERGENCY RESPONSE CONTRACTORS

Emergency Response Contractors for Spills	
*EAP Industries, Inc. - All Counties	**(888) 294-5227**
*EPS of Vermont - All Counties	**(724) 698-7760**
*Specialized Professional Services, Inc (SPSI)	**(877) 228-7774**
Advanced Oilfied Services (Troy Gehring) - SW Counties	**(724) 249-5433**
Drew's Mowing Service, LLC - SW Counties	**(412) 558-1115**
Hall's Excavating - NW Counties	**(814) 425-7979**
John Wallace - NW Counties	**(814) 374-4616**
Jordan Specialty Excavating - NW Counties	**(814) 720-4206**
R&R Dean - NW Counties	**(814) 720-0417**
ROC Service Company (Heath White) - SW Counties	**(724) 554-5587**

*Companies with HAZWOPER Training

Emergency Response Contractors for Pipelines	
Alex E. Paris (All Locations)	**(724) 947-2235**
Howard Bros Excavating (Independence Field & Yatesboro Locations)	**(724) 459-5754 or (412) 558-9904**
Weld It Construction Co. LLC (Scottdale & Meadville Locations)	**(814) 694-3454**

APPENDIX B
CONTROL AND DISPOSAL PLAN

Control and Disposal Plan

April 2017
Version 2

Control and Disposal Plan

INTRODUCTION

Range Resources- Appalachia, LLC ("Range") maintains a Control and Disposal Plan for the purpose of regulatory compliance with 25 Pa Code § 78a.55 and § 91.34. The purpose of this Control and Disposal Plan is to provide clear direction for managing routine waste streams generated from Range's operations.

The Control and Disposal Plan includes the following elements:

1) Identification of the Pennsylvania Residual Waste codes and non-exempt wastes applicable to Range
2) Explanation of how the wastes are controlled and disposed of and the record keeping process
3) Identification of positions of responsibility (*i.e.*, job titles) for collection of waste data

1.0 Pennsylvania Oil and Gas Residual Waste Codes

1.1 Pennsylvania Oil and Gas Residual Waste Code Descriptions

The following tables summarize the Pennsylvania Residual Waste Codes ("RWC") for the characterization, handling, and reporting of the generation and disposal from non-coal, mining, oil and gas, and other well drilling wastes. Below are the RWCs typically generated by Range's operations that must be handled according to applicable oil and gas solid waste regulations:

Pending PADEP Residual Waste Codes (Effective January 1, 2017)

Waste Stream	RWC	Old Code	Comments
Sediment	807		Sediment from storage of marketable oil and gas product. Does not include sediment from oil and gas related wastewater storage
Drill Cuttings	810		Oil and gas drill cuttings (including tank cleanouts & low gravity solids) disposed of offsite regardless of whether disposed of instate or out of state
Drill Cuttings	810		Oil and gas drill cuttings (including tank cleanouts & low gravity solids) disposed of onsite
Drilling Mud	803		Oil and gas drilling mud, other drilling fluids other than fracturing fluid and spent lubricant
Cement Returns	810		Oil and gas drill cuttings
Boiler Water Blowdown	499		Other generic waste
Spent Lubricant	809		Spent oil and gas drilling lubricants, spent plug drilling lubricants
Secondary Containment Liner	806		Includes well site liners, liners used in pits or other approved storage structures, freshwater impoundments, centralized impoundments, or used in conjunction with primary containers
Empty Raw Material Containers	419		Empty containers (Metallic, non-metallic drums, pails)
Flowback Sand & Sludge	802	805	Includes flow-back, brine, and any other formation fluids recovered from the wellbore. Flow-back is defined as fracturing/stimulation fluids, including fracturing sand, recovered from the wellbore after injection into the wellbore.
Flowback Water for Reuse in Fracing when it goes through processing (i.e., RES or Hydrorecovery)	802	805	Includes flow-back, brine, and any other formation fluids recovered from the wellbore.
Produced Water for Reuse in Fracing when it goes through processing (i.e., RES or Hydrorecovery)	802		Includes flow-back, brine, and any other formation fluids recovered from the wellbore.
Produced Water for Disposal	802		Includes flow-back, brine, and any other formation fluids recovered from the wellbore. .
Slop Tank Oil/Water Emulsion	422		Oil. Water emulsions, oily wastewaters
Waste Oil - Compressors & Engines	509		Waste oil that is not hazardous waste oil (automotive, machining cutting, etc.)
Other Residual Waste: Oily Rags	503		Oil containing waste (absorbent, rags)
Other Residual Waste: Filters	472		Spent filters (Non-haz fuel, oil, solvent)
Other Residual Waste: Plant Waste	710		Plant trash
Other Residual Waste: Other	799		Other maintenance waste
Produced Water for Disposal	802		Includes flow-back, brine, and any other formation fluids recovered from the wellbore.
Flowback Water for Disposal	802		Includes flow-back, brine, and any other formation fluids recovered from the wellbore.
Non-Exempt Waste			Includes common trash (e.g., food waste, paper, etc.), hazardous waste (e.g., chlorinated solvents), universal waste, discarded unused chemical products, vehicle fluids, maintenance and construction wastes, and spent filter or exchanger media.
Contaminated Soil/Debris/Spill Residue	506		Spill impacted solids
Waste Petroleum Material	507		Contaminated soil/debris
Virgin Petroleum Material	508		Contaminated soil/debris
Other Oil and Gas Wastes	899		Top hole water and containment water generated by preciptiation

