SCOPE OF WORK
PORTAGE #1 PROJECT
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

PROJECT DESCRIPTION

The Portage #1 project shall include the following wells:

<table>
<thead>
<tr>
<th>Well Name</th>
<th>API Number</th>
<th>County</th>
<th>Township</th>
<th>GPS Latitude</th>
<th>GPS Longitude</th>
</tr>
</thead>
<tbody>
<tr>
<td>Evers &amp; Nowak #1</td>
<td>34-133-2-0414-0000</td>
<td>Portage</td>
<td>Ravenna</td>
<td>41.146475°</td>
<td>-81.280459°</td>
</tr>
<tr>
<td>Hodgeman #1</td>
<td>34-133-2-0441-0000</td>
<td>Portage</td>
<td>Franklin</td>
<td>41.143286°</td>
<td>-81.317931°</td>
</tr>
<tr>
<td>Dunlap #2</td>
<td>34-133-2-1272-0000</td>
<td>Portage</td>
<td>Streetsboro</td>
<td>41.264926°</td>
<td>-81.328609°</td>
</tr>
</tbody>
</table>

PROJECT SCOPE OF WORK:

This project includes the drilling out and plugging of (3) Orphan Wells as well as the restoration of any disturbed area of the property.

PROJECT DIRECTIONS

**Evers & Nowak #1**
From SR 44: take Prospect Road north for 1.4 miles. Turn Left (west) onto Summit Road and continue for 2.2 miles. Turn right (north) onto Lakewood Road, travel 1600 feet to the site access road at 5696 Lakewood Road and turn right onto the gravel drive. Travel east for 400 feet, turn left and travel north for 340 feet, turn right and travel northeast 400 feet to the well.

**Hodgeman #1**
From SR 261: take Summit Road east for 225 feet and turn left (north) onto Hodgeman Lane. Travel 1900 feet to the gravel access drive at 5626 Hodgeman Lane. Turn right onto the drive and continue east for 400 feet to the well.

**Dunlap #2**
From SR 303: take Page Road north for 1.8 miles and turn left (west) onto Hannum Drive. Travel 850 feet and turn left (south) onto Danns Way, travel 400 feet to the concrete drive at 10066 Danns Way. Turn left onto the drive and continue east for 135 feet to the well.
SCOPE OF WORK
PORTAGE #1 PROJECT
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

GENERAL SCOPE OF WORK

The Contractor, the Contractor's agents, representatives and subcontractors shall perform this Plugging Project in accordance with Ohio Revised Code 1509, Ohio Administrative Code Chap. 1501:9-11 and 1501:9-12, the Agreement, and in accordance with the following documents that are attached hereto and made a part hereof:

1. Project Description;
2. General Scope of Work;
3. General Conditions;
4. General Specifications;
5. Sequence of Work;
6. Well Description;
7. Plugging Plan;
8. Detailed Specifications;
9. Cost Proposal Sheet;
10. Appendix I – Ohio One-Call;
11. Appendix II – Well Records;
12. & Drawing Plan Set.

Subject to the Contractor's compliance with this Scope of Work, Contractor is solely responsible for and has control over all plugging and reclamation construction means, methods, manners, techniques, sequences, and procedures, for safety precautions and programs in connection with the Plugging Project, and for coordinating all portions of the Plugging Project.
PART 1: OHIO DEPARTMENT OF TRANSPORTATION SPECIFICATIONS

This Portage #1 Project (Project) references the Ohio Department of Transportation (ODOT) Construction and Material Specifications (ODOT CMS). Any reference to these specifications is to ODOT’s most current version of the specifications. The ODOT CMS can be found at https://www.dot.state.oh.us/Divisions/ConstructionMgt/OnlineDocs/Pages/2016-Online-Spec-Book.aspx.

PART 2: PRE-SITE MEETING

The Contractor or Contractor's representative must attend the pre-site meeting. Failure to attend the pre-site meeting is grounds for the Division to reject a cost proposal.

The Ohio Department of Natural Resources, Division of Oil & Gas Resources Management (Division) intends to begin the pre-site meeting on time. At the meeting, the Division will circulate and collect attendance sign-in forms to all contractors present. Only those contractors in attendance throughout the pre-site meeting, including the discussion of the Scope of Work, will be considered present for the pre-site meeting.

PART 3: MODIFICATIONS TO THE SCOPE OF WORK PRIOR TO AWARD

The Scope of Work may only be altered by written modification. The Division may issue an Addendum to the Scope of Work and will provide the Addendum by email to all Department of Administrative Services (DAS) pre-qualified contractors. Each contractor is responsible for submitting a cost proposal that is responsive to all Addenda issued. Failure to receive or acknowledge any Addenda does not release the Contractor from all obligations contained in all Addenda. All Addenda shall become part of the Scope of Work. Receipt of Addenda must be noted on the Cost Proposal.

Any interpretation or clarification of the Scope of Work made by any person other than the Division, or in any manner other than a written Addendum, is not binding and the Contractor cannot rely upon any such interpretation or clarification.

The Contractor cannot, at any time after the award of the Cost Proposal, be compensated for any issue with the Scope of Work, including alleging insufficient data, incomplete, ambiguous, conflicting, or erroneous language, or incorrectly assumed conditions regarding the nature or character of the work.

PART 4: PERMIT AND INSPECTION REQUIREMENTS

The Division will obtain and pay for all building and U.S. Army Corps of Engineers permits unless otherwise specified in the Detailed Specifications. However, the Contractor shall determine and include in his or her Cost Proposal Sheet the costs required to obtain and pay for all other requirements by the applicable governmental agencies; including but not limited to, all certificates of inspection/operation, guarantees, licenses, etc. required to complete the work as described within this document.
PART 5: COST PROPOSAL PREPARATION

The Contractor must submit a complete cost proposal. All cost proposals must be made on the Cost Proposal Sheet included. The Division reserves the right to reject any Cost Proposals if the Cost Proposal is nonresponsive, conditional or unbalanced.

The Cost Proposal must be legibly written in ink or typed, with all amounts in numerals. For unit price items, contractors must fill in the unit price for each item listed on the Cost Proposal Sheet, and must total the items on the Cost Proposal Sheet based on the estimated quantities. If the amounts on the Cost Proposal Sheet are not totaled correctly, or where the unit price and the item total on the Cost Proposal Sheet do not agree, the Chief may exercise his discretion to determine whether the Contractor intended to use the unit price or the total line price. Any such determination by the Chief is final. The Contractor must initial any alteration or deletion of items on the Cost Proposal in ink.

PART 6: WITHDRAWAL OF COST PROPOSALS

At any time prior to the opening of Cost Proposals, a Contractor may submit a written request to the Division, at the location where the Cost Proposals are received, to withdraw its Cost Proposal. The request to withdraw the Cost Proposal must be signed by the person who executed the Cost Proposal.

PART 7: EFFECTIVE DATE AND TERM

The effective date of this Project is the date of the Letter to Proceed that is sent to the Contractor. The Project must be completed six (6) months after the effective date or by June 30, 2018, whichever is sooner. If the Project terminates on June 30, 2018 and the Project is not completed, the Scope of Work may be renewed on the same terms if the Division sends written notice to the Contractor. Due to ecological constraints, no work shall begin on the Hodgeman #1 well site until written approval has been granted to the Contractor from the Division.

PART 8: PROJECT BOND

Once the Contractor has received the Letter to Proceed, the Contractor must supply a bond to the Division in the form of a surety bond or letter of credit in an amount equal to ten percent (10%) of the amount of the Cost Proposal, less any estimates for contingency services prior to proceeding with any work at the Project site.

PART 9: TERMINATION AT WILL

The Division may terminate this Scope of Work without cause. Any payment due to the Contractor at the time of termination by the Division shall be paid to the Contractor on a pro rata basis.

PART 10: RELATIONSHIP BETWEEN COMPONENTS OF THE SCOPE OF WORK

This Scope of Work includes drawings that are duplicates of drawings on file with the Division. The Scope of Work documents are complementary. All sections of the Scope of Work are binding. The titles and headings in the Scope of Work are for reference and in no way affect the interpretation of the provisions of the Scope of Work. Further, if any part of this Scope of Work is found to be unenforceable, no such event will affect the enforceability or applicability of any other part of the Scope of Work.

If a conflict between the drawings and the specifications arises, the Contractor must notify the Division. In
the event of a conflict of any provision in the Scope of Work the order of priority within the Scope of Work is as follows: Drawings, Detailed Specifications, General Specifications, Plugging Plan, and Sequence of Work.

**PART 11: CONTRACTOR’S RESPONSIBILITY FOR SUBCONTRACTORS**

The Contractor is responsible for the conduct of its subcontractors and for persons its subcontractors directly or indirectly employ.

**PART 12: STANDARDS**

If the Division identifies a “standard” by reference to manufacturer and/or model number, all Cost Proposals will be evaluated to ensure that the identified standard is used. The Division will not consider a Cost Proposal in which a substitution for the standard is offered. After the Letter to Proceed is issued, the Contractor may submit a written proposal for a substitution of a standard.

**PART 13: SUBSTITUTIONS DURING THE PROJECT**

After the Letter to Proceed is issued, the Contractor may offer substitutions for the standards set forth in the Scope of Work. The decision to allow substitution is solely within the discretion of the Division, which will consider, among other factors, availability, time of delivery, the aesthetic value of the proposed substitution, general differences in the knowledge of the product, service history, quality, efficiency, performance, and architectural, engineering, inspection, testing and administrative expenses. Any changes to the Cost Proposal price and/or Scope or Work must be memorialized by a Field Order or Change Order, as applicable. The savings in cost in allowing any substitutions during the Project will be solely to the benefit of the Division.

**PART 14: QUANTITIES OF WORK**

14.1 **Unit Price Items**

For items in the Cost Proposal that require a unit price, the quantities listed on the Cost Proposal Sheet are an approximation and are to be used only for the comparison of Cost Proposals. The scheduled quantities may be increased or decreased without invalidating or altering the Cost Proposal and will be considered within the Scope of Work.

Payments for unit price items will be made to the Contractor for actual quantities of work performed and materials furnished in accordance with the Scope of Work; however, the Contractor may not exceed the unit quantities shown on the Cost Proposal Sheet without prior written approval of the Division through a Field Order. Even if the Contractor determines that additional unit priced quantities (above and beyond the Cost Proposal quantity) are required to meet plan and/or specification dimensions, the Contractor must not exceed the Cost Proposal Sheet quantities without prior approval of the Division. The Division will not pay for quantities above and beyond the Cost Proposal Sheet quantity without prior approval of the Division.

14.2 **Lump Sum Items**

For items in the Cost Proposal Sheet that require a lump sum price, the Division will not pay for work, materials, or equipment that exceeds the amount provided by the Contractor on the Cost Proposal Sheet. The lump sum price on the Cost Proposal Sheet must include all work, materials and equipment necessary to properly complete the Project.
14.3 Additional/Contingency Items

The contingency items set forth in the Cost Proposal Sheet are not projected as necessary to complete the Project. Rather, the contingency items will first be used when unforeseen work arises and the Division determines the contingency item is applicable. To be compensated for contingency items, the Contractor must have a written Field Order from the Division authorizing the contingency item in a specified quantity. Use of contingency items will not require the execution of a Change Order. The Contractor must be prepared to supply all items identified in the contingency specifications for use on this Project.

PART 15: OMISSIONS IN THE SCOPE OF WORK

If the Contractor notices an error or omission in the Scope of Work during performance of the Project, the Contractor shall immediately notify the Division of such omission or error and shall not proceed with the Project until directed by the Division. Any work performed by the Contractor prior to clarification by the Division may not be entitled to compensation.

PART 16: INTERPRETATIONS CONCERNING THE SCOPE OF WORK

During the Project, if a question arises on the Scope of Work, the labor or materials to be supplied, or costs potentially exceeding the Contractor’s Cost Proposal, such questions must, prior to the work being performed, be submitted to the Division for a determination. A Division determination will be issued in writing and any work performed prior to such a determination will be performed at no cost to the Division. The Division will also begin executing a Change Order, when appropriate.

If the Division receives a written question concerning the Project, the Division will determine if the work must be performed by the Contractor at no increase in price to the Scope of Work. If so, the Division will issue a Field Order setting forth the Division’s determination. Each Field Order issued must be signed by the Contractor acknowledging receipt. If the Contractor disagrees with the Division’s interpretation in a Field Order, the Contractor may submit a protest by certified mail to the Chief within ten (10) days following the date of issuance of the protested Field Order. However, the Contractor must immediately proceed with the instructions given in the issued Field Order.

If, upon receipt of a written protest of a Field Order, the Division determines that the work referred to in the protest is outside the Scope of Work, the Division will not issue a Field Order and instead will issue a Change Order.

Field Orders, which are interpretations of the requirements of the Scope of Work, may be issued by the Division at any time during the performance of the work. The Contractor, at all times, is required to immediately execute the instructions of all issued Field Orders.

PART 17: CHANGES IN THE SCOPE OF WORK

17.1 The Division's Right to Require Change Orders

The Division may issue a Change Order directing the Contractor to immediately perform extra work that differs from the Scope of Work. The Contractor shall perform the work as directed. The changes in the work will consist of additions, deletions, or other revisions. When the Contractor performs the work, the Cost Proposal amount will be adjusted as described within this Scope of Work.
If the Contractor protests the issuance of the Change Order, any such protest has no bearing on any work requirements arising out of the Change Order in that the Contractor must immediately perform the work required in the Change Order so as not to delay the progress of the work at the Project.

17.2 Unauthorized Work

Only work performed under the Scope of Work or work authorized by a Field Order or a Change Order is eligible for compensation. If the Contractor performs any work or purchases any materials without an approved, applicable Field Order or Change Order, such work performed and purchases made are within the Scope of Work at no additional cost to the Division.

17.3 Contractor's May Request Change Orders

If the Contractor determines that the Scope of Work does not address conditions at the Project, the Contractor may provide written notice to the Division of the conditions and request a Change Order. No oral communications will be acceptable as justification for a Change Order.

17.4 Determining Price of a Proposed Change Order

The following methods will be used to determine the price of a proposed Change Order:

a. If a Change Order involves items not listed on the Cost Proposal Sheet, the Contractor must present the Division with labor and/or material price quotes for the proposed Change Order item(s). The Division may request these quotes either in unit prices or as lump sums; or

b. If the work involved in the Change Order is not definable, the Division may request the work be performed on a time and material basis and include a maximum amount to be paid for the work. The method will be based on unit prices for both labor and materials agreed to by the Division prior to the Contractor commencing the work.

17.5 Disputes Regarding Change Order Prices

If the Contractor and the Division cannot agree on the cost of the work for a Change Order, using site-specific information including, but not limited to, Division historic public cost proposal information, the Division will determine and set a fair price for the work and materials that are the subject of the Change Order.

PART 18: PAY ESTIMATES

18.1 General Information

Payments issued to the Contractor as the work progresses are not acceptance of any portion of the work not completed in accordance with the Scope of Work nor do such payments relieve the Contractor of liability with respect to any obligation or any expressed or implied warranties or responsibilities for faulty materials or workmanship.

18.2 Required Review by the Division

Prior to the submittal of each payment request, the Contractor and the Division must meet at the Project site to review the Project progress. The Contractor and the Division's Project Representative must mutually agree on quantity and percent of work completed for all cost proposal items prior to submittal of each payment request. No payment request will be approved for work that has not been
approved by the Division's Project Representative. Field verification of all lump sum quantities and weight slips for all unit price quantities invoiced must be submitted to the Division’s Project Representative for review during the meeting.

Payment requests received by the Division containing errors or requesting amounts that cannot be approved will be returned to the Contractor. The Contractor may resubmit a payment request after correcting errors.

18.3 Documents to be Submitted for Payment

The Contractor's payment request must be submitted to the Division by regular mail to 2207 Reiser Avenue, SE, New Philadelphia, Ohio 44663. The Contractor's payment request must be submitted on a form furnished by the Division. Each request for payment must be signed by the Contractor and the Contractor must certify on the form that:

a. The request for payment is accurate as to materials and the work completed under the terms and conditions of the Scope of Work and any Change Order, as applicable, including full compliance with all labor provisions; and

b. All subcontractors and material suppliers have been paid for the work or materials that are applicable to all previous payment requests. As certification, each request for payment, at the Division’s request, may need to be accompanied with a properly executed "Waiver of Liens" from all subcontractors and material suppliers to show that all previous payments made by the Division to the Contractor have been applied to fulfill, in full, all of the Contractor's obligations reflected in prior requests for payment.

18.4 Effect of Liens on Payment Requests

All work, materials, and equipment covered by any request for payment, whether incorporated in the Project or not, will pass to the Division at the time of payment free and clear of all liens, claims, security interests and encumbrances.

If there is evidence of any lien or claim that is chargeable to the Contractor, the Division will withhold all payments due to the Contractor to secure such lien or claim. If there are any previous liens or claims after payments are made to the Contractor, the Contractor may be required to refund to the Division a sum of money equal to the sum of all monies that the Division may be compelled to pay in discharging any lien or claim as a result of the Contractor's default.

PART 19: RETAINAGE FOR FINAL STABILIZATION

If the Scope of Work requires revegetation of disturbed area, the Division will retain five percent (5%) of the sum of (1) the Cost Proposal amount and (2) all approved Change Orders. The five percent (5%) amount retained shall be released once the Division completes a Final Stabilization Inspection and determines that vegetation has reached final stabilization. “Final stabilization” means vegetation established in a uniform perennial vegetative cover with at least a seventy percent (70%) grass cover. “Final stabilization” also means that no large barren areas exist and the vegetation is of an equal or better condition than before the project started. The Contractor must remove all temporary erosion and sediment controls once final stabilization is achieved.
GENERAL SPECIFICATIONS

Unless there is a specific pay item in the Detailed Specifications, the work defined in the General Specification shall be incorporated into other items of work.

