WEST VIRGINIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION
OFFICE OF OIL AND GAS

COUNTIES
OF
HARRISON AND UPSHUR

SUAN WELL PACKAGE

API# 47-033-06018
API# 47-097-01588

TECHNICAL SPECIFICATIONS
# SUAN WELL PLUGGING PACKAGE

## Table of Contents

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table of Contents</td>
<td>2</td>
</tr>
<tr>
<td>I. PROJECT DESCRIPTION</td>
<td>4</td>
</tr>
<tr>
<td>1.0 Location/Site Description</td>
<td>4</td>
</tr>
<tr>
<td>1.1 API# 47-097-01588</td>
<td>4</td>
</tr>
<tr>
<td>1.2 API# 47-033-06018</td>
<td>4</td>
</tr>
<tr>
<td>2.0 Directions to site:</td>
<td>5</td>
</tr>
<tr>
<td>II. SCOPE OF WORK</td>
<td>7</td>
</tr>
<tr>
<td>III. GENERAL CONDITIONS</td>
<td>8</td>
</tr>
<tr>
<td>1.0 Administrative</td>
<td>8</td>
</tr>
<tr>
<td>2.0 Permitting</td>
<td>8</td>
</tr>
<tr>
<td>3.0 Work</td>
<td>9</td>
</tr>
<tr>
<td>IV. PROJECT DESCRIPTION</td>
<td>10</td>
</tr>
<tr>
<td>1.0 Site-based considerations:</td>
<td>10</td>
</tr>
<tr>
<td>2.0 Well-specific considerations:</td>
<td>10</td>
</tr>
<tr>
<td>V. REMEDIATION AND/OR PLUGGING WORK PLAN</td>
<td>13</td>
</tr>
<tr>
<td>VI. TECHNICAL SPECIFICATIONS</td>
<td>15</td>
</tr>
<tr>
<td>1.0 Rig and Crew -Three (3) Man Crew (minimum)</td>
<td>15</td>
</tr>
<tr>
<td>2.0 Mobilization &amp; Demobilization</td>
<td>15</td>
</tr>
<tr>
<td>2.5 Field Move</td>
<td>16</td>
</tr>
<tr>
<td>3.0 Additional Labor</td>
<td>16</td>
</tr>
<tr>
<td>4.0 Vacuum Water Truck</td>
<td>17</td>
</tr>
<tr>
<td>5.0 Heavy Equipment</td>
<td>17</td>
</tr>
<tr>
<td>5.5 Light Duty Equipment</td>
<td>18</td>
</tr>
<tr>
<td>6.0 Power Tongs</td>
<td>19</td>
</tr>
<tr>
<td>7.0 Pipe Cutting</td>
<td>19</td>
</tr>
<tr>
<td>8.0 Casing and Tubing Purchase</td>
<td>20</td>
</tr>
<tr>
<td>9.0 Casing, Tubing, and Pipe Rentals</td>
<td>20</td>
</tr>
<tr>
<td>10.0 Tri-Cone Drill Bit</td>
<td>21</td>
</tr>
<tr>
<td>11.0 Trash Pump</td>
<td>21</td>
</tr>
<tr>
<td>Section</td>
<td>Description</td>
</tr>
<tr>
<td>---------</td>
<td>--------------------------------------------------</td>
</tr>
<tr>
<td>12.0</td>
<td>On-Site Water Storage Container(s)</td>
</tr>
<tr>
<td>13.0</td>
<td>Disposal of Gel</td>
</tr>
<tr>
<td>14.0</td>
<td>Disposal of Liquid Waste</td>
</tr>
<tr>
<td>15.0</td>
<td>Disposal of Solid Waste</td>
</tr>
<tr>
<td>16.0</td>
<td>Aqua Gel</td>
</tr>
<tr>
<td>17.0</td>
<td>Cement</td>
</tr>
<tr>
<td>18.0</td>
<td>Gravel</td>
</tr>
<tr>
<td>19.0</td>
<td>Steel Mud Pit</td>
</tr>
<tr>
<td>20.0</td>
<td>Site Reclamation</td>
</tr>
<tr>
<td>21.0</td>
<td>Silt Fence</td>
</tr>
<tr>
<td>22.0</td>
<td>Monument</td>
</tr>
<tr>
<td>23.0</td>
<td>Welder/Cutting Torch</td>
</tr>
<tr>
<td>24.0</td>
<td>Oil Absorbent Supplies</td>
</tr>
<tr>
<td>25.0</td>
<td>Sand Pump</td>
</tr>
<tr>
<td>26.0</td>
<td>Cherry Picker</td>
</tr>
<tr>
<td>27.0</td>
<td>Casing/Tubing Spear</td>
</tr>
<tr>
<td>28.0</td>
<td>Overshot</td>
</tr>
<tr>
<td>29.0</td>
<td>Impression Block</td>
</tr>
<tr>
<td>30.0</td>
<td>Subs</td>
</tr>
<tr>
<td>31.0</td>
<td>Power Swivel</td>
</tr>
<tr>
<td>32.0</td>
<td>Concave Mill</td>
</tr>
<tr>
<td>33.0</td>
<td>Mud/mixing pump</td>
</tr>
<tr>
<td>34.0</td>
<td>Tie Mats</td>
</tr>
<tr>
<td>35.0</td>
<td>Administrative Cost</td>
</tr>
<tr>
<td>36.0</td>
<td>Culvert</td>
</tr>
<tr>
<td>37.0</td>
<td>Roll-Off Truck</td>
</tr>
<tr>
<td>38.0</td>
<td>Roll-Off Box Rental</td>
</tr>
<tr>
<td>39.0</td>
<td>Roll-Off Box Liners</td>
</tr>
<tr>
<td>40.0</td>
<td>Environmental Sampling &amp; Testing</td>
</tr>
</tbody>
</table>