1.2 Descriptions of Range Wastes

1.2.1 Non-Oil and Gas Well Drilling Wastes (RWC 801)

If Range installed subsurface water monitoring wells, probes, drinking water monitoring wells, or a series there of, wastes would be accumulated in 55 gallon drums or roll-off containers. Upon completion of drilling activities, wastes will be characterized by a third party laboratory, and based on analytical parameters would be directed to a non-hazardous landfill or transfer facility for disposal.

1.2.2 Produced Fluid (RWC 802)

Fluids generated from the production of oil and gas wells after the 30-day flowback period are referred to as produced fluids and are characterized as RWC 802. Typically, all of Range's produced fluids are directly reused in fracing operations, or sent to third party water treatment facilities where they are treated and returned to active fracing locations. All third party water treatment facilities are formally evaluated by Range for their treatment capabilities, long-term viability, and environmental standards.

1.2.3 Drilling Fluid Waste (RWC 803)

Drilling fluid wastes and muds that are returned to surface during drilling operations are conditioned and reused on that location whenever possible. If spent muds and fluids remain that cannot be reused, they will be chemically analyzed by a third party laboratory, profiled, and disposed of with an approved third party waste hauler and approved disposal facility. At the end of their usable lifecycle, all spent drilling fluids and mud are transported to landfills in approved tank trucks and solidified prior to being landfilled. If unused fluids or muds remain on location, they are shipped back to the producer or forwarded to another drilling location for use.

1.2.4 Wastewater Treatment Sludge (RWC 804)

Range transports all of its produced fluids and impaired waters proposed for resue in fracing operations to an active location or to a permitted, third party treatment facility. All transport of produced fluid is done by approved haulers. In the event that Range would conduct on-site processing of its waste waters, the sludge from this process would be analyzed, profiled and transported to a permitted disposal or transfer facility.

Filters may become contaminated during blending for hydraulic fracturing operations or during flowback operations. Any contaminated filters are stored in properly labeled drums or spills kits at the location of generation. Once the frac or flowback operation has been completed, the contaminated filters are profiled and transported to a permitted transfer or disposal facility.

1.2.5 Fracturing Fluid Waste (RWC 805)

Fracturing fluid waste, or flowback, is brought back to the surface during the flowback process of the well which occurs during the 30-day period between completion and production of the well. Flowback includes returned sand, water, and residual sludges that result from storing a mixture of the two. Flowback fluids are reused to the highest extent possible and are transported to active fracing locations by

approved haulers. Upon arrival at the new frac location, the flowback fluids are blended with freshwater, treated water, produced water, or additional flowback water. If flowback water cannot be reused as a product for another frac operation, it is transported to a permitted, third party treatment facility for treatment and temporary storage. After treatment, the water is shipped from the treatment facilities to either an active frac location or to a Range reuse impoundment for temporary storage. It is then subsequently transported to an active frac opearation by either (1) an approved transporter or (2) a well development pipeline.