PART 1: HOURS OF WORK

The Contractor, the Contractor’s agents, representatives and subcontractors shall perform plugging projects during the days of Monday through Friday. Work will not be conducted on weekends or state/national holidays except with Division approval or during emergency situations. A work day is defined as eight (8) hours. However, additional hours may be worked with Division approval or during emergency situations.

PART 2: EQUIPMENT

The Contractor equipment shall pass all safety requirements of local, state, and federal agencies. The Ohio Department of Natural Resources, Division of Oil and Gas Resources Management reserves the right to inspect the equipment prior to the Recommendation of Award.

Unless otherwise noted, all equipment and materials required to complete the work described shall be provided by the Contractor.

PART 3: NOTIFICATIONS

3.1 Seven Working Day Notice

The Contractor, the Contractor’s agents, representatives, subcontractors, or independent contractors shall contact the responsible Division Orphan Well Inspector (the “Inspector”) no less than seven (7) working days prior to commencement of work. Notice may be written or oral. This notice will allow the appropriate Division staff time to mark the approved access route and any sensitive areas that need to be left undisturbed.

The Contractor, the Contractor’s agents, representatives and sub-contractors shall contact each utility company that has utilities that directly affect plugging activities at the well location(s).

3.2 Public 48 Hour Notice

Prior to initiating well plugging operations, the Contractor shall give a minimum of 48-hour notice to the local fire department. Confirmation of this notification shall also be made to the Inspector or the Division Regional Office.

3.3 Emergency Notification

When emergency conditions are encountered, such as a release of hydrogen sulfide gas (H₂S), natural gas, crude oil, condensate or brine that threatens human health, safety or the environment, as
described in Ohio Administrative Code 1501:9-08-02, the Contractor shall notify the local fire department, the Local Emergency Planning Committee (LEPC) and call the 24/7 incident notification number: 1-844-OH-Call1 (1-844-642-2551) within 30 minutes of the occurrence.

PART 4: ACCESS AND PRESERVATION OF SITE

Costs for the adequate access to the well site for the plugging equipment are to be included in the cost proposal. Unless waived, placement of all tanks and equipment shall be subject to Division’s approval. If requested by the Division, access roads will be chained or cabled to prevent unauthorized use.

Special attention shall be given to maintaining trees and other vegetation that have scenic value, provide shade, reduce erosion and runoff, or add to the aesthetics of the area. No trees three (3) inches or larger in diameter shall be removed without the Division’s permission. Any alterations to the natural topography required to provide ingress and egress to the well site must be approved before work begins.

PART 5: DAMAGE CAUSED BY CONTRACTOR

All damage caused by the Contractor’s negligence in carrying out of this scope of work to any public or private property of any nature whatsoever, including trees, shrubs, and crops, shall be corrected to Division’s satisfaction at the expense of the Contractor. If crops are damaged and the Contractor, landowner, or tenant cannot reach a settlement, the County Cooperative Extension Service shall set a fair price for crop damages and the decision shall be final and binding upon all parties. All subsequent payments due the Contractor shall be withheld until the Contractor provides proof of payment of any such claim.

The Contractor shall be responsible for all costs of repairing or replacing any survey monument that is disturbed or destroyed by the Contractor. The Contractor shall utilize a professional surveyor who is licensed and registered by the State of Ohio to perform the re-establishment of said monuments according to the standards set forth by the governing body or law of said monument. For the purpose of this scope of work, the term survey monument shall apply to any property boundary marker, federal, state or county geodetic benchmark, state or county right of way monument, FEMA benchmarks or flood elevation markers.

PART 6: SAFETY

6.1 Public Safety Coordination Meeting

The Contractor shall hold a safety meeting with the local fire department, Division Emergency Operations staff and Inspector, and other applicable contracting staff prior to commencement of plugging activities. The meeting shall review 1) the safety of the public during operations, 2) the safety of workers during operations, 3) emergency notifications of events, 4) site set up and layout, 5) general overview of operations, (6) nearest hospital’s address and directions.

6.2 Daily Safety Meetings

The Contractor shall hold a daily safety meeting for all personnel on-site prior to the commencement of work. The Contractor will also provide and maintain a sign in/out sheet for all people on location. The Contractor will immediately report any accidents and/or safety concerns to the Inspector.

6.3 Operational Standards

The Contractor shall follow the rules established by Occupational Safety and Health Administration (OSHA) Basic Construction Safety 29 CFR 1926 on all onsite project operations.
6.4 **Excavation and Trenching Requirements**

The Contractor shall follow the notification protocol as specified in Part 3 of the General Specifications before the start of any excavating activities. The Contractor will comply with OSHA Construction Standards for excavation and trenching under 29CFR 1926 Subpart P.

6.5 **Hazardous Communications Requirements**

The Contractor shall maintain Safety Data Sheets (SDS) for all chemicals stored and/or used on-site. A copy of all SDS will be supplied to the local Fire Department and to the Division.

6.6 **Site Security**

The Contractor shall provide and install protective barriers/fencing around the work area to prevent unauthorized access. Ingress and Egress access must be maintained at all times.

6.7 **Wind Direction Indicator**

The Contractor shall install a windsock in an open area of the well location where it is visible to all onsite personnel. It shall be constructed of high visibility material and deployed no less than six (6) feet above grade during the plugging operations.

6.8 **Muster and Smoking Areas**

The Contractor shall mark and assign a primary and a secondary muster area daily upwind of the well location. These are to be determined based on prevailing wind direction, as indicated by the windsock. The Contractor will post an emergency contact information sheet at each muster site. The Contractor will establish a safe location for a designated smoking area.

6.9 **Ignition Sources and Parking Areas**

The Contractor shall identify and mark all potential ignition sources within a 50-foot radius of the well. The designated parking area will be outside the 50-foot radius from the well.

6.10 **Air Monitoring and Worker Safety**

The Contractor shall supply and place a 4-gas monitor at the wellhead. The gas monitor must be calibrated and maintained to monitor Methane (CH₄), Oxygen (O₂), Carbon Monoxide (CO) and Hydrogen Sulfide (H₂S).

Stop work must be followed when any of the levels listed below occur:

- Methane - 1000 parts per million (PPM)/5% Lower Explosive Limit (LEL),
- Oxygen - saturation below 19.5% or above 23%,
- Carbon Monoxide – 50 PPM,
- Hydrogen Sulfide - 10 PPM.

The levels stated above are directly from the Occupational Safety and Health Administration (OSHA) and are standard for air monitoring procedures for safety and work environments. If any of the above levels are alarmed, all personnel will shut down ignition sources and report to the muster area. From the muster area, the Contractor will call 911 for assistance from the local Fire Department.
Division Emergency Operations personnel or the Inspector has the right to stop work if the actions are unsafe or the actions cause or are likely to cause danger to the workers, public, or the environment.

PART 7: MAINTENANCE OF TRAFFIC

The Contractor shall at all times install, maintain, and operate all traffic and traffic control devices in conformance with the requirements of the "Ohio Manual of Uniform Traffic Control Devices for Streets and Highways," hereinafter called The Ohio Manual.

The Contractor shall notify the appropriate public officials and the Division and shall obtain all required approvals prior to any lane closure of a public road.

The Contractor shall maintain ingress/egress to all properties associated with the project at all times during the project unless agreed upon in writing by the Division and the landowner.

PART 8: PROTECTION OF EXISTING UTILITIES

Before construction begins, the Contractor, acting as an agent for the Division, shall locate all utilities in the vicinity of the work. The Contractor shall be responsible for complying with the regulations pertaining to utilities in the State of Ohio. The Contractor shall assume all risk for all utilities located in the vicinity of the work, whether above or below the surface of the ground. The Contractor shall also be responsible for all damages and assume all expense for direct or indirect injury, caused by his work, to any of the utilities, or any person or property by reason of injury to them, whether such utilities are or are not shown on the drawings, once they have been uncovered by the work. In compliance with Ohio Revised Code 3781, two working days before digging the Contractor shall call the Ohio Utility Protection Service (Telephone: 1-800-362-2764). The Contractor shall maintain a current OUPS call ticket during the entire project. The Contractor shall also be responsible for contacting the Oil and Gas Producers Underground Protection Service (Telephone: 1-800-925-0988).

PART 9: EROSION AND SEDIMENT CONTROL

Temporary erosion control measures are required during the course of this project. These measures may consist of the installation of straw bale dikes, silt fence, filter socks, inlet protection structures, erosion control blankets, energy dissipation, and temporary seeding and mulching.

Once construction begins, the Contractor shall be solely responsible for all construction related to the control of off-site sedimentation. This sediment shall be removed by the Contractor at the Division's direction.

9.1 Temporary Measures

Temporary erosion control structures shown on the Drawing Plan Set, identified with these specifications, or as directed by the Division shall be placed as soon as construction starts and must be maintained during the course of the project. At the direction of the Division, the Contractor shall remove the temporary controls when they are no longer needed or when required permanent control measures have been completed.

If sediment escapes the site, accumulations must be removed at a frequency to minimize further negative effects, and whenever feasible, prior to the next rain event.
9.2 **Maximum Exposed Areas**

Stabilization measures must be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and except as provided below, must be initiated no more than seven (7) days after the construction activity in that portion of the site has temporarily or permanently ceased.

Where the initiation of stabilization measures by the seventh day after construction activity temporarily or permanently ceased is precluded by snow cover, or frozen ground conditions, stabilization measures must be initiated as soon as practicable.

Where construction activity on a portion of the site is temporarily ceased, and earth-disturbing activities will be resumed within fourteen (14) days, temporary stabilization measures do not have to be initiated on that portion of site.

The Division shall limit the area of excavation, borrow and embankment operations in progress commensurate with the Contractor’s capability and progress in keeping the finished grading, re-soiling, mulching, seeding and other such permanent control measures current in accordance with the acceptable schedule.

9.3 **Winterization**

When an incomplete project will be left exposed throughout the winter season, the Contractor shall furnish the Division a plan indicating the control measures to be installed and maintained until the next construction season.

If the winter period falls within the anticipated construction period of the Scope of Work and as indicated in the original approved construction schedule, control structures will be paid for by the Division at the unit prices in the cost proposal.

If the project is not substantially completed prior to the winter season due to the failure of the Contractor to meet the completion date, these necessary control structures will be installed and maintained by the Contractor at his expense and these items will not be paid for under the terms of the Scope of Work, except those that are permanent facilities to be left in place in accordance with the Drawing Plans Set and Specifications.

9.4 **Other Controls**

Off-site vehicle tracking of sediments and the generation of dust must be minimized, and any waste must be properly disposed.

9.5 **Inspections**

The Division Inspector shall conduct inspections to ensure that the control practices are functional and to evaluate whether the erosion and sediment control measures are adequate and properly implemented.

9.6 **Enforcement**

The Division shall take appropriate steps to ensure that sedimentation does not leave the project site. The Division shall require the removal of off-site sediment by the Contractor if such sediment resulted
from the Contractor’s negligence to place and maintain sediment control structures in accordance with the Drawing Plan Set and Specifications.

PART 10: SPILL PREVENTION AND REMEDIATION

The Contractor is expected to prevent and, if necessary, contain and remediate any spills that may occur at the site due to plugging activities. All stationary plugging equipment on well locations that are in tiled farm fields, residential neighborhoods, parks, or in/adjacent to areas determined by the Division to be environmentally sensitive, will be staged on an impermeable liner and berm. The Contractor will have oil absorbent pads and booms available onsite during the plugging operations.

PART 11: HYDROGEN SULFIDE

If the well that is being plugged is known to produce hydrogen sulfide (H$_2$S), the following considerations must be observed:

11.1 SAFETY

A. The Contractor must provide the appropriate equipment, on-site, to properly detect and abate any H$_2$S emitted from the well. If the Contractor does not have the appropriate equipment to properly detect and abate any H$_2$S emitted from the well, they will utilize an appropriate party to provide these services.

B. The Contractor will shut-in the well each night after the plugging operations have ceased, unless otherwise instructed by the Division. The Contractor will continue this process until the plugging operations are complete and there are no further signs of a gas release.

C. Along with the wind direction indicator required for all projects, the Contractor shall supply site flagging/H$_2$S work signage at all times that indicate the H$_2$S known hazard. Examples of hazard levels displayed include No Hazard Conditions, API-Level 1 – Low Hazard, API-Level 2 – Medium Hazard, or API-Level 3 – High Hazard.

PART 12: CASING

The Division reserves the right to require the removal and or placement of any tubing, casing, or liners deemed necessary to properly plug and abandon the well. If a string of casing that would normally be pulled cannot be removed, the Contractor may be required to log the well and perforate the casing, in accordance with the Division’s instructions, so that cement can be circulated behind the casing.

The Contractor shall run an operational string of casing when caving of the well prevents clean out to depth required in the scope of work.

PART 13: WELL OBSTRUCTION ASSESSMENT

If an obstruction is encountered in the well bore that prevents the Contractor from reaching total depth, the Contractor will attempt to identify/assess the nature of the obstruction and attempt to remove any obstruction deemed an impediment to the plugging operation. The Contractor will supply impression blocks as part of their normal rig equipment.

PART 14: REMOVAL OF AN OBSTRUCTION

The removal of an unknown obstruction that is encountered during the cleanout of a well may include the
use of milling and/or fishing tooling and equipment. The Contractor will include the costs for these services on the appropriate line items in the contingency section of this cost proposal unless these costs are part of a planned procedure. The Division will approve a method for the Contractor to remove the well obstruction. The Division will first utilize contingency specifications and line items to define this work. **The Division will not be responsible for milling or fishing charges that are due to Contractor negligence or Contractor equipment failure.**

**PART 15: PLUGGED WELL IDENTIFICATION**

In compliance with Ohio Administrative Code 1501:9-11-10, a steel plate, a minimum of ¼-inch thick, shall be tack welded on top of all plugged wells. The well’s permit number and “ODNR” shall be welded on the plate in numbers/letters as large as practical. Letters shall have a minimum relief of 1/8-inch.

**PART 16: TOILET FACILITIES**

Where there are no readily accessible public toilet facilities, the Contractor will provide a portable field toilet on the location during plugging operations.
**SCOPE OF WORK**

**PORTAGE #1 PROJECT**
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

---

**SEQUENCE OF WORK**

**General:** Performance of all work shall be coordinated with the Division of Oil and Gas Resources Management (“Division”) Orphan Well Inspector (“Inspector”).

**Due to ecological constraints, no work shall begin on the Hodgeman #1 well site until written approval has been granted to the Contractor from the Division. As a result of this requirement, the Contractor shall complete work on the Dunlap #2 well site and Evers & Nowak #1 well site if required.**

The Sequence of Work shall be repeatable for all the project’s wells. The Sequence of Work for the Orphan Well Project shall be as follows:

**Phase I:**

1) Contact the Ohio Utility Protection Service and the Ohio Oil & Gas Producers Underground Protection Service.

2) Coordinate with the Orphan Well Inspector and the local authorities for the mobilization of equipment over the roads and bridges to the site as applicable.

3) Verify with the Orphan Well Inspector that the pre-construction staking (i.e. Construction Work Limits) has been completed by the Division. The pre-construction staking must be completed prior to mobilization.

**Phase II:**

1) Mobilize all necessary equipment to the site and develop the site access as shown on the Drawing Plan Set.

2) Implement site safety and secondary containment as described in the Detailed Specifications.

3) Install perimeter sediment controls as required by the Division.

4) Develop a work area at the well location.

5) Prepare the well for plugging as described in the Detailed Specifications, “Well Head Control.”

6) Upon successful installation and approval of the wellhead and establishment of well control, the Contractor shall begin to plug the well as described in the Plugging Plan and Detailed Specifications, “Well Preparation & Plugging.”

7) Once all required plugs have been placed and allowed to set, the Contractor shall cut the casing as defined in the Plugging Plan.
8) The Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10 and install the vault and vent system.

**Phase III:**

1) Within three (3) working days after the plugging operations are completed, the Contractor shall remove all well and well plugging-related equipment, fluids and cuttings from the site. The Contractor shall also excavate and remove all contaminated soils present onsite if present.

2) Within fourteen (14) days after the completion of the plugging operations, the Contractor shall final grade, disc, fertilize, seed, and mulch all disturbed areas.

3) All reclamation shall be finished to an equal or better condition than what existed prior to construction. The Division shall give the final approval for the restoration of the site.
**SCOPE OF WORK**

**PORTAGE #1 PROJECT**

Multiple Orphan Well Sites

Portage County, Franklin, Ravenna, & Streetsboro Townships

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**DUNLAP #2 WELL DESCRIPTION**

**Background:** The Dunlap #2 is located in a residential neighborhood in Streetsboro Township, Portage County, just northeast of the City of Streetsboro and approximately 1550 feet northwest of the intersection of Page and Frost Roads. This well is situated at the rear of the property at 10066 Danns Way, Streetsboro. This 0.762 acre property (parcel #35-017-00-00-005-018), is owned by Ronald J. and Karen M. Smolik. The residence on the property is occupied by the Smolik’s. This well is located in a small landscaped area, containing small trees and bushes, +/- 40 feet southeast of the Smolik residence and +/- 40 feet northeast of a neighboring residence. Surface topography for this area is relatively flat and marshy and the surface drainage in the area appears to flow to the east.