VII. APPENDIX A – WELL RECORDS ............................................ 35
I. PROJECT DESCRIPTION

This project involves the plugging and/or remediation of abandoned oil and/or natural gas wells and sites at the location described below.

1.0 Location/Site Description

1.1 API# 47-097-01588

Physical Address: Rooting Creek Rd.
Lost Creek, WV

Parcel Description: SUAN WILLIAM R & PRISCILLA D
ID: 14-11-0489-0016-0000
DESC: 67.5 AC ROOTING CREEK & O&G TAPO-API#0460-4746-4747-4748

GPS Coordinates: 39.103078 °N, 80.267559 °W

1.2 API# 47-033-06018

Physical Address: Rooting Creek Rd.
Lost Creek, WV

Parcel Description: SUAN WILLIAM R & PRISCILLA D
ID: 17-11-0488-0006-0000
DESC: 112AC ROOTING CK ½ INT O&G (MTN V/POST F-API#0277-#1009) FRANKFURT (CID MAP2/PCL 102#2)

GPS Coordinates: 39.114675 °N, 80.277304 °W
2.0 Directions to site:

For the purposes of the pre-bid meeting, interested vendors will first meet at the intersection of Post Farm Road and Rooting Creek Road (a.k.a. Jesse Run Road). This location is 39.115106 °N, 80.275814 °W.

Directions from the Charleston Area:
From I-79 North, take Exit 110 Lost Creek. Turn right at the end of the exit ramp and go approximately 100 feet to the four-way stop. Proceed straight through the intersection onto CR-48 and travel approximately 5 9/10 miles to the community of Johnstown. Turn right onto CR-52 Rooting Creek Road (aka Jesse Run). Do not proceed up the hill marked State Route 20. Travel approximately 5/10 miles you should be at the intersection for Post Farm Road and have a dead-end sign in front of you, stop this is where we are meeting.

Alternate route:
From I-79 North, take Exit 105 Jane Lew. Turn right on Hacker Creek Road and travel approximately 200 feet and turn left on Jesse Run Road CR-8. Travel approximately 8 3/10 miles to the intersection of Post Farm Road on your right, stop this is where we are meeting for the pre-bid.

Directions from the Clarksburg Area:
Traveling south on I-79 take the Lost Creek Exit 110 and proceed approximately 9/10 mile to the four-way stop intersection turn left onto CR-48 and travel approximately 5 9/10 miles to the community of Johnstown. Turn right onto CR-52 Rooting Creek Road (aka Jesse Run) do not proceed up the hill marked State Route 20. Travel approximately 5/10 miles you should be at the intersection for Post Farm Road and have a dead-end sign in front of you, stop this is where we are meeting.

Alternate Route:
Traveling south on I-79 take Exit 115 Stonewood / Nutter Fort turn left onto State Route 20 south go approximately 4 miles, bear right at the intersection of State Route 20 and Route 57 continue south 3 9/10 miles, and turn right onto CR-48 proceed 2 9/10 miles turn left on CR-52 Rooting Creek go approximately 5/10 mile to Post Farm Road this is where we are meeting.
**Directions from the Buckhannon Area:**
Traveling on State Route 20 North from the intersection of Route 33 proceed approximately 12 5/10 miles. Turn left onto CR-48 proceed 2.9 miles turn left on CR-52 Rooting Creek go approximately 5/10 mile to Post Farm Road this is where we are meeting.
II. SCOPE OF WORK

The Contractor, the Contractor’s agents, representatives, and subcontractors (“Contractor”) shall provide all equipment, materials, labor, and professional services for the plugging of the oil and/or natural gas well(s) identified herein, and the reclaiming of all land disturbed in association with those plugging operations in accordance with West Virginia Code §§ 22-6-23, 22-6-24, and all rules promulgated thereunder.

This project is defined by, and subject to, the following documents attached hereto or included as part of supplemental documentation made available as part of the solicitation request (“Contract”):

I. Project Description
II. Scope of Work
III. General Conditions
IV. Well Description
V. Remediation and Plugging Work Plan
VI. Technical Specifications
VII. Appendix A – Well Records
III. GENERAL CONDITIONS

In addition to the Standard Terms & Conditions for Construction and Reclamation, the following conditions govern this Contract:

1.0 Administrative

A. The Contract shall be overseen by DEP by an inspector specialist/project coordinator from the Abandoned Well Plugging Program. DEP may, situationally, assign alternate or assistant coordinators as staffing needs vary.