Frac sand returns to the surface during flowback either in a solid or semi-solid physical state. The frac sand is chemically analyzed and profiled by a third party laboratory. Once profiled, it is transported to an approved and permitted transfer or disposal facility.

Residual sludges that develop through the storage of flowback water and frac sand are chemically analyzed and profiled by a third party laboratory. Once profiled, the sludges are transported to an approved and permitted transfer or disposal facility.

1.2.6 Synthetic Liner Materials (RWC 806)

HDPE synthetic liner materials are commonly used for spill containment during all phases of well site development, during equipment staging, and operational activities. When the liner has reached its useful life, it will be containerized in a roll-off box, profiled and transported to a permitted disposal or recycle facility for disposal or reuse.

1.2.7 Sediment from Production Storage (RWC 807)

1.2.8 Servicing Fluid (RWC 808)

1.2.9 Spent Lubricant Waste (RWC 809)

These wastes, when generated, are generated in very small quantities. Depending on the quantity, it will be stored in frac tanks or vacuum roll-off containers, until the waste stream can be chemically analyzed, profiled, and accepted for disposal. Off-site solidification at a permitted landfill or transfer station is Range's preferred disposal practice.

1.2.10 Drill Cuttings (RWC 810)

Drill cuttings generated from air drilling operations are containerized on the site of generation and transported to a permitted landfill in either roll-off containers or dump trucks. Drill cuttings may be mixed with inert solidification agents approved by the PADEP prior to shipment to landfills to prevent spills or separation during transport. Range samples drill cuttings at certified laboratories prior to submitting Form U applications to landfills.

Drill cuttings from fluid drilling operations are containerized on the site of generation and transported to a permitted landfill in either roll-off containers or dump trucks. Drill cuttings may be mixed with inert solidification agents approved by the PADEP prior to shipment to landfills to prevent spills or separation during transport. Range samples drill cuttings at certified laboratories prior to submitting Form U applications

to landfills.

1.2.11 Soil Contaminated by Oil and Gas Related Spills (RWC 811)

If a spill occurs during any phase of well development (*i.e.*, construction, drilling, completion, or production), the waste generated from that spill will be stored in approved roll-offs, drums or spill kits. The material stored in the approved containers may include contaminated rock, soil and/or snow. All storage containers are covered and properly labeled. Labels contain the following information:

- Site Name
- Date of the Spill
- Contents of the Container

The container contents are sampled and analyzed by an approved laboratory. The material is then profiled and transported by an approved transporter to an approved and permitted transfer or disposal location.

1.2.12 Filter Socks (RWC 812)

Water Operations filters which become contaminated with impaired water during the fluid transfer via well development pipeline are segregated from other wastes streams. The contaminated filters are stored in properly labeled drums or spill kits at the location of generation. Once the frac is complete, the contaminated filters are profiled and transported to a permitted transfer or disposal facility.

1.2.13 Other Oil and Gas Wastes (RWC 899)

Top hole water is generated during the drilling of the vertical section of the well. In the event that fresh groundwater in encountered during this process, top hole water in generated and temporarily stored on the location of generation for reuse. If the top hole water is not able to be reused on the location of generation, it is sampled and analyzed and then transported to a permitted treatment facility for future reuse.

Containment water is generated when precipitation falls onto the HDPE containment present at locations for spill prevention purposes. In order to maintain the 110% capacity requirement for the containment, precipitation is removed from the containment. Occasionally this water is impacted with impaired water or petroleum products from the equipment stored on the containment. This water is either reused at the location or reused at a separate location. When the containment water is not able to beneficially reused, it is transported to an approved, third party treatment facility for treatment and temporary storage.