On April 3, 2014 the current landowner, Ron Smolik, filed a complaint (4652) with the Division regarding natural gas odors and water bubbling in his backyard, where his aboveground swimming pool had been located. On April 4, 2014, the Division conducted a site inspection, researched the Division database and determined that there was a plugged well on the Smolik property, the Dunlap #2. On April 9, 2014, Moore Well Services exposed the well and found an 8.625 inch diameter casing at a depth of approximately five (5) feet. The identification plate that had been installed on the top of this casing when plugged was peeled back and damaged. Moore installed a passive vault and vent system to temporarily mitigate the situation. On December 17, 2015, the Division conducted a follow-up inspection and found the terminus of the vent line, located at the east end of the property, was equipped with a charcoal canister and the end of the line was set approximately 12 feet in the air. Natural gas could be heard hissing from and water gurgling in the vent line. Mr. Smolik stated that the gas odors were affecting the activities of some of the neighbors.

The Dunlap #2 was drilled in 1977, by Park Ohio Industries, to a total depth of 4240 feet and produced from the Clinton Formation. This well was plugged in 1989 by Atwood Energy and Final Restoration was approved by the Division in 1996. Drilling records show the following key formation depths and thicknesses:

<table>
<thead>
<tr>
<th>Formation</th>
<th>Top</th>
<th>Bottom</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface and Drift</td>
<td>0’</td>
<td>62’</td>
<td></td>
</tr>
<tr>
<td>Berea</td>
<td>372’</td>
<td>388’</td>
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</tr>
<tr>
<td>Big Lime</td>
<td>2276’</td>
<td>3944’</td>
<td></td>
</tr>
<tr>
<td>Salt</td>
<td>2953’</td>
<td>3657’</td>
<td></td>
</tr>
<tr>
<td>Lockport</td>
<td>3657’</td>
<td>3944’</td>
<td>Salt Water</td>
</tr>
<tr>
<td>Packer Shell</td>
<td>4028’</td>
<td>4062’</td>
<td></td>
</tr>
<tr>
<td>Clinton</td>
<td>4062’</td>
<td>4186’</td>
<td>Gas &amp; Oil</td>
</tr>
<tr>
<td>Total Depth</td>
<td>4240’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Division records show the following casing and cementing information for the Dunlap #2:

- 8.625 inch diameter casing to 389 feet and cemented with 275 sacks,
- Cemented 11 inch diameter hole from 389 feet to 401 feet
- 4.5 inch diameter casing to 4206 feet and cemented with 150 sacks.

According to Division records this well was plugged in the following manner:

- Set a 25 sack plug from 4100 feet to 3900 feet,
- Set a 45 sack plug from 2440 feet to 2240 feet,
- Set a 60 sack plug from 2376 feet to 2176 feet,
- Set a 45 sack plug from 450 feet to 300 feet,
- Set a 30 sack plug from 100 feet to surface,
- Topped off well with 5 sacks.
- Gel spacers used between plugs.

There is no mention of how much of the 4.5 inch diameter casing was removed from this well. Common practice in this time period was to rip this casing at a free point above the Salina Formation (2953 feet). Based on the plugging report and for the purposes of this report, it is assumed that approximately 2440 feet of the 4.5 inch diameter casing was removed from the Dunlap #2.

Groundwater resources in the area of review are good. Wells in this area can yield as much as 50 gallons per minute (gpm) or more from aquifers in the Pottsville group. The ODNR-Division of Water map entitled Ground Water Resources of Portage County (Walker, 1979) indicates that the principal aquifers are the Massillon sandstone and Sharon conglomerate. Bedrock in the area is reported to be covered by less than 75 feet of glacial material. There are no water wells within the 500 foot area of review and the work zone does not fall within any source water protection zones. Homes in the area receive their water through a public water system. The deepest underground source of drinking water (USDW) is located at the base of the Berea sandstone at approximately 800 feet above mean sea level (amsl). Based on the well card for the Dunlap #2, the base of the Berea is 388 feet below ground level (bgl).

**Scope of Work:** This project includes the mobilization and access to the site, plugging the orphan well, installing a vault and vent system, as well as regrading and vegetating all disturbed areas as described.

**Designated Route:** From SR 303: take Page Road north for 1.85 miles and turn left (west) onto Hannum Drive. Travel 850 feet and turn left (south) onto Danns Way, travel 400 feet to the concrete drive at 10066 Danns Way. Turn left onto the drive and continue east for 135 feet to the well.

It is the Contractor’s responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over the all roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Chief, of all road use notifications/approvals prior to mobilizing equipment to the site.
DUNLAP #2 PLUGGING PLAN

For the purposes of this scope of work, it is assumed that this well is equipped with a competent string of 8.625 inch diameter surface casing. Plugging data for this well indicates that this well was plugged with cement at varying intervals in the well. It is estimated that the 4.5 inch diameter casing was ripped at an approximate depth of 2440 feet (see Well Description).

1) The Contractor will excavate around the well to expose the existing 8.625 inch diameter casing in order to evaluate its condition. If this casing is found to be severely degraded, the Contractor will remove this portion and install enough new casing, of similar diameter, to bring it to ground level or a suitable working height.

2) The Contractor will install an appropriate well head and an approved method of well control to insure there is control of gas and/or fluids generated from the well. The Contractor will establish and maintain well control throughout the entire plugging process and maintain a minimum of 200 barrels of fresh water on location for well control.

3) The contractor shall supply a rig capable of hydraulic pull down. This rig shall be capable of providing a minimum of 20,000 lbf (pounds per foot) hydraulic pull down. The contractor shall utilize this rig, capable of hydraulic pull down, to clean and drill out the wellbore to total depth (TD) of approximately 4240 feet or a depth approved by the Division.

4) All cement plugs will be set through 2.38 inch diameter tubing using Class A cement mixed at 15.6 pounds per gallon. All free crude oil shall be circulated from the wellbore with fresh water prior to setting any plug. Circulation must be achieved prior to setting any plug.

5) Once total depth has been reached the Contractor will set a 400 foot thick bottom plug, from 4240 feet to 3840 feet and wait on cement a minimum of twelve (12) hours. The Contractor will then run their tools into the well to verify the depth to the top of the plug. If the plug level has dropped or it is determined that a competent plug has not been achieved, additional staged bottom plugs may be required, at the discretion of the Division.

6) After a competent bottom plug is achieved, the Contractor will set a 300 foot thick plug from approximately 2440 feet to 2140 feet to cover the former 4.5 inch diameter casing rip point and the top of the Big Lime.

7) The Contractor will then set a cement plug from 550 feet to within 30 inches of the surface to cover the base of the surface casing. The Contractor will wait on cement for twelve (12) hours and then check the cement level and top off with additional cement, if necessary.

8) The well casing shall be cut to the depth shown on the Drawing Plan Set and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.
SCOPE OF WORK
PORTAGE #1 PROJECT
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

EVERS & NOWAK #1 WELL DESCRIPTION

**Background:** The Evers & Nowak #1 is located on 8.43 acre parcel (29-342-00-00-016-000) at 5696 Lakewood Road in Ravenna Township, Portage County. This property is currently owned by Lakewood Hills LLC, a development company. The company had been owned by John and Sue Epling, whom are currently deceased. The only structure that is present on the property is a garage. The property was formerly a construction company’s yard. The well is situated in an open field approximately 800 feet east of Lakewood Road. There are no trees or overhead obstructions around the well.

In January of 2003, a Division Inspector responded to a call of an idle well from Margie Connors, who is the Epling’s daughter. This Division inspection of the Evers & Nowak #1 found this well visibly equipped with only 10.75 inch diameter casing, which was covered by an old tire. The well was leaking natural gas at the time of inspection and the property owner installed a 12 inch diameter PVC pipe over the well for venting purposes. The Division conducted a follow up investigation in October of 2016 and found that the PVC vent line had been removed and the fluid level in the 10.75 inch diameter casing at approximately four (4) inches from the top of the casing. The Division inspector, using his depth meter, ran a weighted line into the well casing to a depth of approximately 32 feet, which was the depth limit of the meter. There were no obstructions detected to that depth.

Division records indicate that the Evers & Nowak #1 was drilled by H.D. Collins in 1965 to a depth of 4259 feet, in the Clinton formation, and was then plugged and abandoned in 1975. Drilling records show the following key formation depths and thicknesses:

<table>
<thead>
<tr>
<th>Formation</th>
<th>Top</th>
<th>Bottom</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface and Drift</td>
<td>0’</td>
<td>62’</td>
<td></td>
</tr>
<tr>
<td>Berea</td>
<td>280’</td>
<td>310’</td>
<td></td>
</tr>
<tr>
<td>Big Lime</td>
<td>2300’</td>
<td>4000’</td>
<td>No water</td>
</tr>
<tr>
<td>Packer Shell</td>
<td>4102’</td>
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<tr>
<td>Shale</td>
<td>4125’</td>
<td>4158’</td>
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<tr>
<td>Stray</td>
<td>4158’</td>
<td>4164’</td>
<td></td>
</tr>
<tr>
<td>Clinton</td>
<td>4164’</td>
<td>4226’</td>
<td>12MCFG show of gas at 4172’; 14 MCFG show</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>of gas at 4178’; 31 MCFG show of gas at 4189’;</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>500 MCFG show of gas 4212’</td>
</tr>
<tr>
<td>Total Depth</td>
<td>4259’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Division records show the following casing and cementing information for the Evers & Nowak #1:

- 10 inch diameter to 280 feet
- 8.625 inch diameter to 442 feet (Mudded to surface)
- 6.625 inch diameter to 2788 feet (Pulled)
- 4.5 inch diameter to 4229 feet (Cemented with 100 sacks of POZ mix)
Division completion records for the Evers & Nowak #1 show that this well was completed on 1-6-1966. The well was perforated from 4164 feet to 4253 feet and was fractured with 1200 barrels of fresh water and 40,000 pounds of sand.

According to Division records the Evers & Nowak #1 was plugged in the following manner:

• All 4259 feet of the 2 inch diameter tubing was removed from the well.
• Fire clay from TD to 3700 feet.
• 2900 feet of the 4.5 inch diameter casing was removed from the well.
• Set a 6 inch cement plug at 2900 feet with 300 feet fire clay on top.
• All 442 feet of 8.625 inch diameter casing was removed from the well.
• Set a 9 inch cement plug at 442 feet with 442 feet of fire clay to surface.
• All of the 280 feet of 10.75 inch diameter casing was left in the well.

Groundwater resources in the area of review are excellent. Wells in this area can yield 300 to 500 gallons per minute (gpm). The ODNR-Division of Water map entitled Ground Water Resources of Portage County (Walker, 1979) indicates that water is obtained from sand and gravel deposits in deep buried valleys and the aquifers are suitable for municipal and industrial development. The well card for the Evers & Nowak #1 indicates that freshwater was encountered at 235 feet below ground level (bgl) in the valley-fill aquifer. There are no water wells within the 500 foot area of review and the work zone does not fall within any source water protection zones. The deepest underground source of drinking water (USDW) is located in the Sharon sandstone or the deepest sandstone unit above the Berea sandstone at approximately 750 feet above mean sea level (msl). Access to a public water supply is available in the area.

**Scope of Work:** This project includes the mobilization and access to the site, plugging the orphan well, as well as regrading and vegetating all disturbed areas as described.

**Designated Route:** From SR 44: take Prospect Road north for 1.4 miles. Turn Left (west) onto Summit Street and continue for 2.2 miles. Turn right (north) onto Lakewood Road, travel 1600 feet to the site access road at 5696 Lakewood Road and turn right onto the gravel drive. Travel east for 400 feet, turn left and travel north for 340 feet, turn right and travel northeast 400 feet to the well.

It is the Contractor’s responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over the all roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Chief, of all road use notifications/approvals prior to mobilizing equipment to the site.
SCOPE OF WORK
PORTAGE #1 PROJECT
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

EVERS & NOWAK #1 PLUGGING PLAN

Further detailing of the Plugging Plan requirements are found in the Detailed Specifications. Historic well information has been provided in Appendix II.

1) The Contractor will excavate around the well to expose the 10.75 inch casing and evaluate its condition. If competent casing is found, the Contractor will install enough casing of similar diameter to bring the top of the existing casing to ground level or a suitable working height.

2) The Contractor will install an appropriate well head and an approved method of well control on the 10.75 inch diameter casing to insure there is control of natural gas and/or fluids generated from the well. The Contractor will establish and maintain well control throughout the entire plugging process. The contractor will have a minimum of 200 barrels of fresh water on location to maintain well control.

3) The Contractor will then clean out the well bore to a depth of 4229 feet or a depth approved by the Division. The plugging records for this well indicate that there are cement plugs (assumed to be precast) set at 442 feet (8.625 inch diameter surface casing seat) and at 2900 feet (assumed rip point of the 4.5 inch diameter casing). This work shall be considered part of line item “Well Preparation & Plugging”.

4) All cement plugs will be set through a working string of 2.38 inch diameter tubing using Class A cement mixed at 15.6 pounds per gallon. All free crude oil shall be circulated from the wellbore with fresh water prior to setting any plug. Circulation must be achieved prior to setting any plug.

5) Once total depth has been reached the Contractor will set a 500 foot thick bottom plug, from 4220 feet to 3720 feet and wait on cement a minimum of twelve (12) hours. The Contractor will then run their tools into the well to verify the depth to the top of the plug. If the plug level has dropped or it is determined that a competent plug has not been achieved, additional staged bottom plugs may be required, at the discretion of the Division.

6) After a competent bottom plug is achieved, the Contractor will set a 200 foot cement rip plug from 2900 feet to 2700 feet.

7) The Contractor will then set a 300 foot cement plug from 2600 feet to 2300 feet, to cover the top of the Big Lime.

8) The Contractor will then set a cement plug from a depth of 500 feet to within 30 inches of the surface. The Contractor will wait on cement for twelve (12) hours and then check the cement level and top off with additional cement, if necessary.

9) The well casing shall be cut to a minimum of thirty (30) inches below ground level and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.
HODGEMAN #1 WELL DESCRIPTION

**Background:** The Hodgeman #1 is located Franklin Township, Portage County, just outside the southeast city limits of Kent. This well is situated approximately 2650 feet north/northeast of the intersection of Summit Road and Hodgeman Lane and at the rear of the property at 5626 Hodgeman Lane. This 42.64 acre property (parcel #12-017-00-007-000), is owned by James Raymond Hodgeman Senior. The residence on the property, which was built in the late 1800’s, is occupied by his daughter Cathy Hodgeman and her children. This well is located +/- 350 feet southeast from the rear of the house, and +/- 400 feet east of Hodgeman Lane, in an area covered by sparse brush. There are no trees or other overhead obstructions around the well. The area to the north and east of the well floods in the spring of the year and is an area of wetlands. The nearest drainage system to the Hodgeman #1 is Brimfield Ditch, located approximately 100’ east of the well. This system drains to the north, approximately 4000 feet, into Breakneck Creek which in turn flows to the northwest, approximately 1.8 miles, into the Cuyahoga River.

In January of 2016, a Division Inspector responded to a call from Dominion East Ohio Gas of a natural gas odor that was reported by a Division of Wildlife Inspector. Dominion, which has several gas lines in this area, excavated in the area of the gas odor to a depth of +/- 24 inches and exposed a 10.75 inch diameter well casing. While there was no smell of natural gas, there was extreme bubbling in the fluid within the well casing. However, there were no discernable readings collected with the Sperian meter by the inspector. This fluid contains gray sediment, assumed to be plugging material, which is being emitted from the casing and is accumulating at the surface around the well casing. If the area does flood, this sediment will migrate into the wetland area and Brimfield Ditch. The Division inspector used a High Range Quantab to test the well fluid with no response, indicating fresh water. Our database records show that fresh water was encountered at a depth of 100 feet when drilling this well.

The Orphan Well (OW) Section of the Division conducted a follow up investigation in January and June of 2016 and found the fluid level in the 10.75 inch diameter well casing at 4 inches from the top of said casing. The Division OW inspector, using his depth meter, ran a weighted line into the well casing to a depth of +/- 370 feet, which was the depth limit of the meter. There were no obstructions detected to that depth.

Division records indicate that the Hodgeman #1 well was drilled in 1966 to a depth of 4230 feet, in the Clinton formation, and was then plugged and abandoned in 1975. Drilling records show the following key formation depths and thicknesses:

<table>
<thead>
<tr>
<th>Formation</th>
<th>Top</th>
<th>Bottom</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Berea</td>
<td>275’</td>
<td>285’</td>
<td>F. Wtr. @100’</td>
</tr>
<tr>
<td>Big Lime</td>
<td>2265’</td>
<td>3970’</td>
<td></td>
</tr>
<tr>
<td>Salt</td>
<td>2928’</td>
<td>3160’</td>
<td></td>
</tr>
</tbody>
</table>
Casing records indicate that the Hodgeman #1 well was equipped with the following diameter casings:

- 10.75 inch to 89 feet
- 8.625 inch to 370 feet
- 7 inch to 2689 feet (Pulled)
- 4.5 inch to 4230 feet

According to Division records this well was plugged in the following manner:

- Fire clay placed from TD to 3730 feet,
- 2872 feet of 4.5 inch diameter casing removed from the well,
- Brush and stone plug set at 2825 feet with 150 feet fire clay on top,
- Brush and stone plug at 800 feet with 350 feet of fire clay on top,
- Unable to pull 8.625 inch diameter casing because it was welded to the 10.75 inch diameter casing.
- Filled hole from 450 feet to surface with fire clay,
- 10 inch diameter casing left in well. Fresh water coming out of 10 inch/8 inch annulus.