B. The Project Coordinator for the contract will be designated at the time of the issuance of the Notice to Proceed.

C. The Project Coordinator shall serve as the first point of contact for the Contractor in all matters related to the Contract.

D. The Contractor shall notify the Project Coordinator of any work stoppages or changes to planned operators at soon as practically possible.

E. All change order requests shall be submitted to the Project Coordinator for approval prior to the initiation of any work related to that change order request.

2.0 Permitting

A. Upon award of the Contract to the successful bidder, the Department shall transfer the well to and issue the plugging permit under the responsible party name, UNKNOWN - DEP PAID PLUGGING CONTRACT.

B. The plugging portion of the Remediation and Plugging Work Plan included herein (Section V) shall be incorporated as part of the plugging permit. This plan is developed based on best available information. Should field observations during plugging operations necessitate deviations from this plan, the Department and Contractor shall cooperate to develop alternate plans in full compliance with all applicable rules and regulations.

C. All work performed under the Contract must be completed in accordance with the most current version of the Erosion and Sediment Control Field Manual.
D. Unless otherwise specified in the Technical Specifications and/or Bid Sheet, the Department will obtain and pay for all Local, State, and Federal permits necessary for the completion of the Contract. Any permit conditions contained within said permits shall become mandatory inclusions in the Contract.

3.0 Work

A. Contractor shall perform Contract work (i.e., site preparation and permitted well work) during the days of Monday through Friday. Work will not be conducted on weekends or state/national holidays except with Department approval or during emergency situations. A workday is defined as a maximum of ten (10) hours; however, additional hours may be worked with Department approval or during emergency situations.

B. Contractor is responsible for tracking daily time and material utilization for the purpose of invoicing. The Department shall confirm daily expenditures at the conclusion of each workday. Any disputes related to time and/or material usage determinations should be made in writing to the Project Coordinator.

C. All in-stream work required in association with the project shall be performed in accordance with all applicable local, state, and federal requirements.

D. Toilet facilities will be provided by the vendor but will not be a separate line item in the contract.
IV. PROJECT DESCRIPTION

1.0 Site-based considerations:

The Suan plugging project consists of two wells identified as the Suan #1 and Mays #1, which are designated by API# 47-033-06018 and 47-097-01588, respectively. Note that although these wells are in different counties, they are located on adjoining surface tracts owned by the same landowners.

2.0 Well-specific considerations:

47-097-01588 (Mays #1)

DECIMAL DEGREE COORDINATES 39.103078 °N, 80.267559 °W
UTM 562471.26 E 4328380.75 N

DEP has a well record for the Mays #1. This well appears to have been slim-holed and is currently leaking gas and fluids between the casing strings. This well was permitted to a total depth of 4520’
but appears to have only been drilled to a total depth of 2545’. The initial open flow of the well was 2,900,000 mcf. Multiple shows of oil and water were reported on the well record.

The site and lease road to the well present a significant challenge. The lease road has a slip that will need to have a minimum base of 6” stone placed down across the exposed slip plane to minimize impacts. The culvert in the section where the road starts down into the woods will likely need to be extended or replaced. The location road and site beyond that point will need to be cleared and graveled as needed. It is likely that the initial grade of the slope will be too severe for the use of tie mats although they may be needed on the site. The site and road are generally in a wet condition due to apparent mine discharge and care must be taken to reduce the impact to the environment.

47-033-06018 (Suan #1)

DECIMAL DEGREE COORDINATES 39.114675 °N, 80.277304 °W
UTM 562479 E 4329750. N

The Suan #1 is a pre-1929 well for which DEP has no records. The Suan #1 is believed to have been drilled to 1747’ and will likely be a cleanout. The site and road will need to be covered with
tie mats to minimize impacts to the Suan’s hay field. Rock will not be permissible in this application.
V. REMEDIATION AND/OR PLUGGING WORK PLAN

Contract work may require site remediation of the well site prior to the commencement of plugging operations.

Project will commence, generally, as follows:

1. Pre-mobilization site remediation, if necessary,
2. Site preparation,
3. Connect rig to well,
4. Clean out well to total depth,
5. Set prescribed plugs and monument,
6. Reclaim site including removal of stream crossings, and
7. Submit invoice to DEP.

Proposed Work Plan (47-097-01588):