1.3 Non-Exempt Waste

Only waste generated downhole or by activities uniquely associated with the exploration, development, or production of oil of gas are RCRA exempt. There is a possibility that waste streams may be generated at oil and gas facilities that are not RCRA exempt. Possible non-exempt wastes range from common trash (*e.g.*, food waste, paper, *etc.*) to hazardous waste (*e.g.*, chlorinated solvents). Each waste stream must be dealt with according to the specific regulations governing the management and disposal of the waste's specific waste classification. When non-exempt waste is generated, all regulations for the proper handling of disposal of that waste are followed. Examples of non-exempt waste that could be generated at Range facilities include, but are not limited to:

- Hazardous or Universal waste (including waste commingled with hazardous or universal waste)
- Discarded unused chemical products
- Vehicle fluids (diesel, gasoline, lubricants, and antifreeze)
- Most maintenance and construction wastes
- Spent filter or exchanger media
- General plant trash
- Containminated soil/debris/spill residue
- Waste petroleum impacted material
- Virgin petroleum impacted material

1.4 Municipal Solid Waste (MSW)

This is a broad category of non-hazardous solid waste that includes facility/office related wastes such as paper, plastic, Styrofoam, food and septic waste. When this waste is generated on site it is hauled to an approved landfill for disposal. This type of waste is not a Residual Waste, and is not applicable to waste reporting requirements.

1.5 Plant Trash (RWC 710)

Plant trash is a category of non-hazardous solid waste that may be generated from construction activities or production sites. It includes discarded pipe, discarded operations, production equipment, material that is not classified as hazardous, or another type of waste. PADEP defines plant trash waste streams such as: industrial equipment, maintenance waste and scrap, including plant trash, as a residual waste. When this waste is generated on site, it is stored in an approved container and is then hauled to an approved landfill for disposal.

1.6 Waste Streams from Compression Facilities

Small waste streams may be generated at Range's gas compression facilities. These waste types are accumulated and containerized with like contents and disposed of when storage capacity is reached. These waste streams are chemically analyzed by a third party laboratory, profiled, and disposed of through an approved third party waste hauler and disposal facility. The most common waste types and their corresponding residual waste codes that may be unique to compressor stations or well sites with compression include:

- Oil/Water Emulsions, Oily Wastewaters, RWC 422
- Non-hazardous Waste Oil (compressors and engines), RWC 509
- Oil Containing Waste (absorbent, rags), RWC 503
- Spent Filters (non-haz Fuel, Oil, Solvent), RWC 472
- Other Maintenance Waste, RWC 799
- Containmented Soil/Debris/Spill Residue, RWC 506
- Waste Petroleum Material Containmented Soil/Debris, RWC 507
- Virgin Petroleum Fuel Contaminated Soil/Debirs, RWC 508

2.0 Control and Disposal of Wastes on Range Locations

2.1 On Site Waste Segregation and Storage

Mitigation of potential environmental impacts resulting from transport and storage of waste material is a top priority. Proper waste segregation and storage is a cruicial component of the mitigation intiative. The following segregation and storage procedures apply to all operating facilities that store waste material prior to treatment or disposal, whether in containers, tanks, or in bulk form.

Waste Storage Area requirements include, but are not limited to:

- All waste should be stored in a designated secured area with no public access
- All containers should be securely covered with a lid and kept closed at all times other than when adding or removing waste
- All containers must be properly labeled
- Containers must be of sufficient size to prevent overflow
- Secondary containment must be in place for hazardous materials and other regulated liquids
- Storm water should not accumulate in the containment in a volume that could negatively impact the containment's capacity

Range uses the following dumpster types for the materials listed below for the collection of non-hazardous solid waste:

- Plant Trash/Construction Waste Dumpster: Materials generated at well locations that do not require characterization. Includes empty containers (not drums), uncontaminated liner material, and incidental amounts of plastic, cardboard and paper.