Groundwater resources in the area of review are good. Wells in this area can yield 20 to 100 gallons per minute (gpm). The ODNR-Division of Water map entitled Ground Water Resources of Portage County (Walker, 1979) indicates that “ground water [can] be obtained from Sand and gravel lenses or layers interbedded with fine sand and clay…from wells ranging to 200 feet deep.” One water well is located within the area of review at 5626 Hodgeman Lane. An ODNR water well log was unable to be located; however, the well is reported to date to the 1940s. The depth was measured at 109.7 feet below ground level (bgl) and the static water level (swl) was measured at 9.94 ft bgl. Water well logs #395377 and #610169 approximately 750 ft east of the Hodgeman #1 are 115 ft and 111 ft deep respectively. Based on these logs there is approximately 100 ft of unconsolidated sand, gravel, and clay over sandstone bedrock.

The work zone does not fall within any source water protection zones and the deepest underground source of drinking water (USDW) is located in the Sharon sandstone or the deepest sandstone unit above the Berea sandstone at approximately 750 feet above mean sea level (amsl). Access to a public water supply is available in the area.

**Scope of Work:** This project includes the mobilization and access to the site, plugging the orphan well, as well as regrading and vegetating all disturbed areas as described.

**Designated Route:** From SR 261: take Summit Road east for 225 feet and turn left (north) onto Hodgeman Lane. Travel 1900 feet to the gravel access drive at 5626 Hodgeman Lane. Turn right onto the drive and continue east for 400 feet to the well.
It is the Contractor’s responsibility to contact all County, Township, State and Municipal Officials having jurisdiction over the all roads that are intended to be utilized for this project. The Contractor shall provide written documentation to the Chief, of all road use notifications/approvals prior to mobilizing equipment to the site.
HODGEMAN #1 PLUGGING PLAN

Plugging data indicates that this well was filled with clay to the surface from the brush and stone plug set at a depth of 800 feet. However, a Division inspection found this well open to a depth of 370 feet.

1) Database records indicate that the 8.625 inch diameter casing was welded to the 10.75 inch diameter casing. The Contractor will excavate around well bore and expose the 10.75 inch and 8.625 inch diameter casings and visually examine their condition immediately below grade. The Contractor will remove the welds connecting the two casings; prior to the removal of these welds, the Contractor shall properly secure the casing. If the casing is found to be severely degraded, the Contractor will remove this portion and install enough new casing, of similar diameter, to bring it to ground level or a suitable working height.

2) The Contractor will install an appropriate well head and an approved method of well control on the 10.75 inch diameter casing to insure there is control of gas and/or fluids generated from the well. The Contractor will establish and maintain well control throughout the entire plugging process and maintain a minimum of 200 barrels of fresh water on location for well control.

3) The Contractor will run their tools into the well bore and verify the depth to which it is open. The Contractor will remove the 370 feet of 8.625 inch diameter casing from the well. Once this casing is removed, The Contractor will stage the casing on pipe racks on a bermed liner and covered. The Contractor will provide accurate measurements of the amount of casing retrieved from the wellbore.

4) The Contractor will then clean out the well bore to a depth of 400 feet and install 375 feet of 7 inch diameter casing, with the appropriate centralizers. This casing will be cemented in place using Class A cement mixed at 15.6 pounds per gallon. The contractor will wait twelve (12) hours for the cement to cure.

5) The Contractor will then clean out the hole to a depth of 4230 feet or a depth approved by the Division.

6) All cement plugs will be set through 2.38 inch diameter tubing using Class A cement mixed at 15.6 pounds per gallon. All free crude oil shall be circulated from the wellbore with fresh water prior to setting any plug. Circulation must be achieved prior to setting any plug.

7) Once total depth has been reached the Contractor will set a 400 thick foot bottom plug, from 4230 feet to 3830 feet and wait on cement a minimum of twelve (12) hours. The Contractor will then run their tools into the well to verify the depth to the top of the plug. If the plug level has dropped or it is determined that a competent plug has not been achieved, additional staged bottom plugs may be required, at the discretion of the Division.

8) After a competent bottom plug is achieved the Contractor will set a 300 foot thick cement plug from 2565 feet to 2265 feet to isolate the former 4.5 inch diameter casing rip point and to cover the top of the Big Lime.

9) The Contractor will then set a 300 foot thick isolation plug from 800 feet to 500 feet.
10) The Contractor will then set a cement plug from 500 feet to within 30 inches of surface. The Contractor will wait on cement for twelve (12) hours and then check the cement level and top off with additional cement, if necessary.

11) The well casing shall be cut to a minimum of thirty (30) inches below ground level and the Contractor shall set the plugged well identification as outlined in the General Specifications and Ohio Administrative Code 1501-9-11-10.
SCOPE OF WORK
PORTAGE #1 PROJECT
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

DETAILED SPECIFICATIONS

MOBILIZATION

A. Description: This work shall consist of the development of access and the mobilization of the Contractor's forces and equipment necessary for performing the required work under the Scope of Work for the well site.

This item shall include the transportation of personnel, equipment, and supplies to and from the site as well as the maintenance of all onsite access roads.

This item shall include the removal of the vegetation within the limits shown on the Drawing Plan Set, as required, to provide adequate space to maneuver equipment to complete the proposed work at each well.

B. Execution: No additional compensation shall be made to the Contractor for remobilization after his equipment has been removed from the site. If applicable, this shall include remobilization of equipment if removed due to winterization of the project.

Any damage to the road, drives, and/or culverts caused by the mobilization shall be repaired by the Contractor at the Contractor’s expense. All repairs shall be done equal to or better to that which existed prior to construction activities.

The Contractor shall only remove or trim trees as shown on the Drawing Plan Set to provide adequate space to maneuver equipment to complete the proposed work. The Division shall exercise control over clearing and shall designate all trees, plants, shrubs, abandoned material, trash, etc., to be removed or to remain. This work shall also include the preservation from injury or defacement of all trees designated to remain.

If necessary, coordinate the clearing of trees with the Division to protect threatened and endangered bat habitat. To prevent adverse impacts to the Indiana Bat, clearing of potential roost trees shall not take place between April 1st and September 30th.

Burning of debris materials shall not be permitted on-site.

C. Measurement: Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division.

D. Payment: The cost of this work shall be included in the cost proposal lump sum price for "Mobilization."
SITE SAFETY

A. Description: The work will include the installation and implementation of safety procedures for the plugging of the orphan well as described herein.

B. Definitions & Installation: It is the Contractor’s responsibility to properly maintain all of the latter mentioned throughout the duration of the project. Any damages shall be repaired or replaced at no additional cost to the Division. Site safety measures shall be removed prior to the demobilization of the Contractor’s workforces.

Any release of materials into or onto the ground or surface waters outside of the primary and/or secondary containment shall follow the Ohio One-Call System as described in Appendix I, “One Call”. The Ohio One-Call System shall be contacted at 1-844-OHCALL1 within 30-minutes of becoming aware of the occurrence.

1. Notification: The Contractor shall work in conjunction with the Division and the local Fire Department to contact the landowner one week prior to the commencement of plugging operations. The landowner shall be notified of the potential safety issues.

2. Temporary Construction Fence & Posts:

The temporary construction fencing shall be composite, orange mesh with a minimum overall height of four (4) feet. Fence posts are to be steel five (5) feet t-posts. Fence materials shall meet the 2016 ODOT Construction and Materials Specifications (CMS) Item 710.11.

The posts shall be driven or set in holes to a minimum depth of 1.5 feet and at intervals not to exceed ten (10) feet. The fence shall be stretched and securely fastened to each post using metal or plastic ties.

Fencing shall be placed around the work area immediately surrounding the well head. The Contractor shall work in conjunction with the Division for placement of the temporary fence. All fence shall be removed at the completion of the project.

3. Protective Barriers: During rig up and plugging operations, a physical barrier will be required between the operations and the occupied dwelling. The barrier must be of sufficient height, length and material to prevent any fluid spray from rig floor connection/disconnections and any spray from flowback operations from contacting the occupied dwelling.

4. Identifications, Markings & Plugs: All conduits capable of allowing methane migration (i.e. ventilation pipes, storm/water drains) shall be identified and capped by the Contractor.

All identifications, marking and plugs shall be inspected and approved by the Division prior to beginning the "Well Preparation and Plugging."

5. Air Movers (Industrial Fans): The Contractor will also be required to have onsite industrial fans or air movers in the event natural gas is detected and found to be settling at ground level and not properly dissipating from the site.

6. Temporary Vent: The well shall be temporarily vented to the atmosphere when plugging operations are not occurring or at the end of each day’s work until plugging operations are complete and no gas is detected.
7. **FEMA 100-year Floodplain Requirements:**

   **Hodgeman #1:** This well is located within the FEMA 100-year floodplain limits. In an event that the site begins to flood, the Contractor will be required to immediately shut in the well and remove all onsite equipment and chemicals that could potentially cause pollution and/or contamination.

8. **Emergency Response Plan:** The Contractor will assemble an Emergency Response Plan (ERP) with all contact information, emergency preventative measures, and contingency plans for any well-related issues that may occur. The Contractor will be responsible for maintaining this ERP on site during the plugging operations. Ingress/Egress for evacuation and/or public safety will be discussed in the pre-safety meeting to be held on location by the Contractor with local responders and Division personnel. These routes will be listed in the ERP. The Division will review with the Contractor prior to starting plugging operations.

C. **Measurement:** Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division.

D. **Payment:** Payment for this work, including labor, installation, materials and removal shall be made at the cost proposal lump sum price for "Site Safety."

**SECONDARY CONTAINMENT**

A. **Description:** This item shall include all labor and materials required for the installation, maintenance and deconstruction of the secondary containment. Onsite materials and equipment required to be stored within the secondary containment shall be as follows: containers that store liquid brine, oilfield waste, and/or fuels as well as any required pumps. In determining the method, design, and capacity for secondary containment, the Contractor shall address the typical failure mode, and the most likely quantity of brine or other oilfield waste substance that would be discharged.

B. **Materials:** The Contractor shall supply catchment basins or diversion structures to intercept and contain discharges of brine or other oilfield waste substances during the project. Materials shall consist of impermeable containers or liners made of a material that is compatible with the waste stored or used within the containment. Containment materials shall be impervious and have supporting documentation of the permeability, chemical compatibility, and other applicable QA/QC standards. **Use of a liner shall at a minimum be a 20-mil thickness.**

   Materials shall be durable enough to support the weight of heavy equipment used for the plugging operations. Materials shall have sufficient strength and thickness to maintain the integrity of the container or liner. The container or liner shall be designed, constructed, and maintained so that the physical and chemical characteristics of the container or liner are not adversely affected by the waste and the container or liner is resistant to physical, chemical and other failure during transportation, handling, installation and use.

   Liner walls shall consist of metal, wood, concrete, or plastic. Wall materials shall be designed, constructed, and maintained to withstand the overtopping and sliding forces of secondary containment filled to capacity.

   The Division shall determine the merit of the proposed materials compatibility, impermeability,
integrity, and durability in determining if the material is sufficient for the project.

C. **Installation:** Secondary containment shall be installed prior to any drilling or liquid storage at the project site.

Upon request of the Division, the Contractor shall provide calculations in tabular format of the containment providing both the secondary containment capacity and the on-site material storage. The Division can require that sections of a secondary containment be removed for inspection and sampling if a spill occurs during the project.

Installation of the containers or liners, including seams and pipe penetrations, shall be in accordance with the manufacturer’s recommendations. All seams and non-seam area of the container or liner shall be inspected by the Division for defects, holes, and blisters.

Care shall be taken when operating equipment on or near the container or liner to prevent any damage to the secondary containment. If damage occurs, it shall be repaired by the Contractor at his/her expense prior to continuing the project.

The Contractor shall retain all ownership and responsibility for the secondary containment. All secondary containment shall be removed from the site and retained by the Contractor at the conclusion of the project.

D. **Measurement:** Secondary containment, which includes all materials, labor, and equipment necessary to provide the required secondary containment, will be considered and measured as a unit satisfactorily completed and accepted by the Division. Secondary containment shall not be considered complete until all secondary containment has been removed from the site at the completion of the project.

E. **Payment:** Payment for this work shall include all material, labor, and equipment necessary to complete the work and be made at the cost proposal lump sum price for "Secondary Containment."

**SILT FENCE**

A. **General:** This item covers construction of the silt fences and/or straw bale dikes. The Division shall designate utilization of silt fence, straw bale dikes or a combination of both at locations selected for placement.

The placement of silt fence and straw bale dikes within the limits of construction shall be at the discretion of the Division.

During the life of the project, the Contractor shall maintain these silt and erosion-control structures. Accumulated silt shall be removed when it, in the Division's opinion, may damage or reduce the effectiveness of the structure.

B. **Straw Bale Dikes**

1. **Materials:** Straw bale dikes shall be constructed with twine-bound square straw or hay bales, staked to remain in place.

2. **Installation and Execution:** The location of the dikes shall be as directed by the Division, at
the time of construction. When the usefulness of the dikes has ended, they shall be removed and disposed. Dikes may remain in place upon completion of the project only when permitted by the Division.

C. Silt Fence

1. Materials
   a. The silt fence fabric shall conform to the 2016 ODOT Item 712.09, Type C. The silt fence shall be installed in accordance with all manufacturers' instructions.

      The fabric shall be free of any treatment that might significantly alter its physical properties. During shipment and storage, the fabric shall be wrapped in a heavy-duty protective covering to protect it from direct sunlight, dirt, and other debris.

      The manufacturer shall submit certified test data to cover each shipment of material.

   b. The silt fence used shall be a prefabricated silt fence with fabric already attached to posts or shall be assembled in the field according to the following installation guidelines.

      The fabric shall be a pervious sheet composed of a strong, rot-proof polymeric yard or fiber oriented into a stable network, which retains its relative structure during handling, placement, and long-term service. It shall have excellent resistance to deterioration from ambient temperatures, acid, and alkaline conditions, and shall be indestructible to microorganisms and insects. The material shall be resistant to deterioration by ultraviolet light and protected until placement as recommended by the manufacturer such that no deterioration occurs. During shipment and storage, the rolls of fabric shall be protected against deterioration from the sun, mud, dirt, dust and other harmful conditions at all times until their use.

2. Installation Guidelines for Silt Fence: Silt fence shall be installed in the following manner.

   a. First, a small toe-in trench shall be dug along the line where the silt fence is to be placed. The trench shall be a minimum of 6-inch deep and 6-inch wide. The excavated material shall be placed on the front or uphill side of the trench to facilitate backfilling later.

   b. Next, fence posts shall be driven into the back or downstream side of the trench. The posts shall be driven so that at least one-third (1/3) of the height of the post is in the ground. When installing a prefabricated silt fence with fabric attached to the posts, the posts shall be driven so that at least 6-inch of fabric shall be buried in the ground. Most prefabricated silt fences have posts spaced approximately 6 feet – 8 feet apart, which is usually adequate. If there is a low spot where most sediment tends to collect, the prefabricated silt fences can be backed up with bale backup. Posts shall be hardwood with sufficient strength to support a full load of deposited sediment.

   c. Finally the trench shall be backfilled with the excavated material and tamped so that at least 6-inch of the fabric is securely toed into the ground to prevent under-mining.

   d. The silt fences shall be maintained throughout construction. The Contractor shall conduct regular inspections and after all heavy rains. Damaged fences must be repaired immediately.
e. At the completion of construction and upon establishment of suitable vegetation as determined by the Division, all silt fence structures shall be removed. Areas disturbed by the removal operation including temporary access roads shall be revegetated. In general, this operation shall consist of regrading, re-fertilizing, reseeding and mulching.

D. Measurement: Measurement for payment for the above-described work shall be made by actual field measurements of quantities satisfactorily installed and completed. When using silt fence with bale backup the measurement shall be the length of the silt fence installed, plus the length of the straw bale dike installed.

E. Payment for Silt Fence and Straw Bale Dikes: Payment for this item shall be made at the cost proposal unit price per linear foot of "Silt Fence." The Division shall only pay for quantities of items that are completed.

ROAD MATS

A. Description: This item shall consist of the transportation, delivery, installation, and removal of road mats as described. The placement of road mats within the limits of construction shall be at the discretion of the Division. This item shall be utilized to protect the existing utilities, driveways, roadway, curbs, sidewalks and lawn space that will be traversed within the construction work limits.

B. Material: Road matting shall be non-permeable, composite mats. Mats shall be a minimum of four (4) inches thick with a minimum surface dimension of seven (7) feet wide, and thirteen (13) feet long. Road mats and associated components (i.e. ramps, berms, & fittings) shall be installed per the manufacturer’s recommendations.

C. Measurement: Measurement for payment for the road mats shall be made by actual field measurements of quantities satisfactorily installed at the site. Each road mat shall be measured for a square foot installed.

Road Mats shall be measured as one use for the duration of the project (3 wells).

For circumstances in which the Division extends the projected completion date (i.e. well obstructions, required milling operations, etc.), the contractor shall also provide a cost for "Road Mats" as a dollar amount per mat per day under “Contingency Specifications” within the original cost proposal sheet. Additional payment will be evaluated and determined by the Division.