1. Mobilize construction equipment and prepare the Mays well site brush location and build site using stone as needed.
2. Mobilize rig and plugging equipment to site.
3. Nipple up on existing well.
4. Pull tubing from well bore.
5. Free point 4 ½” casing and cut
6. Run in well with work string, mix and pump 6% gel to condition the well and set a minimum of 100’ bottom hole plug, remove work string and wait on cement (WOC).
7. Tag bottom hole plug to ensure proper cement height if cement is of proper height.
8. Run in hole with work string and set a minimum of 100’ cement plug across casing cut remove work string and pull 4 ½” casing and WOC.
9. Tag cement plug to ensure proper height.
10. Free point 7” casing and cut. If free point of 7” casing cannot be achieved below elevation the pipe will be ripped from approximately 50’ below elevation to 50’ above elevation.
11. Run in hole with work string and set a minimum of 100’ cement plug across elevation from 1291’ -1191’ and remove work string and WOC.
12. If free point of 7” casing is found to be below elevation run in hole with work string and set a minimum of 100’ cement plug across casing remove work string and 7” casing from well and WOC.
13. Tag cement plug to ensure proper height.
14. Free point 8 5/8” casing and cut pipe. If no free point is found rip pipe from approximately 400’ to 300’ run in hole with work string and set a minimum of 100’ cement plug from approximately 400’ to 300’ remove work string and WOC.
15. Tag cement plug to ensure proper height if proper height is achieved run in well and rip casing from approximately 100’ to surface.
16. Run in hole with work string and set a cement plug from a minimum of 100’ to surface and set monument with API attached.
17. Reclaim site in accordance with permit and the West Virginia Erosion and Sediment Control Field Manual – May 2012.

Proposed Work Plan (47-033-06018):

1. Mobilize construction equipment and prepare the Suan #1 site by laying timber mats.
2. Mobilize rig and plugging equipment to site.
3. Nipple up on existing well. Most likely 10 ¾” casing damaged at surface.
4. Clean out well with fluid to total depth estimated 1787’
5. Run in well with work string, mix and pump 6% gel to condition the well and set a minimum of 100’ bottom hole plug, remove work string and WOC.
6. Tag bottom hole plug to ensure proper cement height if cement is of proper height.
7. Run in hole with work string and set a minimum of 100’ cement plug across elevation from 1108’ to 1008’ TOOH, WOC.
8. Tag cement plug to ensure proper height.
9. Attempt to free point 10 ¾” casing estimated to be around 1058’ if no free point rip casing from 450’ to 350’. Run in hole with work string and set a minimum of 100’ cement plug from estimated 450’-350’.
10. If free point is found, casing will be cut, run in hole with work string and set a minimum 100’ cement plug across the casing cut and work string will be removed and 10 ¾” casing will be pulled to an estimated 100’
11. Tag cement plug to ensure proper height.
12. Run in hole with work string and set a cement plug from a minimum of 100’ to surface remove work string from well and pull remaining 10 ¾” casing.
13. Set monument with API attached.
VI. TECHNICAL SPECIFICATIONS

1.0 Rig and Crew - Three (3) Man Crew (minimum)

**Description:**

The rig is a mobile platform from which well work is performed. The rig crew are the persons needed to adequately operate the rig.

**Functional/performance requirements:**

The rig must be a mobile rig, capable of pulling 150 percent of the heaviest hook load anticipated. Rig shall have the ability to use both cable tools and rotary type equipment. Rig will be equipped with a walking beam and cable tools such as stinger, drill stem, jars, bailers of various sizes, an assortment of cable tool bits, a sinker bar, and well control devices. The rig crew will consist of, at a minimum, three persons – a rig operator, two hands, and a pickup truck.

**Measurement and Payment:**

Item is bid per hour of operation. Hours charged will be for on-site work only. Daily transportation to and from the job site is not included and will not be charged separately. At no time may an individual worker’s hours be billed simultaneously for work completed under this item and any other labor-based item allowing for hourly rate payments (e.g., ‘Additional Labor’ or ‘Heavy Equipment.’)

Labor hours for Rig and Crew are payable only after the point in time in which the rig has been set up and connected to the well. Rig set up prior to well connection is considered Mobilization.

2.0 Mobilization & Demobilization

**Description:**

Mobilization and demobilization, collectively, encompasses the labor and equipment necessary to transport all contract equipment, tools, and materials to and from the project site. Mobilization and demobilization pricing includes all equipment on the contract at the time of the bid. Mobilization of the rig includes all setup up to the point that the rig is
SUAN WELL PLUGGING PACKAGE

connected to the well. Transportation costs for any other unanticipated equipment needs that may arise will be resolved through the Change Order process, if necessary.

**Functional requirements:**

All necessary trucking must include operator with a valid Commercial Driver’s License (CDL).

**Measurement and Payment:**

Item is bid as a service, with half the total bid amount payable after mobilization has occurred (50.0%), and the remainder payable with the final invoice.

2.5 **Field Move**

**Description:**

A field move is the complete relocation of field equipment and/or materials between successive project sites contained within the same contract. The field move includes all the labor, equipment, and materials necessary to demobilize from one site, transport all equipment and/or materials to the next location, and setup the rig to the point that the rig is connected to the next well.

**Functional requirements:**

All necessary trucking must include operator with a valid Commercial Driver’s License (CDL).

**Measurement and payment:**

Item is bid as a lump sum inclusive of all labor, equipment, and materials.

3.0 **Additional Labor**

**Description:**
Additional labor is general labor performing tasks not included in the rig crew bid. This labor may be assisting by performing tasks the rig crew does not have time to complete or may be performing tasks not included in the actual well work.

**Measurement and payment:**

This item is bid per worker per hour. At no time may an individual worker’s hours be billed simultaneously for work completed under this item and any other labor-based item allowing for hourly rate payments (e.g., ‘Rig and Crew’ or ‘Heavy Equipment.’)