- Residual Waste Dumpster: Materials generated at well locations that must have separate landfill and PADEP disposal approval, as well as specific characterization for each waste stream.
- Construction Debris Dumpster: Staged on construction projects to collect construction debris such as banding, non-asbestos insulation, electrical wiring, flexible duct, and piping.
- Scrap Metal Dumpster: If a project or site were to generate recoverable amounts of scrap metal, containers would be provided for collection of metals to be sent off-site to an approved metals recycling facility.
- Spill Kit (55 gallon container): Contaminated materials from spills.

2.2 Waste Handling and Control

Under Pennsylvania law, waste handling and control is determined by classifying waste into one of three categories. These three categories are solid waste, sludge and liquid waste.

2.2.1 Solid Waste

Solid waste is generated during the drilling and completions processes and includes drill cuttings and contaminated frac sand. These waste streams are initially collected in either a half round container during drilling or in a frac tank during completions. The initial collection points are stored on top of rig mats and secondary containment. The rig mats are utizlied to protect the containment and enhance safety by assuring operations are not occurring on standing fluids/ice from seasonal conditions. The waste transfer occurs on the well site and secondary containment is in place for this process.

Solid waste can also be generated in the event of a spill of a regulated substance to the ground (*e.g.*, produced water). When solid waste is generated as a result of a release off of containment, it is stored in spill kits, drums or rolloff boxes (depending on the quantity spilled). When the release is cleaned up or the containers are full, the spill kit is sampled and profiled for disposal. Once the profile is returned for that spill kit, it is taken to the appropriate approved and permitted transfer facility or an approved landfill for disposal.

2.2.2 Sludge

Sludge is generated during the drilling, completions, and production processes and could include drill mud, frac sand slurries and scale build up from production tanks. All Pennsylvania landfills require incoming wastes to pass a paint filter test. PADEP approved solidification agents (*i.e.*, sawdust, corn/shell material, *etc.*) are mixed with sludges on site in mixing bins (half rounds) until the consistency is achieved to pass the paint filter test. The waste material is then transferred into either a rolloff box or dump trucks for transport to approved and permitted landfills. The transfer of waste occurs within secondary containment. Occasionally, sludges may be put into a vac truck or vacuum box for transport to the landfill where they will be solidified and disposed of. This only occurs if the landfill has obtained the appropriate permits for solidification.

2.2.3 Liquid Waste

Liquid wastes are generated during the drilling, completions and production processes. Range strives to reuse 100% of its liquid wastes. These wastes are transferred to holding tanks of various sizes and configurations to be stored while they await reuse. All liquid transfers are conducted on secondary containment.

2.3 Waste Characterization

Waste sent to a landfill for disposal must be characterized prior to transportation. The proper chemical analysis must be obtained for disposal approval and in order for the waste to be transported from Range sites.

2.4 Waste Transportation

Documentation must be completed and accompany each waste stream that is sent off-site for disposal. Waste manifests or approved waste transportation tracking documents are required for all waste streams. All waste manifest forms are to be signed by a Range employees or approved agents.

Requirements for waste transportation from generating locations to appropriate disposal facilities may vary depending on the waste classification of the applicable waste stream. Federal and state regulations specify the requirements for the transportation of hazardous waste, as noted in the sections above.

Off-site waste transportation must be performed by an approved transporter and the container must be covered. If additional paperwork and placard requirements are necessary for hazardous waste, industrial wastes, or Department of Transportation ("DOT") hazardous materials transported off-site for disposal, the Environmental Compliance Technical Expert will handle these requiremetns.

All solid and residual waste that is transported from Range locations is accompanied by a non-hazardous waste manifest (Appendix A). These manifests are retained for the required five-year period. All movements of liquid wastes from Range locations are accompanied by a non-hazardous Range specific waste manifest (Appendix B) form which is also retained for a five year period.

3.0 Recordkeeping and Reporting

3.1 Manifests

Copies of waste/water manifests and weight slips are to be retained for five years at the regional Range office location.