D. Payment: The cost of this work shall be included in the cost proposal square foot price for "Road Mats."

SURFACE CASING

A. Description: This item covers all labor, equipment, and material required to set the surface casing for the plugging of the orphan well.

A. Materials: The surface casing shall be a seven (7) inch diameter casing conforming to a 20 pound
per foot STC (Short Thread and Coupling) or an approved equal material specifications. The contractor shall supply the proper ranges and pup joints to complete the lengths required during installation.

Pipe shall be new pipe or used pipe that has been tested and drifted. The contractor shall supply documentation for pipe that has been tested and drifted. The Division shall approve used pipe based on documentation and inspection of the pipe.

The Contractor shall also supply and install two (2) centralizers. The first centralizer shall be installed on the second joint from the bottom and the second centralizer installed on the second joint from the top.

C. Installation and Execution: The surface casing shall set to a depth as detailed in the Plugging Plan and Cost Proposal Sheet. This quantity is for estimating purposes only. All surface casing shall be drilled in place. Drilling shall be completed with an 8.875-inch size drilling bit. The Division shall not be responsible for additional materials if an alternative method or drill bit is proposed for use.

D. Measurement: Measurement for payment for the surface casing work shall be made by actual field measurements of quantities satisfactorily installed and completed per linear foot of surface casing set.

E. Payment: Payment for this item shall be made at the cost proposal unit price per linear foot of "Surface Casing".

**WELL HEAD CONTROL**

A. Description: This work consists of all labor, equipment, and material necessary to establish control of the well. This item shall include the installation of a wellhead control device/flow diverter on the most appropriate well casing.

B. Execution: The Contractor is responsible for installing, according to best management practices, a wellhead control device/flow diverter on the well casing. The Contractor shall maintain well head control and devices for the duration of the plugging project.

If existing casing is discovered, the Division shall make the determination for the overall exposed depth of casing and casing extensions. If utilized, the casing shall be free from any damages or defects. If required, the casing shall be cut and cleaned of any dirt, oils and debris prior to welding extensions and/or installation of the diverter. At the discretion of the Division, further investigation of the well may be required in order to determine the adequacy of casing. This shall be paid for under line item "Logging".

Once a well head control device is installed, all fluids, gases and solids generated by the plugging process will be diverted into a tank. This tank will be set a minimum of twenty (20) feet from the well. The Contractor shall also maintain an adequate supply of freshwater at the well for possible well control emergencies, which shall be paid under the line item "Well Control Fluid." The Contractor will install a two (2) inch diameter (minimum) kill line on the well. The injection point for the kill line will be a minimum of thirty (30) feet from the well.

No plugging operations shall begin until a satisfactory inspection of the prepared well has been completed by the Division.
C. **Measurement:** Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. **Payment:** Payment for the above described work, which includes all labor, materials, equipment necessary for the well head control shall be made at the cost proposal lump sum price for "Well Head Control."

**WELL CONTROL FLUID**

B. **Description:** The work covered by this section shall consist of furnishing all labor, equipment, and material necessary to provide and use water as a “kill” fluid for the drilling and plugging process of the well.

B. **Requirements:** The Contractor shall receive prior approval from the Division before using any onsite waters for the plugging process (i.e. streams, lakes or ponds). If approved, withdrawing waters of the state shall not exceed 100,000 gallons per day from an individual water source.

The Division will require a minimum of 200 barrels of freshwater well control fluid be maintained on the site during the plugging project at each well site.

C. **Measurement:** Measurement for payment for the above-described work shall be made by the actual quantity of barrels (bbls) of water used to successfully plug and/or drill the orphan well. The Division will at a minimum pay for the quantity required to be maintained on site.

D. **Payment:** Payment for the above work shall be made at the cost proposal unit price per barrel (bbls) for "Well Control Fluid."

**WELL PREPARATION & PLUGGING**

A. **Description:** This work consists of all labor, equipment, and material necessary to prepare the well for plugging and complete all required plugs. This shall include drilling, cleanout of the well bore to the total depth of the well, circulating the well bore prior to each plug, setting all required plugs, and verification of each plug depth.

B. **Execution:** The Contractor shall supply all equipment needed to complete the well preparation in an efficient manner that will be approved by the Division. This shall include but not be limited to the rig, cementing equipment, and associated equipment.

The Contractor will drill and circulate the well bore prior to setting any casing or well plugs. The Contractor shall identify the diameter of the well bore below the surface casing and drill with a full size bit to total depth. In any case where an obstruction is encountered and total depth cannot be achieved, the Contractor shall immediately notify the Division. The Contractor shall propose a plan to assess the nature of the obstruction that shall be approved by the Division. Additional work associated with removal of the obstruction shall be described and paid for under the Contingency Specifications and as listed on the Cost Proposal Sheet and agreed upon by the Division.

For the Dunlap #2 well, the Division requires that the Contractor supply a rig capable of hydraulic pull down. This rig shall be capable of providing a minimum of 20,000 lbf
(pounds per foot) hydraulic pull down. The Contractor shall utilize this rig, capable of hydraulic pull down, to clear the wellbore of the obstruction and then drill the hole to total depth or a depth approved by the Division.

When required the Contractor shall complete the ripping of the casing or tubing at a depth approved by the Division. The Contractor shall propose the method for ripping of the casing or tubing and shall be approved by the Division. Ripping shall be considered incidental to this line item.

The Contractor shall circulate the wellbore with freshwater or approved drilling muds prior to cementing. Lost Circulation Material (LCM) may be used to aid in obtaining circulation, as approved by the Division. Circulation must be established prior to conducting cementing procedures. Use of LCM shall be per the “Lost Circulation Material” specification included in the Contingency Specification. LCM shall be available at the site during the completion of this line item "Well Preparation & Plugging." The well shall be in a static condition prior to beginning any cementing activities.

Prior to setting any plugs the Contractor shall remove all free crude oil from the wellbore either by bailing or circulating.

The Contractor shall set all plugs as described in the Plugging Plan to the depths described with the materials described. This shall include setting the bottom plug, intermediate plugs, and the surface plug. All plugs shall be allowed to set for the periods described in the Plugging Plan. The Contractor shall determine with the required tools if any plug has dropped. If a plug has dropped or is determined to not be a competent plug, then drill out of the plug or additional staged plugs may be required at the discretion of the Division as a part of this line item. The Division reserves the right to adjust the Plugging Plan during the plugging process based on site conditions.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the well preparation and plugging shall be made at the cost proposal lump sum price for "Well Preparation & Plugging."

**TUBING/DRILL PIPE**

A. Description: This item covers all labor, equipment, and material required to supply tubing and/or drill pipe at the site for the purpose of drill out and placement of cement and spacers.

B. Materials: The Contractor shall supply a minimum outside 2.375-inch diameter tubing in a condition that will allow for the pumping of cement for the purposes of plugging the well. With approval from the Division the Contractor may substitute tubing with appropriate drill pipe for use and payment of this item. Only drill pipe used at the site in place of the tubing will be paid for in this line item. Drill pipe used for drilling purposes will not be considered for payment in this line item. Otherwise drill pipe shall be considered paid for in the line item "Well Preparation & Plugging."

For this project the Contractor shall supply up to 4240 feet of 2.375-inch diameter tubing to all the project sites. The Contractor shall identify the weight of the tubing supplied for
quantity calculating purposes.

C. **Installation:** The Contractor will install and remove the tubing as necessary in order to complete the **Plugging Plan.** The Contractor shall maintain ownership at the conclusion of the project of all tubing that was brought to the site for these purposes.

D. **Measurement:** Measurement for payment of the above-described work shall be made by actual field measurements per linear foot of tubing delivered to the site.

*Tubing/Drill Pipe shall be measured as one use for the duration of the project (3 wells).*

E. **Payment:** Payment for this item shall be made at the cost proposal lump sum price for "Tubing/Drill Pipe."

### CLASS “A” CEMENT

A. **Description:** This item shall cover all labor, materials, and equipment necessary to plug the well as specified in the **Plugging Plan.**

B. **Materials:** Cement materials shall be API Class “A” or with prior approval, shall be of material conforming to 2016 ODOT CMS Item 701.04 (ASTM C150 Type I).

The cement shall not contain bentonite, fly ash, or other extenders which delay set time or decrease the overall compressive strength unless otherwise noted.

Water used for cementing shall be free of any impurities that will adversely affect set time and compressive strength.

C. **Installation:** The Contractor shall notify the Division at least 24 hours in advance of placing the cement.

Preparation of the well bore shall be completed per line item “**Well Preparation & Plugging**” prior to placement of the cement.

All cement must be mixed on-site. The cement slurry shall be mixed between 15.4 and 15.8 pounds per gallon.

The Class “A” Cement shall be placed to the depths and intervals described in **Plugging Plan.**

It is the Contractor’s responsibility to provide a mud scale for weighing the cement slurry.

D. **Setting:** Setting times shall be completed as described in the **Plugging Plan.** For the surface plug any void space between the top of the cement and the top of the casing shall be filled to achieve a level cement line with the top of the casing. This shall be done at no additional cost to the Division.

The cement must develop a minimum compressive strength of 500 PSI after 24 hours at well bore temperatures. The Division reserves the right to collect test cylinders throughout the duration of the cementing process.

E. **Measurement:** Measurement for payment shall be based on the actual quantity of sacks of cement acceptably placed and shall be verified with delivery tickets. A sack shall be considered to be 94
pounds prior to mixing.

F. Payment: The above described work shall be paid for at the cost proposal unit price per sack for "Class “A” Cement."

CEMENT MIXING & PUMPING

A. Description: This item shall cover all labor, materials, and equipment necessary to mix and pump cement as specified in the Plugging Plan.

B. Execution: Cementing equipment required on site to mix and pump casing cement and cement plugs shall be provided until each individual casing cementing or plug cementing is completed. This shall include but not be limited to pump truck, mud pump, and associated equipment.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the mixing & pumping of cement into the well shall be made at the cost proposal per unit price per each for "Cement Mixing & Pumping."

FLUID DISPOSAL

A. Description: This item shall consist of removing and disposing of the fluid generated from the well plugging process. Fluids to be removed shall be at the discretion of the Division, and shall be injected at an approved Class II disposal well as listed on the Contractor’s cost proposal sheet.

B. Material: Materials will be defined below as described for the purposes of this scope of work.

    Contaminated Fluids: Contaminated fluid will be considered as all fluids used in the circulation of the well bore, fluids utilized as a “kill” substance and/or fluids generated from the well. The Division reserves the right to deem a fluid “contaminated” at its discretion.

    Contaminated fluids are further defined as water that contains quantifiable concentrations of oil, natural gas(es), condensate, brine, plugging products, or other oil field waste substances.

    Freshwaters: Water that has not been classified as a contaminated fluid and has been stored in an uncontaminated container shall be visually inspected for oil sheen, and field tested for pH and chlorides. The chloride concentration shall be less than 250 mg/L and the pH shall be within a range of 6.5-8.5 standard units (SU). If a water is deemed as freshwater based on these inspections and tests, the Contractor may discharge freshwater into or onto the land in an appropriate manner. Freshwater disposal shall not be paid for under this line item "Fluid Disposal."

C. Off-Site Disposal: Fluids designated as “contaminated” shall be hauled to an appropriate Class II disposal well. Proof of disposal from the disposal well shall be furnished within three (3) days of acceptance to the Division.

No additional compensation shall be made for onsite fluid storage. If contaminated fluids remain
onsite, proper containment shall be established meeting all requirements as described in line item "Secondary Containment" at no additional cost to the Division. Onsite storage time shall not exceed 72 hours after plugging activities have been completed.

D. Measurement: Measurement for payment shall be verified based on documentation proof of a quantity of disposal from the disposal well utilized.

E. Payment: Payment shall be made at the cost proposal unit price barrel for "Fluid Disposal."

**CONTAMINATED MATERIAL DISPOSAL**

A. Description: This item shall consist of removing contaminated soils and cuttings from the site for off-site disposal. Soils and cuttings to be removed shall be at the discretion of the Division, and shall be disposed of at an approved EPA licensed landfill as listed on the Contractor’s Cost Proposal Sheet.

B. Material:

Contaminated Soils/Cuttings: Contaminated soils and cuttings are defined as soils or cuttings in which oil, gas, condensate, brine, plugging products, or oil field waste substances have been released in or on the land.

The Contractor will excavate and properly dispose of all soils from the location that are visibly impacted with oilfield contaminants. The Contractor shall solidify any residual fluid associated with these soils with Portland Cement, prior to removal as a part of this line item. Prior to solidification of contaminated materials, the contractor shall use due diligence to remove fluids from the contaminated materials. Fluids removed from the contaminated materials shall be disposed of per line item "Fluid Disposal."

Soils deemed “contaminated” as a result of Contractor negligence during the plugging process will be removed and disposed of at the Contractor’s expense. Disposal procedures will conform to all requirements stated within this line item.

C. Off-Site Disposal: Soils designated as “contaminated” shall be hauled to an appropriate licensed landfill. Copies of truck weight tickets from the landfills shall be furnished within 7 days of acceptance to the Division.

The Division reserves the right to require soil analysis testing throughout the duration of the project. Contaminated soil analysis testing shall be considered incidental to this line item.

Contaminated soils shall be loaded and hauled away as they are excavated.

No additional compensation shall be made for onsite contaminated soil storage. If excavated soils remain onsite, proper containment shall be established meeting all requirements as described in line item "Secondary Containment" at no additional cost to the Division. Onsite storage time shall not exceed 72 hours after plugging activities have been completed.

D. Measurement: Measurement for payment shall be verified based on weight tickets of quantities disposed at the approved EPA licensed landfill.

E. Payment: Payment shall be made at the cost proposal unit price per ton for "Contaminated
SALVAGE MATERIAL DISPOSAL

A. Description: This item shall consist of preparing, removing, and salvaging all materials from the site that have a salvage value as shown on the Drawing Plan Set or as required by the Chief. All items to be salvaged shall include all surface equipment, well casing, and production equipment. Salvage items shall also include any hydrocarbon materials (oil, condensate, etc.) that have a marketable value. Salvage items shall be stored onsite within the construction project limits until removed for salvage.

B. Off-Site Disposal: Prior to removal from the site the Contractor shall supply in writing to the Division an inventory of all materials to be salvaged. On the behalf of the Division the Contractor shall salvage materials inventoried. Once materials have been salvaged the contractor shall reimburse the Division for the salvage value per the line item "Salvage Material Reimbursement."

Prior to disposal of any salvage materials from the project site, the Division will complete a radiological assessment of salvage materials that have been provided on an inventory to the Division. The Division shall be given a minimum of two (2) working days notice to complete the assessment. Salvage materials staged on the project site shall be staged on a pipe rack where determined applicable by the Division. Salvage materials shall be on an impervious liner that will collect any residual fluids or scale.

Prior to disposal of any salvage materials the Contractor shall prepare, including cleaning, the salvage materials for lawful salvage.

C. Execution: The Contractor shall include in this line item any expense incurred with the removal and the salvaging. The following is a list of items known to be salvaged from the site. This list is not considered to be all inclusive.

- 370 feet od 8.625 inch diameter casing.

D. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

E. Payment: Payment shall be included at the cost proposal lump sum price for "Salvage Material Disposal."

SALVAGE MATERIAL REIMBURSEMENT

A. Description: This item shall consist of reimbursing the Division for all materials removed from the site for salvage including all surface equipment, well casing, production equipment, and marketable hydrocarbons.

B. Reimbursement: The Contractor shall supply salvage receipts to the Division for materials inventoried and removed from the site for salvage. The Division shall use these receipts as deduction of payment that will be represented on the Cost Proposal Sheet for this line item for this project.
C. **Measurement:** Measurement shall be made by salvage receipts amounts.

D. **Payment:** Deduction shall be entered as an amount for "**Salvage Material Reimbursement.**"

**VAULT**

A. **Description:** This work shall include all material, labor, and equipment necessary for the excavation and installation of a modified precast ODOT Manhole No. 3 per ODOT Standard Construction Drawing Number: MH-1.2 with specific frame and cover assembly as shown on the Drawing Plan Set. In addition, all fittings, joint seal, steps, connection of the vent pipes to the manhole, and aggregate base in the bottom of manhole shall be considered as incidental items to the completion of work detailed in this specification.

B. **Materials:**

1. **Vault:** The manhole shall be a modified ODOT approved Manhole No. 3 per ODOT Standard Construction Drawing Number: MH-1.2 of precast concrete modular construction as shown on the Drawing Plan Set. Materials shall conform to those referenced in 2016 ODOT CMS Item 611.02 and 706.13. The following is a link to the current ODOT precast concrete producers certified in accordance with specifications. [http://www.dot.state.oh.us/Divisions/ConstructionMgt/Materials/Pages/PrecastConcreteProducersCertified.aspx](http://www.dot.state.oh.us/Divisions/ConstructionMgt/Materials/Pages/PrecastConcreteProducersCertified.aspx)

2. **Frame and Cover:** Frame and cover shall meet all standards of ODOT Standard Construction Drawing Number: MH-1.2 and 2016 ODOT CMS Item 711.14. Frame and cover shall state “GAS WELL” on the cover.

3. **Joint Seal:** Joint seal for vent pipes shall be a resilient seal between the precast manhole sections and flexible gasket joints per 2016 ODOT CMS Item 706.11.

4. **Base:** The base material shall conform to granular material 2016 ODOT CMS Item 304 aggregate base.