### 4.0 Vacuum Water Truck

**Description:**

A vacuum truck is a tank truck that has a pump and a tank designed to pneumatically suck liquids, sludges, slurries, or similar fluids into the tank of the truck for the purposes of transporting that material to another location. In this contract, the vacuum water truck will be used to deliver water to site, dispose of plugging fluids and may assist in controlling fluid returns from the well bore site.

**Functional requirements:**

Vacuum water truck must include all hoses and connections needed as well as operator.

**Measurement and payment:**

This item is bid per hour of operation and includes operator. At no time may an individual worker’s hours be billed simultaneously for work completed under this item and any other labor-based item allowing for hourly rate payments (e.g., ‘Rig and Crew’ or ‘Heavy Equipment.’)

### 5.0 Heavy Equipment

**Description:**
Heavy equipment shall be used in construction and reclamation of site and access road, and in the moving of tools and equipment during the plugging operations. The use of heavy equipment requires a qualified operator.

**Functional requirements:**

Bulldozer must have winches and tilt blades and will be used for grading and the spotting of equipment. Excavator must be a tracked machine. Note: horsepower and weight will be verified by reviewing the specifications of the model(s) selected by the vendor.

1. Bulldozer (minimum 85 horsepower and minimum weight 16,000 pounds.)
2. Excavator (minimum 85 horsepower and minimum weight 25,000 pounds.)

**Measurement and payment:**

This item is bid per hour of operation and includes labor. At no time may an individual worker’s hours be billed simultaneously for work completed under this item and any other labor-based item allowing for hourly rate payments (e.g., ‘Rig and Crew or ‘Additional Labor.’)

### 5.5 Light Duty Equipment

**Description:**

Certain light duty equipment may be necessary to move dirt, debris, and equipment at the well site. Light duty equipment generally does not require a qualified operator.

**Functional requirements:**

1. Skid Steer (minimum 24 HP, 700# rated capacity or equivalent.)
2. Telehandler (minimum 7,000 lb lift capacity)

**Measurement and payment:**

This item is bid per hour of operation and does not include specific operator labor. Labor while using this equipment is to be billed under “Additional Labor.”
6.0 Power Tongs

Description:

Power tongs are large-capacity self-locking wrenches used to grip drill string components and apply torque. Power tongs are used to assemble and disassemble tubulars and casings.

Functional requirements:

The following sizes may be needed for this project.

1. Up to 4 ½ inches
2. Over 4 ½ inches up to 8 1/2 inches
3. Over 8 5/8 inches up to 10 3/4 inches

Measurement and payment:

This item is bid per day of use.

7.0 Pipe Cutting

Description:

Pipe cutting is the separation of tubing and casing found in the well bore. This may be accomplished in various way including, but not limited to, the use of cable tools with a knife and rotary type cutting tools which require the use of the rig.

Functional Requirements:

The sizes listed below may be needed for this project.

1. 3 ½ inches or smaller
2. 4 1/2 inches to 8 5/8 inches

Measurement and payment:
This item is bid per cut.

8.0 Casing and Tubing Purchase

**Description:**

Casing and tubing are pipes of a specified diameter lowered into the borehole to serve as a conduit for fluids or to provide borehole structural stability. The casing and tubing purchase is necessary when casing and tubing must be left in the well bore, and when casings need to be lengthened to nipple up for physical connection to the rig. Slips and elevators will be provided by the contractor.

**Functional requirements:**

The following sizes may be needed.

1. 10 ¾” casing
2. 8 5/8” casing
3. 7” casing

**Measurement and payment:**

This item is bid per foot.

9.0 Casing, Tubing, and Pipe Rentals

**Description:**

Casing and tubing are pipes of a specified diameter lowered into the borehole to serve as a conduit for fluids or to provide borehole structural stability. The casing, tubing, drill pipe, and drill collar rentals are needed when tubing and casings may be used in the well bore and recovered in such instances.

**Functional requirements:**

This will include various sizes that will be determined by the well bore. Slips and elevators will be provided by the contractor.
1. Tubing: 1 ½ inches to 2 3/8 inches
2. Drill Pipe: 3 ½ inches PAC 50 or equivalent
3. Drill Pipe: 2 7/8 inches PAC 50 or equivalent
4. Drill Collar: 2 7/8 inches

**Measurement and payment:**

This item is bid per foot.

---

10.0 Tri-Cone Drill Bit

**Description:**

The drill bit is the tool used to cut or crush rock during well drilling. A Tri-cone bit will be used to drill out fill-up found in the well bore.

**Functional requirements:**

Tri-cone bit include bit sub and a float.

1. 6 ½ inches to 7 ½ inches

**Drill bit shall be in used condition.**

**Measurement and payment:**

This item is bid per bit.

---

11.0 Trash Pump

**Description:**

The trash pump is used to transfer water and other plugging fluids between locations.

**Functional and Performance requirements:**
The trash pump must be a minimum three (3) inches and shall be of industrial grade with all hoses and fittings included.

**Measurement and payment:**

This item is bid per hour of use.