3.2 Reporting

Residual wastes generated in Pennsylvania must be reported to the PADEP's Solid Waste and Oil and Gas Divisions. Range maintains a corporate Pennsylvania Environmental Reporting Compliance Handbook outlining all reporting requirements within PA for its employees. The following are the reporting procedures employees should reference for reporting requirements:

- 26R Waste Reporting Procedure

- Annual and Semi-Annual Waste Reporting Procedure
- Biennial Waste Report Form 330/330-GM

4.0 Positions of Responsibility

4.1 VP- Environmental Compliance

Oversees and monitors the elements of this Plan, including institutating an effective communication program, developing waste procedures as appropriate, orchestrating reviews and audits of the waste program, managing investigations of noncompliance, reporting on compliance program status, and corrective action development. Consults with Environmental Compliance Management, Staff and Operations as necessary with regards to the elements outlined within this Plan.

4.2 Director- Field Environmental Compliance

Oversees the waste management program and the elements of this Plan. Consults with the Environmental Compliance Technical Expert to manage the day-to-day operation of this Plan. Works with Operations to demonstrate compliance with this Plan.

4.3 Manager of Environmental Compliance Policy

Develop, distribute and maintain all written compliance documents in regards to this Plan. Consult with the Director- Field Environmental Compliance and Environmental Compliance Technical Expert as appropriate to maintain compliance with this Plan. Work with Environmental Compliance personnel to manage day-to-day operation of this Plan, including monitoring regulatory changes.

4.4 Environmental Compliance Technical Expert

The Environmental Compliance Department manages waste handling at Range. The Environmental Compliance Waste Technical Expert oversees the profiling of all waste streams for disposal and oversees waste reporting with the assistance of Environmental Compliance Management. The Environmental Compliance Technical Expert is responsible for conducting audits on all transfer stations, landfills and water treatment plants used by Range to verify their compliance. Prior to any waste transfer station, landfill or water treatment plant being approved for utilization by Range, the Environmental Compliance Technical Expert conducts a facility evaluation. The results of the facility evaluation determine if the facility is approved for use by Range.

The Environmental Compliance Technical Expert also oversees all waste reporting. This involves overseeing collection of the data for the Pennsylvania 26R Reporting, the Pennsylvania Biennial Waste Report and the Pennsylvania Semi-Annual Production Report.

4.5 Waste Control Coordinator- Drilling

The Waste Control Coordinator oversees the transfer and disposal of all waste related to drilling operations in Pennsylvania. This role coordinated the movement of drilling mud to new drilling sites for beneficial reuse and the transfer of drill mud for disposal when it can no longer be reused. The Waste Control Coordinator is also responsible for handling the disposal of all drill cuttings. This includes the coordination of the approved and permitted transporter taking the

drill cuttings to an approved and permitted landfill. The Waste Control Coordinator tracks the amount of waste taken to each landfill per day to verify that Range does not exceed its maximum allowed capacity. Manifests are also tracked to ensure the proper disposal of the drill cuttings.

4.6 Environmental Compliance Personnel

Ensures that this Plan is implemented and followed during all phases of Operations. Assists the Environmenal Compliance Technical Expert with ensuring compliance with the elements of this Plan.

Appendix A

WASTE MANAGEMENT

NON-HAZARDOUS MANIFEST

NON-HAZARDOUS MANIFEST	1. Generator's US EPA ID No. Generator's ID / Manifest Doc No. Number	2. Page 1 of Page
3. Generator's Mailing Address: 4. Generator's Phone	Generator's Site Address (If different than mailing):	A. Manifest Number «number» B. State Generator's ID State Generator's ID
5. Transporter 1 Company Name Transporter 1 Company Name	6. US EPA ID Number US EPA ID Number	C. State Transporter's ID State Transporter ID D. Transporter's Phone Transporter 1 Phone
7. Transporter 2 Company Name Transporter 2 Company Name	8. US EPA ID Number US EPA ID Number	E. State Transporter's ID State Transporter ID F. Transporter's Phone Transporter 2 Phone
9. Designated Facility Name and Site Address ARDEN SANITARY LANDFILL 200 RANGOS LANE WASHINGTON, PA 15301	10. US EPA ID Number US EPA ID Number	G. State Facility ID State Facility ID H. State Facility Phone Facility Phone