C. **Installation:**

1. The manhole shall be installed as shown on the Drawing Plan Set. The trench for the vault shall be excavated to the elevations shown on the Construction Plan Set. **The Contractor shall excavate and maintain the sides of the trenches as required by OSHA. No person shall be permitted to enter the trench unless OSHA required standards are constructed for the trenches.** No additional payment shall be made for excavation of material beyond the depth and width as shown on the Construction Plan Set. Any dewatering required to keep the trench dry during construction shall be performed by the Contractor.

2. Clean surface of manhole pipe openings and exterior side of vent pipes of all foreign material. Place the vent pipes as detailed in the Drawing Plan Set. Install or have precast rubber gaskets on the manhole. Complete a watertight seal per ASTM C923 for all vent pipes with the rubber gasket.

3. Fill the base at grade with 2016 ODOT CMS Item 304 aggregate base in a level manner to the dimensions defined in the Drawing Plan Set. **This work and material shall be considered incidental to this line item.**
4. No backfilling shall be permitted without visual inspection and approval of the Division. The earth backfill for the vault shall be placed and compacted in lifts, using onsite equipment, that shall not exceed six (6) inches. The loose lifts shall be compacted to the satisfaction of the Division.

5. A minimum twelve (12) inches of topsoil shall be removed and stockpiled during construction. Topsoil shall be utilized at trench backfill completion and shall not be compacted. Trench settlement shall be corrected by the Contractor to maintain existing grade outside the trench.

D. **Measurement:** Measurement for payment shall be made by field inspection of quantities satisfactorily installed.

E. **Payment:** Payment for this work shall be made at the cost proposal unit price per each for "**Vault.**"

---

**VENT PIPE**

A. **Description.** This work shall include all material, labor, and equipment necessary for the excavation and installation of the catch basin sump as well as a two (2) inch galvanized steel vent pipe. In addition, all pipe fittings shall be considered as incidental items to the completion of work detailed in this specification. Work and materials associated with the catch basin sump shall be considered incidental to this line item.

B. **Materials (Vent Pipe):**

1. **Vent Pipe & Fittings:** All pipe and associated fittings shall be schedule 40 galvanized steel.

2. **Aggregate Bedding:** The aggregate bedding material shall conform to granular material 2016 ODOT CMS Item 304 aggregate base.

3. **Monitoring Plug:** Monitoring plug shall be made of brass and shall be ¾-inch in diameter.

4. **Insect and Rodent Vent Screen:** The screen shall be made of either stainless steel or galvanized steel.

C. **Materials (Catch Basin Sump):**

1. **Catch Basin Sump Box:** The 12” polypropylene catch basin sump box shall meet the manufacturer requirements of NDS, 851 N Harvard Avenue, Lindsay, CA 93247, ph. (888) 825-4716, [www.ndspro.com](http://www.ndspro.com) or approved equal. The basin shall be constructed in accordance to the details shown in the Drawing Plan Set and have an overall dimension of 12.75”x12.75”x14.5”.

2. **Catch Basin Riser:** The 12” polypropylene catch basin riser shall meet the manufacturer requirements of NDS, 851 N Harvard Avenue, Lindsay, CA 93247, ph. (888) 825-4716, [www.ndspro.com](http://www.ndspro.com) or approved equal. The basin riser shall be constructed in accordance to the details shown in the Drawing Plan Set and have an overall dimension of 12.375”x12.375”x7.125”.

3. **Catch Basin Sump Box Cover:** The 12” polypropylene sump box cover shall meet the
manufacturer requirements of NDS, 851 N Harvard Avenue, Lindsay, CA 93247, ph. (888) 825-4716, www.ndspro.com or approved equal. The sump box cover shall be constructed in accordance to the details shown in the Drawing Plan Set and have an overall dimension of 11.75”x11.75”x1.125”.

4. **Watertight Joints:** All joints including the lid, riser sections and between the basin and pipe shall be properly sealed using a 100% silicone sealant. All surfaces shall be cleaned and free of foreign debris prior to applying the sealant. A Division inspection shall be conducted prior to backfilling operations.

C. **Installation.** The catch basin sump and vent pipe shall be installed according to the details on the Drawing Plan Set. The basin, pipe and fittings shall be connected and installed in accordance with manufacturer's instructions.

The trench for the catch basin sump and vent pipe shall be excavated to the elevations shown on the Drawing Plan Set. **The Contractor shall excavate and maintain the sides of the trench as required by OSHA. No person shall be permitted to enter the trench as is designed on the Drawing Plan Set.** No additional payment shall be made for excavation of material beyond the depth and width as shown on the Drawing Plan Set.

No. 304 Aggregate Base shall be placed in accordance with the Drawing Plan Set. **This work and material shall be considered incidental to this line item.**

Any dewatering required to keep the trench dry during construction shall be performed by the Contractor.

No backfilling shall be permitted without visual inspection and approval of the Division. The earth backfill shall be placed and compacted in lifts, using onsite equipment, that shall not exceed six (6) inches. The loose lifts shall be compacted to the satisfaction of the Division.

All topsoil shall be removed and stockpiled during construction. Topsoil shall be utilized at trench backfill completion and shall not be compacted. Trench settlement shall be corrected by the Contractor to maintain existing grade outside the trench.

As an equal the contractor may choose to bore the vent pipe in place rather than trench the vent pipe in place. All dimensions and grades shall be maintained as planned if boring is chosen by the contractor. The Division shall be given written notice with boring locations supplied prior to the start of work. The Division will approve the boring locations. This work shall be completed within the approved work limits. Any additional costs associated with boring shall be incorporated into this line item “Vent Pipe.”

D. **Measurement.** Measurement for payment for the vent pipe shall be made by actual field measurements of quantities satisfactorily installed and completed per linear foot of vent pipe.

E. **Payment.** Payment for all the work specified above shall be made at the cost proposal unit price per linear foot for "Vent Pipe."

**SITE RESTORATION**

A. **Description:** This work shall cover all operations incidental to the establishment of grasses within the areas disturbed by the Contractor, including the furnishing and sowing of seed; and furnishing and applying of mulch materials, all in accordance with these specifications.
Additionally, this work shall include, but not be limited to, repair of grounds and vegetation, including landscaping amenities, ornamental shrubs and trees damaged in any manner during the work operations. All areas shall be properly graded to a smooth final grade with topsoil and blended into adjoining areas at the most moderate slope possible. Seedbed preparation through the use of scarifying equipment is also required. All site restoration work is to be completed within fourteen (14) days of the completion of the construction activities. The Contractor may request in writing to the Division an extension for site restoration. Requests shall only be granted based on season or weather conditions.

B. Materials: The materials to be used for restoration shall conform to the applicable requirements of these specifications.

1. Seed: The varieties of grass seed to be furnished to the project shall bear a tag on each bag of each species showing the lot number, grower's name, percent of purity, percent of germination, and weed content. Tags shall be provided to the Division.

   All seeds shall be free from noxious weeds and under no condition shall the total weed content of any lot of seed or seed mixture exceed one-half of one percent by weight.

   No seed shall be utilized which has a mix date older than one year. The Division reserves the right to test, reject, or approve all seed after delivery to the project.

2. Species Composition: Seed shall be applied to the project area at a rate of 10 lbs/1000 sq. ft. and shall conform to the following seed mixture ratio:

   98/85 Kentucky Bluegrass       50%
   Perennial Ryegrass         50%

   Other types of seed may be substituted if requested by the property owner(s). If such substitutions are made, they are to be made at no additional cost to the Division.

3. Mulching Material: All mulch material shall be free from mature seed bearing stalks or roots or prohibited or noxious weeds. Any type of hay is not acceptable. Mulch shall include baled wheat straw or oat straw. It shall be dry and reasonably free of weeds, stalks, or other foreign material.

4. Fertilizer: Fertilizer shall be commercial grade (19-19-19) and shall be applied at the rate of 20-lbs/1000 sq. ft.

C. Installation:

1. Start of Work: Site restoration work shall begin as soon as possible after the completion of construction. Final site restoration operations shall be completed within fourteen (14) working days of the final construction activities. The Contractor may request in writing to the Division an extension for site restoration. Requests shall only be granted based on season or weather conditions.

2. Area Preparation of Soil: Spread and grade available topsoil uniformly over all disturbed areas. All areas to be seeded shall be loosened by discing, harrowing, or other approved methods immediately prior to seeding. The soil shall be loosened to a depth of approximately
three inches.

Following tilling of the soil, the seedbed shall be allowed to firm up.

Final prepared surface shall have a smooth final grade and be appropriate for a residential yard.

Immediately following area preparation for seeding, seed shall be sown. Seed shall be sown by approved methods that provide for uniform distribution of the seed mix as specified above.

After broadcasting or otherwise applying the seed, the surface of the seedbed shall be raked.

3. **Mulching:** Apply the equivalent of 100 pounds per 1,000 square feet of clean straw mulch.

4. **Applying and Anchoring Mulch:** Apply mulch to the sown area within 24 hours of seeding at the rate per square feet as specified above and spread to a uniform depth.

The straw shall be placed in a moist condition or shall be sprinkled immediately after placement.

5. **Maintenance and Repairs:** The Contractor shall, during construction and prior to acceptance, properly care for all areas mulched and perform all mulching operations necessary to provide protection and establish growth of the seeded areas. Mulch that becomes displaced shall be reapplied at once, together with any necessary reseeding, all at no expense to the Division.

D. **Trees, Shrubs, and Plants:** Shrubbery, trees and plants damaged or removed by the work shall be replaced with like species of a sapling size. All disturbed/removed mulch shall be replaced with new mulch of the same characteristics and color.

E. **Structures and Landscape Amenities, Repair and Replacement:** This work shall cover all operations incidental to the repair and/or replacement of any and/or all landscape amenities above, in, and/or below ground within the limits of construction, including all other areas disturbed by the Contractor. This description includes all paved or poured structures, such as sidewalks, curbs or concrete roadways, etc. All work and materials shall be verified with the Division prior to any work. Any damage caused due to contractor negligence shall be paid for by the Contractor at his/her expense.

F. **Measurement:** Measurement for payment of site restoration, which includes seedbed preparation, seeding, mulching, fertilizing, and replacement of shrubs, trees and landscape amenities shall be considered and measured as a unit satisfactorily completed and accepted by the Division.

G. **Payment:** Payment for this work, which includes seedbed preparation, seeding, mulching, fertilizing, required replacement of all shrubs, trees and landscaping amenities, etc., and general cleanup shall be made at the cost proposal lump sum price for "Site Restoration."

**NO. 57 STONE**

A. **Description:** This work covers the quality, material placement and requirements as a top course stone for the project access as shown in the Drawing Plan Set. This material shall be placed within the current limits of the landowner’s drive.
B. **Materials:** The materials shall consist of sound and durable rock, gravel or stone of the proper gradation meeting ODOT specifications. The material shall be free from cracks, seams, and other defects, which tend to increase deterioration from natural causes. It shall be highly resistant to weathering and disintegration under freezing and thawing and wetting and drying as evidenced by laboratory tests and/or service records. The Division at any time during the project may reject any materials, at the source or job site, not meeting the requirements of these specifications.

Acceptability of material will be determined by laboratory tests, visual inspection and/or service records as required by the Division. Service records will include documentation to show the material has performed satisfactory on similar structures.

C. **Installation:** Upon delivery of the material to the site the Contractor shall install the material in place as shown on the Drawing Plan Set.

D. **Measurement:** The material shall be measured for payment by the ton (2,000 pounds) for material acceptably placed in the work as determined by certified scale weight tickets.

All material wasted or used by the Contractor for other purposes and any material not placed in the work in accordance with the requirements of the work order and these specifications and drawings shall be measured and not included for payment by weight. A conversion factor of 1.5 ton per cubic yard of No. 57 Stone shall be used if necessary.

E. **Payment:** Payment this work as specified above shall be made based on the cost proposal unit price per ton for "No. 57 Stone."

**DEMOBILIZATION**

A. **Description:** This work shall consist of the demobilization of all personnel, plugging related equipment and materials as well as the cleanup of all areas upon completing all other work required under the scope of work for the well site.

B. **Execution:** Any damage to the road, drives, and/or culverts caused by the demobilization shall be repaired by the Contractor at the Contractor’s expense. All repairs shall be done equal to or better to that which existed prior to construction activities.

C. **Measurement:** Measurement for payment will be considered and measured as a unit satisfactorily completed and accepted by the Division.

D. **Payment:** The cost of this work shall be included in the cost proposal lump sum price for "Demobilization."

**CONTINGENCY SPECIFICATIONS**

CONTINGENCY SPECIFICATIONS WILL ONLY BE DIRECTED VIA A FIELD ORDER FROM THE DIVISION. THE FIELD ORDER WILL DEFINE THE QUANTITY APPROVED. CONTINGENCY SPECIFICATION USE WILL BE DETERMINED BASED ON SITE CONDITIONS THAT ARE DETERMINED BY THE DIVISION.
ALTERNATIVE WELL CONTROL FLUID

A. Description: The work covered by this section shall consist of furnishing all labor, equipment, and material necessary to provide and use a bentonite clay gel or a weighted brine as a “kill” fluid for the drilling and plugging process of the well.

B. Materials: Based on the onsite conditions the Contractor shall propose a brine or gel for approval from the Division. Once a material is approved the Division will require a minimum quantity be maintained at the site during the plugging project.

C. Measurement: Measurement for payment for the above-described work shall be made by the actual quantity of barrels (bbls) of kill fluid used to successfully plug and/or drill the orphan well. The Division will at a minimum pay for the quantity required to be maintained on site.

D. Payment: Payment for the above work shall be made at the cost proposal unit price per barrel (bbls) for "Alternative Well Control Fluid".

DOWNHOLE VIDEOGRAPHY

A. Description: This work consists of all labor, equipment, and material necessary to video record the well bore in order to assess a well bore obstruction.

B. Execution: The Contractor shall supply all equipment needed and complete the videography recording of the well bore to the depth of the current obstruction. The Contractor shall supply the Division with an electronic copy of the videography recorded in a format viewable in readily available current software.

C. Measurement: Measurement for payment shall be made by the delivery of an acceptable video and photos to the Division of the current obstruction. Measurement shall be per obstruction, not per video or photo.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the video recording of the current obstruction made at the cost proposal per unit price per each for "Downhole Videography".

FISHING

A. Description: This work consists of all labor, equipment, and material necessary to remove and/or clear the well bore as needed in order to reach total depth by the means of fishing the obstruction in the well bore.

B. Execution: The Contractor shall supply the equipment needed to complete the fishing in an efficient manner that will be approved by the Division. This shall include but not be limited to the rig, impression blocks, and associated equipment. This shall not include the fishing tools required to complete this work. The Division will develop a negotiated change order to deliver and use the appropriate fishing tools required based on the unforeseen conditions. Appropriate fishing tools shall be provided for the circumstances encountered.

C. Measurement: Measurement for payment shall be made by field inspection of the actual quantity of
hours in which the drilling rig and other fishing equipment were diligently operating in a manner to remove the obstruction.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the obstruction removal shall be made at the cost proposal per unit price per hour for "Fishing".

**MILLING**

A. Description: This work consists of all labor, equipment, and material necessary to remove and/or clear the well bore as needed in order to reach total depth by the means of milling the well bore.

B. Execution: The Contractor shall supply the equipment needed to complete the milling in an efficient manner that will be approved by the Division. This shall include but not be limited to the rig, swivel, mud pump, and associated equipment. **This shall not include the milling bits required to complete this work. The Division will develop a negotiated change order to deliver and use the appropriate milling bits required based on the unforeseen conditions.** Appropriate milling bits shall be provided for the circumstances encountered. Milling bits shall be factory made unless approved otherwise in writing by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of the actual quantity of hours in which the drilling rig and other milling equipment were diligently operating in a manner to remove the obstruction.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the obstruction removal shall be made at the cost proposal per unit price per hour for "Milling".

**SHOOTING**

A. Description: This work consists of all labor, equipment, and material necessary to sever/shoot a casing or tubing at a determined depth for the purpose of removing the casing or tubing string by the means of shooting.

B. Execution: The Contractor shall complete the shooting of the casing or tubing at a depth approved by the Division. The Contractor shall propose the material for shooting of the casing or tubing and shall be approved by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the shooting the casing or tubing made at the cost proposal per unit price per each for "Shooting".

**CUTTING**

A. Description: This work consists of all labor, equipment, and material necessary to sever/cut a
casing or tubing at a determined depth for the purpose of removing the casing or tubing string by the means of cutting.

B. Execution: The Contractor shall complete the cutting of the casing or tubing at a depth approved by the Division. The Contractor shall propose the method for cutting of the casing or tubing and shall be approved by the Division.

C. Measurement: Measurement for payment shall be made by field inspection of units satisfactorily completed and accepted by the Division.

D. Payment: Payment for the above described work, which includes all labor, materials, equipment necessary for the cutting of the casing or tubing made at the cost proposal per unit price per each for "Cutting".

LOST CIRCULATION MATERIALS

A. Description: This work shall include furnishing all labor, materials, equipment, and supplies necessary to expose portions of the well bore to lost circulation materials (LCM) as determined necessary. Lost circulation materials shall be implemented to aid in obtaining well bore circulation prior to any cementing operations.

B. Materials: Lost circulation materials shall be selected by the Contractor based on site conditions encountered and proposed to the Division for approval.

C. Measurement: Measurement for payment shall be based on the actual quantity of sacks of lost circulation materials satisfactorily placed and shall be verified with delivery tickets. For estimating purposes it has been assumed that one (1) sack is equal to fifty (50) pounds.

D. Payment: Payment for all the above-described work shall be made at the cost proposal unit price per sack for "Lost Circulation Materials".