12.0 On-Site Water Storage Container(s)

**Description:**

The water storage container(s) must hold at a minimum one hundred (100) barrels and will be used for the storage of fresh water for use in the plugging operation.

**Measurement and payment:**

This item is bid per container.

13.0 Disposal of Gel

**Description:**

There are instances where gel fluids from the plugging operations may need to be disposed of, in which case they shall be hauled to an approved solid waste facility.

**Measurement and payment:**

This item is bid per barrel and does not include trucking cost. Copies of scale tickets from an approved solid waste facility shall be provided to the Department.

14.0 Disposal of Liquid Waste

**Description:**
There are instances where saltwater or other Class II fluids are returned to the surface due to the plugging operations and must be disposed of at an Underground Injection Control (UIC) well. The contactor will transport the saltwater or other Class II fluids to a UIC well for disposal.

**Measurement and payment:**

This item is bid per barrel and does not include trucking cost. Manifest and invoice from an approved disposal facility shall be provided to the Department.

15.0 Disposal of Solid Waste

**Description:**

Solid waste, including contaminated soil, disposal will be the responsibility of the contractor.

**Measurement and payment:**

This item is bid per ton and does include trucking cost. Copies of scale tickets from an approved solid waste facility shall be provided to the Department.

16.0 Aqua Gel

**Description:**

Gel is a mixture of water and bentonite clay mixed to desired weight. Aqua gel will have dual use, it will be used to increase the viscosity of the drill fluid and as spacers between the cement plugs. The Aqua Gel will be mixed, pumped, and delivered to site.

**Measurement and payment:**

This item is bid per fifty (50) pound sack. Larger unit quantities of gel may be used on-site but bid prices should be standardized to the fifty (50) pound sack.

17.0 Cement

**Description:**
Portland Class A Cement shall be used to cement casings and tubulars in the well bore and for cement plugs.

**Performance requirements:**

Cement will be a Portland Class A cement with no other additives.

**Measurement and payment:**

This item is bid per standard ninety-four (94) pound sack delivered to site. Pricing is to include mixing and pumping. Larger unit sizes of cement may be used on-site (i.e., “Super Sacks”), but bid prices and payment shall be standardized to the ninety-four-pound sack equivalent.

18.0 Gravel

**Description:**

Gravel is used for a variety of applications including roadbuilding and site stabilization.

**Functional requirement:**

Gravel will be limestone and size will be determined by the application for which it is being used.

**Measurement and payment:**

This item is bid per ton delivered to site. This price will include trucking to site.

19.0 Steel Mud Pit

**Description:**

The mud pit is a large tank that contains drilling fluids on-site. Mud pits may also be used to store plugging fluids from the well.

**Functional requirement:**
The mud pit shall be constructed of steel and have a divider to expedite the settling of cuttings and debris flushed from the well bore.

**Measurement and payment:**

This item is bid per mud pit.

### 20.0 Site Reclamation

**Description:**

Site reclamation is the process of restoring the well site area back to original condition. Site reclamation generally requires earth work and a combination of lime, fertilizer, seed, and mulch, as appropriate.

**Performance Requirements:**

Site reclamation shall be completed in accordance with the provisions described in the West Virginia Erosion and Sediment Control Field Manual – May 2012. Note that Section III of this manual establishes minimum quantities for reclamation materials including lime, fertilizer, seed, and mulch based on site acreage. Site reclamation performance will be evaluated against these parameters.


**Measurement and payment:**

This item is bid as a lump sum for all materials needed to complete site reclamation including the soil borrow area, if applicable. Labor for the completion of site reclamation activities shall be billed as ‘additional labor.’

### 21.0 Silt Fence

**Description:**
A silt fence is a temporary sediment control device used on construction sites to protect water quality in nearby streams, rivers, lakes, and seas from sediment in stormwater runoff.

**Functional requirements:**

Silt Fence shall be supplied with stakes pre-attached and will be installed prior to site construction. Silt fence will also be removed at the completion of reclamation.

**Measurement and payment:**

This item is bid per foot.

### 22.0 Monument

**Description:**

The monument is the permanent marker indicating the location of the plugged well.

**Functional requirements:**

Monument and its installation will meet all the requirements in 35 CSR 4 – 5.5.b.

- The monument will be a minimum of six (6) inches in outside diameter.
- The monument will extend minimum of thirty (30) inches above final grade and not less than ten (10) feet below the surface.
- The monument will have the well’s API Number attached.


**Measurement and payment:**

This item is bid per monument.

### 23.0 Welder/Cutting Torch

**Description:**
A welder/cutting torch is necessary for the fusing or cutting of metal components.

**Measurement and payment:**

This item is bid per hour of use and includes operator. At no time may an individual worker’s hours be billed simultaneously for work completed under this item and any other labor-based item allowing for hourly rate payments (e.g., ‘Additional Labor’ or ‘Heavy Equipment.’)

**24.0 Oil Absorbent Supplies**

**Description:**

Oil Absorbent Supplies are used to absorb and contain oil as directed by the DEP.