GENERATOR

11. Description of Waste Materials	12. Containers No.	12. Containers Type	13. Total Quantity	Wt./Vol.	I. Misc. Comments
a. WM Profile # WM Profile Number		Type		Wt./ Vol.	Comments
b. Waste Name WM Profile # WM Profile Number	N.	Type	Total Qty.	Wt./ Vol.	Comments
c. Waste Name WM Profile # WM Profile Number	No.	Type	Total Qty.	Wt./ Vol.	Comments
d. Waste Name WM Profile # WM Profile Number	No.	Type	Total Qty.	Wt./ Vol.	Comments

J. Additional Descriptions for Materials Listed Above	K. Disposal Location			
Additional Description	Cell		Level	
	Grid			

15. Special Handling Instructions and Additional Information
Special Handling Instructions

Purchase Order # Purchase Order Number EMERGENCY CONTACT / PHONE NO.:

16. GENERATOR'S CERTIFICATE:
I hereby certify that the above-described materials are not hazardous wastes as defined by CFR Part 261 or any applicable state law, beenfully and have accurately described, classified and packaged and are in proper condition for transportation according to applicable regulations.

Printed Name	Signature "On behalf of"	Month	Day	Year

TRANSPORTER

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed Name	Signature	Month	Day	Year

FACILITY

19. Certificate of Final Treatment/Disposal
I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above-described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the dates listed above.

20. Facility Owner or Operator: Certification of receipt of non-hazardous materials covered by this manifest.

Printed Name	Signature	Month	Day	Year

White

Appendix B

Range Resources – Appalachia, LLC
3000 Town Center Boulevard
Canonsburg, PA 15317
724.743.6700 DEP ID# 141142

WATER MANIFEST

RANGE RESOURCES®

Range Resources
Manifest No.

Generating Operation:	☐ Drilling	☐ Completions	☐ Production
Transported for:	☐ On Site Reuse/Recycle	☐ Off Site Treatment	☐ Disposal

Transporter Details:			
Company Name:		Address:	
Telephone:			
Vehicle License No:	Truck #:	Vehicle License State:	
Generating Location Details:			
Site Name:		Address:	
Well Name:		AFE #:	
Well Permit #:		Tank # if applicable:	
Date:	Time In:	Time Out:	
Destination Details:			
Site Name:		Address:	
Telephone (if applicable):	Date:	Time In:	Time Out:

Type of Water:

☐ 899- Containment Water
☐ 803- Drill Out Water
☐ 899- Filtered/Polished Water (Drilling)
☐ 805- Flowback Water
☐ Fresh Water
☐ 802- Production Water
☐ 802- Originating at RES/HydroRecovery Water
☐ Other _____

Gallons Transported: _____

Unloaded to:

☐ Frac/Vertical Tank ☐ Impoundment
☐ AST (Aboveground Storage Tank) ☐ Other _____

SIGNATURES AND CERTIFICATION:

I certify under penalty of law that, to my knowledge and belief, that date and other information represented on this form are true and correct:

Generating Location Company Representative:	Date:
Transporter:	Date:
Destination:	Date:

White Copy – Hauler Copy Yellow Copy – Treatment/Disposal Facility Copy Pink Copy – Range Resources Copy

APPENDIX C
ONSITE MATERIAL INVENTORY (TYPICAL)

Appendix C – Onsite Material Inventory (Typical)

The following tables in this appendix identify the wastes, chemicals, and other materials that are typically stored and used on Range locations during different phases of well development and operation. The materials and quantities found onsite can vary depending on the number of wells being drilled, the point in time during a phase, size of the facility, and other additional factors. For each phase of development and operation Range maintains an applicable onsite file of SDSs

General Waste

RWC	Waste Stream	Typical Qty Onsite	Location	Containment	Reused
710	General Plant Trash	0-10 yards	Well Site	None	No