PORTAGE #1
APPENDIX I – OHIO ONE-CALL

THE FOLLOWING ARE REPORTABLE INCIDENTS:

<table>
<thead>
<tr>
<th>TYPE OF INCIDENT</th>
<th>QUANTITY (GAL, BBL, PPM)</th>
<th>ADDITIONAL FACTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas Release</td>
<td>N/A</td>
<td>Blow out</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Uncontrolled Pop-off Valve (Urban Area)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Any threat to public safety</td>
</tr>
<tr>
<td>Hydrogen Sulfide (H₂S)</td>
<td>20 ppm ; &gt; 10 min in working area</td>
<td>OR H₂S release resulting in injury or death of person</td>
</tr>
<tr>
<td>Fire / Explosion</td>
<td>N/A</td>
<td>Emergency responder has been called by reporting person</td>
</tr>
<tr>
<td>Oil, Condensate or Materials Saturated with Oil or Condensate</td>
<td>&gt; 210 US gallons in 24 hours</td>
<td>Outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td>Oil, Condensate or Materials Saturated with Oil or Condensate</td>
<td>&gt; 25 US gallons in 24 hours</td>
<td>In an urban area AND outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In an Emergency Management Zone of a surface water public drinking supply AND outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In a 5-year time of travel with a groundwater-based public drinking supply AND outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td></td>
<td></td>
<td>In a 100-year flood hazard area as delineated on the federal emergency management agency’s (FEMA) national flood insurance rate map AND outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td>Refined Oil Products</td>
<td>&gt; 25 US gallons in 24 hours</td>
<td>Outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td>Any Oil, Condensate or Materials Saturated with Oil or Condensate / Oil (refined)</td>
<td>N/A</td>
<td>Causing film or sheen on water surface</td>
</tr>
<tr>
<td>Brine / Semi-solid Wastes (sludge / drill cuttings)</td>
<td>&gt; 42 US gallons in 24 hours</td>
<td>Outside secondary containment &amp; into the environment</td>
</tr>
<tr>
<td>Brine (from vehicle, vessel, railcar or container)</td>
<td>&gt; 42 US gallons</td>
<td>Operated by person to whom a registration certificate has been issued</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Enters the environment and the release is an amount that exceeds 42 US gallons</td>
</tr>
<tr>
<td>Hazardous Substance (HS) or Extremely Hazardous Substance (EHS) or Mixture</td>
<td>Equal to or &gt; than reportable quantities in tables in 40 CFR</td>
<td>List available at: <a href="http://oilandgas.ohiodnr.gov/well-information/emergency-response">http://oilandgas.ohiodnr.gov/well-information/emergency-response</a></td>
</tr>
<tr>
<td></td>
<td>Unknown amount</td>
<td>Notify where total amount of the mixture or solution release equals or exceeds the reportable quantity</td>
</tr>
</tbody>
</table>
### THE FOLLOWING ARE NOT REPORTABLE INCIDENTS:

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Controlled flaring or controlled burns authorized under Chapter 1509. of the Revised</td>
</tr>
<tr>
<td></td>
<td>Code or under 1501:9 of the Administrative Code or authorized by the terms and</td>
</tr>
<tr>
<td></td>
<td>conditions of a permit issued under Chapter 1509. of the Revised Code;</td>
</tr>
<tr>
<td>2.</td>
<td>Properly functioning emission control devices authorized pursuant to Revised Code</td>
</tr>
<tr>
<td></td>
<td>Section 3704.03;</td>
</tr>
<tr>
<td>3.</td>
<td>Subsurface detonation of perforation-guns;</td>
</tr>
<tr>
<td>4.</td>
<td>Seismic shots; OR</td>
</tr>
<tr>
<td>5.</td>
<td>Controlled blasting for well site construction</td>
</tr>
</tbody>
</table>
SCOPE OF WORK
PORTAGE #1 PROJECT
Multiple Orphan Well Sites
Portage County, Franklin, Ravenna, & Streetsboro Townships

APPENDIX II – WELL RECORDS

EVERS & NOWAK #1
API: 34-133-2-0414-00-00
EVERS & NOWAK #1
API: 34-133-2-0414-00-00
WELL CARD

Ohio Division Of Geological Survey

County: Ashland
Section: 16
Township: Janesville
Range: 4

Permit No: 20414
Permit Board: 1/1/05

Measure: 1,105' SE ¼ NW ¼ NE ¼ Sec. 10

Land Owner: Evers & Nowak
Well No: 1
Date Completed: 1/25/05

Operator: J. S. Collins
Well No: 2414
Date Completed: 1/25/05

Formation: 10-1/2in. thick from 300' to 280' from 575' to 570' from 570' to 575'
Prod. Form: 280' from 575' to 570'
Prod. Nat: 280' from 575' to 570'

Formation
Top
Return
Remarks
Drift 0 280
Shale, grey 280 310 .Wtr. @ 23'
Sand, str 310 3110
Shale, barm 3110 3130
Shale, grey 3130 3200
 Lime 3200 4000
Shale 4000 4090
L. Clay 4090 4280

Shale 4280 4320
P.S. 4320 4325
Shale 4325 4350
Shale 4350 4386
Shale 4386 4500
Shale 4500 4599

Formation
Top
Return
Remarks

E = 2,135,850
N = 503,175

COMPLETION

Drift 0 280 .Wtr. @ 23'
Shale, grey 280 310
Sand, str 310 3110
Shale, barm 3110 3130
Shale, grey 3130 3200
 Lime 3200 4000
Shale 4000 4090
L. Clay 4090 4280

Shale 4280 4320
P.S. 4320 4325
Shale 4325 4350
Shale 4350 4386
Shale 4386 4500
Shale 4500 4599
T.B.
## WELL RECORD

**Type of well:** Dry, gas, oil, combination oil and gas, brine or artificial brine well.

**Company:** W.O. Collins & Carter-Jones Lumber Co.

**Address:** 304 South River Rd., Salem, Ohio

<table>
<thead>
<tr>
<th>Well</th>
<th>Elev.</th>
<th>Access</th>
<th>Depth</th>
<th>Packer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portage #1</td>
<td>150</td>
<td>4080</td>
<td>3654.5</td>
<td>16</td>
</tr>
</tbody>
</table>

**Drilling:**
- **Commutation:** 10-5-66
- **Completed:** 12-17-66

**Water:**
- **Open Flow:** 1000 Water

**Volume:** 600,000 bbls.

**Production:**
- **Oil:** 2400 bbls.
- **Water:** 2400 bbls.

**Dates:**
- **Casing Completed:** 12-17-66
- **Casing Installed:** 4-1/2

### WELL FORMATION DATA

<table>
<thead>
<tr>
<th>Formation</th>
<th>Color</th>
<th>Hard or Soft</th>
<th>Top</th>
<th>Bottom</th>
<th>Oil, Gas or Water</th>
<th>Depth Below</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drape</td>
<td>2</td>
<td>293</td>
<td>293</td>
<td>286</td>
<td>No water</td>
<td>260</td>
<td></td>
</tr>
<tr>
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**Total Depth:** 4959 feet

**Note:** No water found.
HODGEMAN #1
API: 34-133-2-0441-00-00
### HODGEMAN #1
#### API: 34-133-2-0441-00-00
#### WELL CARD

- **County:** Portage
- **Township:** Franklin
- **Section:** 17
- **Twp:** 59/70
- **Lot:** 17
- **100-acre unit:** 30-134
- **Land Owner:** Hodgeman
- **Operator:** J. D. Collins Oil & Gas & Carter-Jones
- **Well No. J:** 1
- **Date Completed:** 9-7-46
- **Date Completed:** 11-19-66
- **Total Depth:** 4230
- **Pool Form:** Puddled Rock
- **F.P. 1500 FT:** 130-130
- **Init. Rock Form:** Bedded, 4800 ft. 18 holes, 4100 ft. 3-
  8/°
- **Casing Record:** 10-3/4"-8/°, 8-5/8"-270', 7-7/8'-2089', 4-4/8'-4230 ft. 60 ft. 12-
  23, 76

<table>
<thead>
<tr>
<th>Formation</th>
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<tr>
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<td>2,325,760</td>
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<td>Y= 240,120</td>
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<td>89</td>
<td>Salt, wht</td>
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<td>HPW @ 3710'</td>
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<td>BSR    7×13-67</td>
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<td>2/8 1'60 NW, 36M 5d.</td>
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<td>A.F. 410MCFG, open 2½ hrs.</td>
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<tr>
<td>R.P. 1350/17 hrs.</td>
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HODGEMAN #1
API: 34-133-2-0441-00-00
WELL RECORDS

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
812 OHIO DEPARTMENTS BUILDING
COLUMBUS, OHIO 43215

WELL COMPLETION RECORD
(Required by Section 360.7 of Ohio Revised Code)

DESCRIPTIVE
H. D. Collings
ADDRESS: 304 Phillips Building, Tulsa, Oklahoma 74103

DATE ISSUED: 10/17/55
API: 34-133-2-0441-00-00
WELL RECORDS

PORTAGE #1
61/70

DATE: 10/17/55
API: 34-133-2-0441-00-00
WELL RECORDS

PORTAGE #1
61/70

Completion Date: 9-7-56
Completion: 11-19-56
Total Depth: 4230'

Drilled 1200' in water, 32,000' sand.
Prepared 2,000' to 15,000' 10 holes, 4300-5100'-3/8'

Additional Data:

Date of Completion: Hurley, Morgan, Stephens Co. - Wooster, Ohio
Types of Electrical and/or Radioactivity Logs Made: Formation density, Induction Gamma Ray
Name of Logging Company: Schumacher Well Services

Complete and Accurate Log of Rocks Penetrated

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<th>Formation Content</th>
<th>Remarks</th>
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<td>Fresh Water 100'</td>
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<td>275</td>
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<td>Soft</td>
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<td>Heavy Sand</td>
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<td>White, Hard</td>
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<td>1270</td>
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<td>Soft</td>
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<td>Soft</td>
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(Over for Signature)
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</tbody>
</table>

(ATTACH EXTRA SHEETS IF NEEDED)

I (we) certify that the above information is true and correct, to the best of my knowledge.

Signature: ____________________________
Typed or Printed: ___________________
Signed: ____________________________

Dates: 6-30-57
Representing: ________________________
## DUNLAP #2

**API:** 34-133-2-1272-00-00

### WELL CARD

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<tr>
<td>Big Lime</td>
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<td>2953</td>
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<tr>
<td>Selina group</td>
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<tr>
<td>Lockport group</td>
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<td>3944</td>
<td>SW</td>
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<tr>
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<td>4084</td>
<td>dry</td>
</tr>
<tr>
<td>Clinton treated</td>
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<td>4139</td>
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<tr>
<td>Miscellaneous</td>
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<td>4168</td>
<td>98.6% B</td>
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**Frac:** 2,322,050

**Yr:** 584,450

**Clinton white**

**Cobalt head**

**Design:** 4,106 ft, 60 ft sand, 17 ft 4104-4147

**Lp:** A.P. 1000MEG & 560

**Coding Record:** 8 5/32" 405' 2755ks, 4 4086' 150ks

**Abandoned:** 9-22-89

**Frac:** 2,322,050

**Yr:** 584,450

**Clinton white**

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**Design:** 4,106 ft, 60 ft sand, 17 ft 4104-4147

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**Coding Record:** 8 5/32" 405' 2755ks, 4 4086' 150ks

**Abandoned:** 9-22-89
DUNLAP #2
API: 34-133-2-1272-00-00
WELL RECORDS

STATE OF OHIO
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
FOUNTAIN SQUARE, BLDG. B
COLUMBUS, OHIO 43215

WELL COMPLETION RECORD
(Completed within 30 days after completion of well under Section 1093.10 of Ohio Revised Code)

OPERATOR: PDI Energy Inc.
ADDRESS: 222 E 79th Street
Cleveland, Ohio 44109

PERMIT NUMBER: 1272
LEASE: DUNLAP
COUNTY: Portage
CIVIL TOWNSHIP: East Twp
SECTION: 17
QUARTER TOWNSHIP: S
SURVEY: Y
LOT: 19
CITY LOT: 19
HOE 40' 4" FROM LOT 19

ELEVATION: 497' O.D.
DATE COMPLETED: Dec. 6, 1977
DATE COMPLETED: Dec. 6, 1977
TOTAL DEPTH: 4970' (3)111
PRODUCING FORMATION: Clinton
DEEP FORMATION: Small
TYPE OF COMPLETION: Open Hole

PERFORATED INTERVAL & NO. OF SHOTS/FT:

RECORD OF SHOT, ACID OR FRACTURE TREATMENTS, PRODUCTION TESTS, PRESURES, ETC.
Fractured by Halliburton (11/21/77) with 1/20,000 gals water and 16 Gpd's sand

AMOUNT OF INITIAL PRODUCTION:
WATER: 0 CUBIC FT
GAS: 0 CUBIC FT
OIL: 0 BBL
UE: 0 BBL

ADDITIONAL DATA:
NAME OF CONTRACTOR:
NAME OF WELL COMPANY:

CAISNS AND TUBING RECORD:

FT FEET USED IN DRILLING AMOUNT OF CEMENT FEET LEFT IN WELL COMMENTS
8 5/8" 950 855 yards 95 855 Halliburton (11/29/77)
12" 2298 150 yards 2298 Halliburton (11/7/77)

NAME OF CONTRACTOR:
Pop Drilling Co.
NAME OF WELL COMPANY:
Eastern Well Surveys

COMPLETE AND ACCURATE LOG OF ROCKS PENETRATED

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<th>TOP</th>
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<th>NAME OF FORMATION</th>
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SIGNED FOR SIGNATURE:

PORTAGE #1 66/70
### WELL RECORDS

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<th>Type of rock</th>
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<th>Reservoir</th>
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<td><strong>Z.B.</strong></td>
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<td><strong>Leggy</strong></td>
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</tbody>
</table>

**RECORD OF DISPOSAL OF WASTE & OTHER WASTE INCLUDING LIQUIDS USED IN FRACTURE TREATMENT**

Solar evaporation from earth pits when weather permits. Any produced salt water to be hauled to the Portage #1 disposal wells.

(permits: Portage #207)

---

**ATTACH EXTRA SHEETS IF NEEDED**

I (We) certify that the above information is true and correct, to the best of my knowledge.

**Signature:** ______________________________________________________________________

**Typed or Printed:** George Kortza

**Representing:** POT Energy, Inc.

**Date:** 6/30/78
DUNLAP #2 PLUGGING RECORDS

OHIO DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL AND GAS
ATTN: FIELD ENFORCEMENT SECTION
FOUNTAIN SQUARE
COLUMBUS, OHIO 43224
FORM 55: REVISED 12-10-80

API WELL NUMBER

3 4 1 5 2 2 2

Permit No.

PLUGGING REPORT

OWNER: Energy Inc. TELEPHONE NUMBER 216-364-3072

ADDRESS: 2301 Progress St. Doug, OH 44622 ZIP CODE 44622

Well Number: 2 Lease Name: DUNLAP

Type of Well: Gas Oil Dry Plug Back Other

County: PORTAGE Civil Township: "A" Section/Lot: 17

Date of Permit to Drill: 10/24/84 Date When Drilled: 11/14

Date of Permit to Plug: 9-29-88/9-29-89 Contractor: Alwood Service Rig

Notification received: Yes ☑ No ☐

FORMATIONS TOP BOTTOM FORMATIONS TOP BOTTOM

Creston Shale Casing Shell
Packer Shell
Stray Clinton
Red Shell
White Shell

Coff Run Sand
Maxxon Sand
Miner Sand
Big Injun Sand
Berea Sand
Ohio Shale
Cinnamon
Gordon Sand
Clemwood Shale
Rose Run
Trempealeau Dolomite

TOTAL DEPTH

876 2953

CLAY OR CEMENT TICKET ATTACHED ☑ YES NO

REMARKS: 1st plug set @ 4100' - 3900' w/ 250# 9% sand w/ cellulose. 2nd plug set @ 2440' - 2240' w/ 450# cement.
3rd plug set @ 2376' - 2176' w/ 60# cement. 4th plug set @ 450' - 300'
Pulled pipe tapped off w/ 5#s. Used gel spacers between plugs.

To be used when well is plugged without an Inspector present and by written permission of the Chief, Division of Mines or the Chief, Division of Oil and Gas. Present when plugged:

I, the undersigned, hereby certify that the information contained in this report is true and correct.

Signature

Acknowledged before me at this day of 19

Acknowledging Officer

DUNLAP #2 PLUGGING RECORDS

API WELL NUMBER

3 4 1 5 2 2 2

Permit No.

PLUGGING REPORT

OWNER: Energy Inc. TELEPHONE NUMBER 216-364-3072

ADDRESS: 2301 Progress St. Doug, OH 44622 ZIP CODE 44622

Well Number: 2 Lease Name: DUNLAP

Type of Well: Gas Oil Dry Plug Back Other

County: PORTAGE Civil Township: "A" Section/Lot: 17

Date of Permit to Drill: 10/24/84 Date When Drilled: 11/14

Date of Permit to Plug: 9-29-88/9-29-89 Contractor: Alwood Service Rig

Notification received: Yes ☑ No ☐

FORMATIONS TOP BOTTOM FORMATIONS TOP BOTTOM

Creston Shale Casing Shell
Packer Shell
Stray Clinton
Red Shell
White Shell

Coff Run Sand
Maxxon Sand
Miner Sand
Big Injun Sand
Berea Sand
Ohio Shale
Cinnamon
Gordon Sand
Clemwood Shale
Rose Run
Trempealeau Dolomite

TOTAL DEPTH

876 2953

CLAY OR CEMENT TICKET ATTACHED ☑ YES NO

REMARKS: 1st plug set @ 4100' - 3900' w/ 250# 9% sand w/ cellulose. 2nd plug set @ 2440' - 2240' w/ 450# cement.
3rd plug set @ 2376' - 2176' w/ 60# cement. 4th plug set @ 450' - 300'
Pulled pipe tapped off w/ 5#s. Used gel spacers between plugs.