**Functional requirements:**

1. Booms will be bid per boom and must be a minimum of ten (10) feet in length.
2. Absorbent pads will be bid by the bundle, pads must be a minimum of two (2) feet by two (2) feet.
3. Peat sorb will be bid per fifty (50) pound bag.
4. Plastic roll - (100 feet by 50 feet), twenty (20) mil (0.02inch) minimum thickness, bid per roll.

**Measurement and Payment:**

Items are bid as described above.

**25.0 Sand Pump**

**Description:**

A sand pump is a syringe-type cable tool typically between four (4) and six (6) inches in diameter used to pump sand and cuttings from the well bore.

**Functional requirements:**
The well bore size will determine the size of the sand pump used.

**Measurement and payment:**

Item is bid per pump.

### 26.0 Cherry Picker

**Description:**

A cherry picker is a tool used to retrieve items from the well bore and drill out wooden plugs. This tool is run on the stem and is used in conjunction with jars.

**Functional requirements:**

The cherry picker will be a four (4) to eight (8) in diameter tubular four (4) feet in length with a tapered hole and slot. The well bore diameter will determine the precise size of cherry picker.

**Measurement and payment:**

Item is bid per cherry picker.

### 27.0 Casing/Tubing Spear

**Description:**

Casing/Tubing Spear is a grapple tool that will go inside of tubing that is inside of the well bore.

**Functional requirements:**

Size will be determined by tubing encountered.

1. Tubing Spear 1 inch to 3 ½ inches
2. Casing Spear 4 ½ inches to 10 ¾ inches

**Measurement and payment:**
28.0 Overshot

Description:

Overshot is a grapple tool used to retrieve tubular pipe and casing by going over the outside of item being fished.

Functional requirements:

Size to be determined by the size of the fish. All grapples and working components must be included.

1. 1 inch to 3 1/2 inches
2. 4 1/2 inches to 8 5/8 inches

Measurement and payment:

Item is bid per tool.

29.0 Impression Block

Description:

The impression block is a wax block affixed to the bottom of fishing tools to allow for the creation of an impression of hole contents to assist in fishing operations.

Measurement and payment:

Item is bid per impression block.

30.0 Subs

Description:
A sub is a short, threaded piece of pipe used to adapt parts of the drilling string that cannot otherwise be screwed together because of differences in thread size or design. Subs may be needed to change over to drill pipe or to retrieve casing from the well bore.

**Measurement and payment:**

This item is bid per sub.

### 31.0 Power Swivel

**Description:**

The power swivel is a mechanical device that suspends the weight of the drill string. It is designed to allow rotation of the drill string beneath it, conveying high volumes of high-pressure drilling mud between the rig’s circulation system and the drill string.

**Functional requirements:**

The power swivel must be a minimum of a twenty-five (25) ton hydraulic unit. The Power Swivel must include the Power Unit with hoses and connections, also includes two Saver Subs (one for Drill Pipe and one for Drill Collars).

**Measurement and payment:**

This item is bid per hour of use.

### 32.0 Concave Mill

**Description:**

A mill is a tool that grinds metal downhole, typically to remove junk or parts of a casing string.

**Functional requirements:**

Mills will include subs needed.
SUAN WELL PLUGGING PACKAGE

1. 4 ⅜ inch mill
2. 8 ⅜ inch mill

Measurement and payment:

Item is bid per mill.

33.0 Mud/mixing pump

Description:

A mud pump is a reciprocating piston/plunger pump designed to circulate drilling fluid under high pressure down the drill string and back up the annulus.

Functional requirements:

This pump must have a minimum of five (5) inch diameter with a seven (7) inch stroke length or larger, and able to supply volumes and pressure as needed. It will include hoses and connections capable of handling the pump output.

Measurement and payment:

Item is bid per hour of use.

34.0 Tie Mats

Description:

Tie mats are portable structures used to support the weight of heavy equipment.

Functional requirements:
Minimum size 4’ x 12’. Tie mats may be constructed of natural or synthetic materials.

**Measurement and payment:**

Item is bid per mat for the duration of the project.

35.0 Administrative Cost

**Description:**

In execution of the contract, the contractor may encounter various required administrative costs, including, but not limited to insurance or bonding premiums. These costs may be billed back under this line item.

**Measurement and payment:**

Items is bid as a service, not exceeding 3.00% of total bid amount. Bid amount is fixed for the life of the contract and may not be modified.

36.0 Culvert

**Description:**

A culvert is a pipe intended to channel water.

**Functional requirements:**

It is anticipated that culverts of the following size will be needed (diameter x length):

1. 36” x 20’ (thirty-six inches by twenty feet)
2. 48” x 20’ (forty-eight inches by twenty feet)

Culvert may be metal or HDPE.

**Measurement and Payment:**

Item is bid for each culvert.
37.0 Roll-Off Truck

**Description**

Roll-Off Truck will be used to haul roll-off boxes, equipment, and materials.

**Measurement and Payment:**
Trucking will be billed by the hour and include a licensed driver.

38.0 Roll-Off Box Rental

**Description**

Roll-off boxes are used to hold and transport solid waste generated from the site for disposal.