Drilling Waste

RWC	Waste Stream	Typical Qty Onsite	Location	Containment	Reused
803	Drilling Fluid	1,500 bbl	Well Site	Well Site Containment	Yes
810	Drill Cuttings	100-200 tons	Shaker, Half Rounds	Well Site Containment	No
803	Rig Wash	50 gallons	Well Site	Well Site Containment	Yes
803	Cellar Water	90 bbl	Well Site	Well Site Containment	Yes
803	Drilling Fluid/Mud	2,300 bbl	Well Site	Well Site Containment	Yes
710	General Plant Trash	75-150 yards	Well Site	None	No

Air Drilling Chemicals

Material	Location	Typical Qty Onsite	Container	Containment
Hammer Oil	Drilling Site	315 gallons	275 gallon tote	Well Site Containment
AC 1 EFB Airfoam 1 Soap	Drilling Site	270 gallons	250 gallon tote	Well Site Containment
AC, HD, EBF Soap	Drilling Site	270 gallons	250 gallon tote	Well Site Containment
Salt (NaCl)	Drilling Site	36,000 lbs	2000 lb Sacks	Well Site Containment
O2 Scavenger, Corrosion	Drilling Site	300 gallons	1 gallon	Well Site Containment
Liquid Inhibitor	Drilling Site	1,000 gallons	1 gallon	Well Site Containment
ML5	Drilling Site	375 gallons	250 gallon tote	Well Site Containment

Appendix C – Onsite Material Inventory (Typical)

Completions Wastes					
RWC	**Waste Stream**	**Typical Qty Onsite**	**Location**	**Containment**	**Reused**
802	Produced Fluid	2500 bbls	500 Frac Tanks	Tank Pad Containment	Yes
806	Liner Material	50-100 tons	Roll Off Containers	Area Containment	No
802	Frac Sand/Flowback Residuals	50-200 tons	Vac Box/Frac Tanks	Tank Pad Containment	No
710	General Plant Trash	75-150 yards	Well Site	None	No

Completions Chemicals				
Material	**Location**	**Typical Qty Onsite**	**Container**	**Containment**
Hydrochloric Acid (37%)	Well Pad	5,000 gallons	Transport	Well Site Containment
Corrosion Inhibitor (Cl-150)	Well Pad	5,000 gallons	Transport	Well Site Containment
Non-Emulsifier (NE100)	Well Pad	1,000 gallons	250 gallon tote	Well Site Containment
Iron Chelator (FE100L)	Well Pad	1,000 gallons	250 gallon tote	Well Site Containment
Friction Reducer (FRW-200)	Well Pad	5,000 gallons	250 gallon tote	Well Site Containment
Friction Reducer (FRW-300)	Well Pad	5,000 gallons	250 gallon tote	Well Site Containment
Friction Reducer (FRW-600)	Well Pad	5,000 gallons	250 gallon tote	Well Site Containment
Bacterial Nutritional Supplement	Well Pad	5,000 gallons	Transport	Well Site Containment
Nitrate Reducing Bacteria	Well Pad	5,000 gallons	Transport	Well Site Containment
Scale Inhibitor (MX-588-2)	Well Pad	1,000 gallons	250 gallon tote	Well Site Containment
Silica Sand (30/50)	Well Pad	5000 ft3	Sand King	Sand King Discharge Containment
Silica Sand (100)	Well Pad	5000 ft3	Sand King	Sand King Discharge

Production Wastes					
RWC	**Waste Stream**	**Typical Qty Onsite**	**Location**	**Containment**	**Reused**
802	Produced Fluid	100 bbls	100 bbl Production Tanks	Production Tank Containment	No
710	General Plant Trash	0-10 yards	Well Site	None	No

Production Pad Chemicals				
Material	**Location**	**Typical Qty Onsite**	**Container**	**Containment**
Methanol	Well Pad	250 gallons*	250 gallon tote	Tote Containment
Crude Oil	Well Pad	10-100 bbls*	Production Tank	Well Site Containment
Condensate	Well Pad	10-100 bbls*	Production Tank	Well Site Containment

* If Applicable

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