To be used when well is plugged without an Inspector present and by written permission of the Chief, Division of Mines or the Chief, Division of Oil and Gas. Present when plugged:

I, the undersigned, hereby certify that the information contained in this report is true and correct.

Signature

Acknowledged before me at this day of 19

Acknowledging Officer

Scope of Work  
Cost Proposal Sheet  
Portage #1 Project  
Portage County, Franklin, Ravenna, & Streetsboro Townships  
Well Name: Hodgeman #1, Evers & Nowak #1, Dunlap #2  
Permit Number: 34-133-2-0441-00-00, 34-133-2-0414-00-00, 34-133-2-1272-00-00  
TD = 4230’ - 4259’ - Clinton  

<table>
<thead>
<tr>
<th>Line Number</th>
<th>Description</th>
<th>Unit Price</th>
<th>Quantity</th>
<th>Unit</th>
<th>Item Total</th>
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<tbody>
<tr>
<td>1</td>
<td>Mobilization</td>
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<td>Lump Sum</td>
<td>$</td>
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<td>3</td>
<td>Secondary Containment</td>
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<td>4</td>
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<td>430</td>
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<td>5</td>
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<td>1547</td>
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<tr>
<td>6</td>
<td>Surface Casing, 7”</td>
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<td>375</td>
<td>Linear Ft</td>
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<td>7</td>
<td>Well Head Control</td>
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<td>8</td>
<td>Well Control Fluid</td>
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<td>9</td>
<td>Well Preparation &amp; Plugging (Evers &amp; Nowak #1)</td>
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<td>Well Preparation &amp; Plugging (Hodgeman #1)</td>
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<td>11</td>
<td>Well Preparation &amp; Plugging (Dunlap #2)</td>
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<tr>
<td>12</td>
<td>Tubing / Drill Pipe</td>
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<td>13</td>
<td>Class “A” Cement</td>
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<td>1355</td>
<td>Sack</td>
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<tr>
<td>14</td>
<td>Cement Mixing &amp; Pumping</td>
<td></td>
<td>7</td>
<td>Each</td>
<td>$</td>
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<td>15</td>
<td>Fluid Disposal</td>
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<td>250</td>
<td>BBL</td>
<td>$</td>
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UIC#: ________________________________  

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<tbody>
<tr>
<td>16</td>
<td>Contaminated Material Disposal</td>
<td>30</td>
<td>Ton</td>
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Disposal Facility: ________________________________  

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<th>Unit</th>
<th>Item Total</th>
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<tr>
<td>17</td>
<td>Salvage Material Disposal</td>
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<tr>
<td>18</td>
<td>Salvage Material Reimbursement</td>
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<td></td>
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<td>19</td>
<td>Vault</td>
<td>1</td>
<td>Each</td>
<td>$</td>
<td></td>
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<tr>
<td>20</td>
<td>Vent Pipe</td>
<td>120</td>
<td>Linear Ft</td>
<td>$</td>
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<tr>
<td>21</td>
<td>Site Restoration (Hodgeman #1)</td>
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<td>$</td>
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<td>22</td>
<td>Site Restoration (Evers &amp; Nowak #1)</td>
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<td>$</td>
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<td>Site Restoration (Dunlap #2)</td>
<td>1</td>
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<td>$</td>
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<tr>
<td>24</td>
<td>No. 57 Stone</td>
<td>20</td>
<td>Ton</td>
<td>$</td>
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<td>25</td>
<td>Demobilization</td>
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Total Encumbrance: $ -  

**Additional/Contingency Services**  

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<th>Description</th>
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<tr>
<td>28</td>
<td>Road Mats</td>
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<td>Mat/Day</td>
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<td>29</td>
<td>Alternative Well Control Fluid</td>
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<td>BBL</td>
<td>$</td>
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<tr>
<td>30</td>
<td>Downhole Videography</td>
<td>2</td>
<td>Each</td>
<td>$</td>
<td></td>
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<tr>
<td>31</td>
<td>Fishing</td>
<td>20</td>
<td>Hour</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>32</td>
<td>Milling</td>
<td>28</td>
<td>Hour</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>33</td>
<td>Shooting</td>
<td>2</td>
<td>Each</td>
<td>$</td>
<td></td>
</tr>
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<td>34</td>
<td>Cutting</td>
<td>2</td>
<td>Each</td>
<td>$</td>
<td></td>
</tr>
<tr>
<td>35</td>
<td>Lost Circulation Materials</td>
<td>25</td>
<td>Sack</td>
<td>$</td>
<td></td>
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</table>

Total Contingency: $ -
Note: Contractor shall complete the unit price and quantity for each cost proposal item listed above. The item total shall be the unit price multiplied by the quantity. Contractors shall complete all items in the above cost proposal; failure to do so may be cause for rejection of the cost proposal. Cost proposal quantities are only an estimate. Payment shall be based on quantities satisfactorily completed.

The undersigned, having inspected the scope of work, hereby proposes to furnish all labor, equipment, materials, tools, and transportation necessary to perform the proposed work in accordance with the listed prices.

Cost Proposals shall be sealed & returned to the Department of Natural Resources, Division of Oil & Gas Resources Management, Attention: Steve Irwin, 2045 Morse Rd, Building F-3, Columbus, OH 43229, until 11:30 am on March 20, 2018.
**PORTAGE #1**

**ORPHAN WELL SITES**

<table>
<thead>
<tr>
<th>WELL NAME</th>
<th>API NUMBER</th>
<th>TOWNSHIP</th>
<th>LATITUDE</th>
<th>LONGITUDE</th>
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<tr>
<td>EVERS &amp; NOWAK #1</td>
<td>34-133-2-0414-00-00</td>
<td>RAVENNA</td>
<td>41.146475°</td>
<td>-81.280459°</td>
</tr>
<tr>
<td>HODGEMAN #1</td>
<td>34-133-2-0441-00-00</td>
<td>FRANKLIN</td>
<td>41.143286°</td>
<td>-81.317931°</td>
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<tr>
<td>DUNLAP #2</td>
<td>34-133-2-1272-00-00</td>
<td>STREETSBORO</td>
<td>41.264626°</td>
<td>-81.328609°</td>
</tr>
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**LEGEND**

- **EXISTING BURIED ELECTRIC**
- **EXISTING CULVERT**
- **EXISTING ORPHAN WELL**
- **EXISTING POWER POLE**
- **EXISTING HYDRANT**
- **EXISTING WATER VALVE**
- **EXISTING TREE**
- **EXISTING SHRUB**
- **EXISTING MAILBOX**
- **EXISTING CURB INLET**
- **EXISTING ELECTRIC METER**
- **EXISTING UTILITY POLE**
- **EXISTING IRON PIN FOUND**
- **EXISTING SANITARY MANHOLE**
- **EXISTING VAULT**
- **EXISTING TOP OF BANK**
- **EXISTING TOE OF SLOPE**
- **EXISTING 1' CONTOUR**
- **EXISTING 5' CONTOUR**

**Contact Information**

**Program Manager**
- GENE CHINI
  - Ph: (330) 284-2942

**Orphan Well Inspector**
- KEVIN PERRY
  - Ph: (330) 601-3931

**Project Engineer**
- JASON A. SIMMERMAN, P.E.
  - Ph: (330) 620-5642

**Ohio Department of Natural Resources**

**Division of Oil & Gas Resources Management**

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**Ports & Well Protection**

- **OHIO SERVICE**
  - Call Before You Dig
  - 1-800-362-2764

**Utilities Protection**

- **OHIO SERVICE**
  - 1-800-925-0988

**Location Map**

**Scale:** 1" = 5 MILES
DANN'S WAY
EXISTING LANDSCAPE BED
EXISTING IRON PIN FOUND
EXISTING GOAL POST TO BE REMOVED
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CWL
CONCRETE DRIVE
PROPOSED COMPOSITE MATTING (17 MATS) PER LINE ITEM "ROAD MATS"
EXISTING LANDSCAPE BED
EXISTING HOUSE/GARAGE SEE NOTE 5, THIS SHEET
PROPOSED WORK LIMITS (TYP) 75' 90' 15'
EXISTING LANDSCAPE BED
PROPOSED 2" DIA. GALVANIZED VENT PIPE (±120 LF) SEE DETAIL, SHEET 5
PROPOSED CATCH BASIN SUMP SEE DETAIL, SHEET 5
N= 584448.48, E= 2290615.65 LAT= 41.264923°, LONG= -81.328253°
PROPOSED VENT PIPE OUTLET SEE DETAIL, SHEET 5 N= 584448.40, E= 2290519.69 LAT= 41.264922°, LONG= -81.328216°
PROPOSED INGRESS/EGRESS POINT N= 584449.40, E= 2290383.59, EL= 1170.79 LAT= 41.264934°, LONG= -81.329097°
DUNLAP #2 (SMOLIK) ORPHAN WELL TO BE PLUGGED PER THE "PLUGGING PLAN" API No. 34-133-2-1272-00-00 N= 584448.50, E= 2290517.69, EL= 1174.20 LAT= 41.264926°, LONG= -81.328609°
PROPOSED VAULT LOCATION SEE DETAIL SHEET 5 TC=1174.20, INV. ELEV.=1171.87 N= 584448.49, E= 2290516.94, LAT= 41.264926°, LONG= -81.328253°
EXISTING FIRE RING TO BE REMOVED AND RESET
EXISTING UNDERGROUND FENCE EXACT LOCATION UNKNOWN SEE NOTE THIS SHEET
EXISTING VENT PIPE, ±20' TO BE REMOVED TO COMPLETE THE PROPOSED WORK SEE NOTE THIS SHEET
DUNLAP #2 (SMOLIK) ORPHAN WELL SITES SITE PLAN PORTAGE #1 ORPHAN WELL SITES
http://oilandgas.ohiodnr.gov DIVISION OF OIL & GAS RESOURCES MANAGEMENT IDLE & ORPHAN WELL PROGRAM
NOTES:
1) THE HORIZONTAL DATUM IS BASED ON NAD83 (2011) OHIO STATE PLANE NORTH 3401, AND THE VERTICAL DATUM IS BASED ON NAVD88 OHIO STATE PLANE 3401 DATUM. THE DATUMS ARE BASED ON THE OHIO STATE PLANES 3401 AND 3402 DATUMS. THE VERTICAL DATUM IS BASED ON NAVD88 OHIO STATE PLANE 3401 DATUM.
2) UTILITY LINES AND APPURTENANCES ARE SHOWN AS LOCATED IN THE FIELD AND/OR AS REPORTED BY THE RESPECTIVE OWNERS. NEITHER THE NUMBER, TYPE, SIZE, OR LOCATION CAN BE GUARANTEED, AND IT IS THEREFORE, THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS.
3) THIS MAP DOES NOT CONSTITUTE A BOUNDARY SURVEY PER OHIO ADMINISTRATIVE CODE CHAPTER 4733-37 MINIMUM STANDARDS FOR BOUNDARY SURVEYS.
4) PHOTO IMAGE DATA OBTAINED FROM OHIO STATEWIDE IMAGERY PROGRAM ON JANUARY 2018.
5) THE CONTRACTOR SHALL INSTALL THE APPROPRIATE BERRS/FITTINGS TO ACCOMMODATE PEDESTRIAN TRAFFIC AS WELL AS TO PROVIDE INGRESS/EGRESS FOR THE LANDOWNER. AT NO POINT SHALL ACCESS BE BLOCKED TO THE SIDEWALK AND/OR THE DRIVEWAY DURING CONSTRUCTION.
6) OVERHANGING LIMB REMOVAL SHALL BE AT THE DISCRETION OF THE DIVISION.
7) THE CONTRACTOR SHALL WORK IN CONJUNCTION WITH THE DIVISION AND PROPERLY LOCATE THE UNDERGROUND FENCE PRIOR TO COMMENCING WITH WORK. THE FENCE SHALL BE UNCOVERED PRIOR TO EXCAVATING THE VENT LINE.
8) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE EXISTING VENT LINE, CARBON FILTER AND APPURTENANCES AS SHOWN ON THIS SHEET. PAYMENT FOR REMOVAL AND DISPOSAL SHALL BE CONSIDERED INCIDENTAL TO LINE ITEM "VENT PIPE".
9) SEDIMENT CONTROLS SHALL BE PLACED AT THE DISCRETION OF THE DIVISION.

NOTES:
1) THE HORIZONTAL DATUM IS BASED ON NAD83 (2011) OHIO STATE PLANE NORTH 3401, AND THE VERTICAL DATUM IS BASED ON NAVD88 OHIO STATE PLANE 3401 DATUM.
2) UTILITY LINES AND APPURTENANCES ARE SHOWN AS LOCATED IN THE FIELD AND/OR AS REPORTED BY THE RESPECTIVE OWNERS. NEITHER THE NUMBER, TYPE, SIZE, OR LOCATION CAN BE GUARANTEED, AND IT IS THEREFORE, THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY ALL UTILITY LOCATIONS.
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6) OVERHANGING LIMB REMOVAL SHALL BE AT THE DISCRETION OF THE DIVISION.
7) THE CONTRACTOR SHALL WORK IN CONJUNCTION WITH THE DIVISION AND PROPERLY LOCATE THE UNDERGROUND FENCE PRIOR TO COMMENCING WITH WORK. THE FENCE SHALL BE UNCOVERED PRIOR TO EXCAVATING THE VENT LINE.
8) THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING THE EXISTING VENT LINE, CARBON FILTER AND APPURTENANCES AS SHOWN ON THIS SHEET. PAYMENT FOR REMOVAL AND DISPOSAL SHALL BE CONSIDERED INCIDENTAL TO LINE ITEM "VENT PIPE".
9) SEDIMENT CONTROLS SHALL BE PLACED AT THE DISCRETION OF THE DIVISION.

ESTIMATED SITE RESTORATION QUANTITIES

<table>
<thead>
<tr>
<th>COMPONENT</th>
<th>RATE</th>
<th>QUANTITY</th>
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<tbody>
<tr>
<td>SEED</td>
<td>10 LBS/1000 SF</td>
<td>75 LBS</td>
</tr>
<tr>
<td>MULCH</td>
<td>100 LBS/1000 SF</td>
<td>15 BALES</td>
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<tr>
<td>FERTILIZER</td>
<td>20 LBS/1000 SF</td>
<td>140 LBS</td>
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</table>

View of the site plan with various annotations and measurements.
NOT TO SCALE

VAULT & VENT DETAILS

SECTION VIEW & PROFILE

WORK AND MATERIALS ASSOCIATED WITH THE PROPOSED CATCH BASIN SUMP SHALL BE CONSIDERED INCIDENTAL TO LINE ITEM "VENT PIPE"

NOTES:
1. JOINT SEAL: FURNISH RESILIENT SEAL BETWEEN PRECAST MANHOLE SECTIONS AND FLEXIBLE GASKET JOINTS PER ODOT CMS 706.11.
5. VENT PIPE: HORIZONTAL AND VERTICAL LOCATIONS SHALL BE DEFINED IN PLAN VIEW OF THIS PLAN SET OR AS DETERMINED BY THE CHIEF.
6. VENT PIPE: FOR THE LENGTH OF THE HORIZONTAL SECTION OF ALL VENT LINES A MINIMUM OF 2% SLOPE TO THE VAULT SHALL BE CONSTRUCTED UNLESS OTHERWISE NOTED ON THIS SHEET.
7. **VENT PIPE SUPPORT:** CONCRETE SHALL MEET THE REQUIREMENTS OF ODOT CLASS "C" AND SHALL BE PLACED IN THE CONCRETE TUBE AS SHOWN IN THE SECTION VIEW. THE VENT PIPE SHALL BE SET THROUGH THE TUBE PRIOR TO THE PLACEMENT OF THE CONCRETE.

NOT TO SCALE

VENT LINE TRENCH DETAIL

NOT TO SCALE

SILT FENCE DETAIL

NOT TO SCALE

SILT FENCE WITH BAILE BACKUP DETAIL

NOTE:
THE TRENCHES FOR THE VENTS SHALL BE EXCAVATED TO THE DIMENSIONS SHOWN ON THE DRAWING PLAN SET. THE DIVISION SHALL APPROVE ANY FIELD ADJUSTMENTS. THE CONTRACTOR SHALL EXCAVATE AND MAINTAIN THE SIDES OF THE TRENCHES AS REQUIRED BY OSHA. NO PERSON SHALL ENTER ANY TRENCH NOT MAINTAINED AS REQUIRED BY OSHA. THE PROPOSED TRENCH DOES NOT MAINTAIN THE REQUIREMENTS BY OSHA FOR ENTRY. ANY APPROVED ADJUSTMENTS SHALL BE AT THE CONTRACTOR'S EXPENSE.

http://oilandgas.ohiodnr.gov
DIVISION OF OIL & GAS
RESOURCES MANAGEMENT
IDLE & ORPHAN WELL PROGRAM

PORTAGE #1 ORPHAN WELL SITES