**Measurement and Payment:**
Roll-off box rental will be bid per day for each box used.

39.0 Roll-Off Box Liners

**Description**

Roll-off box liners are used to line roll-off boxes to prevent leakage and cover materials during transport. Liners may also be used for containment while bulking materials

**Measurement and Payment**

Roll-off box liners are bid per each liner used.

40.0 Environmental Sampling & Testing

**Description**
Although this contract does not directly require any characterization or permitting of wastes prior to disposal, it is likely that analysis of solid wastes may be required by the approved solid waste facilities.

**Functional requirements**
In the event analysis or permitting are required, the solid waste facility will identify the testing parameters.

**Measurement and Payment**
Environmental sampling and testing are bid per well.
### VII. APPENDIX A – WELL RECORDS

#### SUAN WELL PLUGGING PACKAGE

#### Oil and Gas Division

<table>
<thead>
<tr>
<th>Company</th>
<th>St. Clair Oil Company</th>
</tr>
</thead>
<tbody>
<tr>
<td>Address</td>
<td>219 E. Main St., St. Clairsville, OH</td>
</tr>
<tr>
<td>Farm</td>
<td>Willis J. Mays Farm</td>
</tr>
<tr>
<td>Location (water)</td>
<td>Rooting Creek</td>
</tr>
<tr>
<td>Well No.</td>
<td>2241</td>
</tr>
<tr>
<td>District</td>
<td>Warren</td>
</tr>
<tr>
<td>County</td>
<td>Upshur</td>
</tr>
<tr>
<td>Minerals owned</td>
<td>William A. and Helen L. Mays</td>
</tr>
<tr>
<td>Address</td>
<td>P.O. Box 1814, Clarksburg, W. VA 26301</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Used in</th>
<th>Drilling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>3 5/8</td>
</tr>
<tr>
<td>Drilling Completed</td>
<td>1-1/2</td>
</tr>
<tr>
<td>Initial open flow</td>
<td>500,000 cu. ft.</td>
</tr>
<tr>
<td>Final production</td>
<td>2000 cu. ft. per day</td>
</tr>
</tbody>
</table>

| Left in Well | 3 1/2 |
| Cement fill up | 100 SKS |

#### Well Treatment Details
- Coal | None
- Fresh water | None
- Producing Sand | 5th
- Depth | 2,539 ft. to 2,549 ft.

#### List of Formations

<table>
<thead>
<tr>
<th>Formation</th>
<th>Color</th>
<th>Hard or Soft</th>
<th>Top Feet</th>
<th>Bottom Feet</th>
<th>Oil, Gas or Water</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clay</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slate</td>
<td>5</td>
<td></td>
<td>0</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Lime</td>
<td>20</td>
<td></td>
<td>0</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>Slate Black</td>
<td>78</td>
<td></td>
<td>78</td>
<td>78</td>
<td></td>
</tr>
<tr>
<td>Lime</td>
<td>95</td>
<td></td>
<td>95</td>
<td>105</td>
<td></td>
</tr>
<tr>
<td>Redrock</td>
<td></td>
<td></td>
<td>105</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slate White</td>
<td>236</td>
<td></td>
<td>236</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Sand</td>
<td>250</td>
<td></td>
<td>250</td>
<td>250</td>
<td>250</td>
</tr>
<tr>
<td>Lime</td>
<td>280</td>
<td></td>
<td>280</td>
<td>280</td>
<td>280</td>
</tr>
<tr>
<td>Slate</td>
<td>350</td>
<td></td>
<td>350</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Redrock</td>
<td>400</td>
<td></td>
<td>400</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td>Slate</td>
<td>450</td>
<td></td>
<td>450</td>
<td>515</td>
<td>515</td>
</tr>
<tr>
<td>Sand</td>
<td>515</td>
<td></td>
<td>515</td>
<td>540</td>
<td>540</td>
</tr>
<tr>
<td>Lime Dark</td>
<td>540</td>
<td></td>
<td>540</td>
<td>555</td>
<td>555</td>
</tr>
<tr>
<td>Slate Black</td>
<td>585</td>
<td></td>
<td>585</td>
<td>655</td>
<td>655</td>
</tr>
<tr>
<td>Sand</td>
<td>655</td>
<td></td>
<td>655</td>
<td>760</td>
<td>760</td>
</tr>
<tr>
<td>Slate Black</td>
<td>760</td>
<td></td>
<td>760</td>
<td>800</td>
<td>800</td>
</tr>
<tr>
<td>Slate</td>
<td>800</td>
<td></td>
<td>800</td>
<td>865</td>
<td>865</td>
</tr>
<tr>
<td>Redrock</td>
<td>865</td>
<td></td>
<td>865</td>
<td>925</td>
<td>925</td>
</tr>
<tr>
<td>Slate</td>
<td>925</td>
<td></td>
<td>925</td>
<td>955</td>
<td>955</td>
</tr>
<tr>
<td>Sand</td>
<td>955</td>
<td></td>
<td>955</td>
<td>1015</td>
<td>1015</td>
</tr>
<tr>
<td>Sand</td>
<td>1015</td>
<td></td>
<td>1015</td>
<td>1045</td>
<td>1045</td>
</tr>
</tbody>
</table>

* Indicated Electric Log tops in the remarks section.