

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

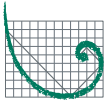
Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





# ERM Environmental Resources Management

Boring/Well No.: MW-1

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM 15N 507828.25, 3327953.8

Surface Elev.: NM Boring T.D.: 60' Boring Dia.: 2.25"

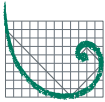
Date Started: 12/1/2021 Date Completed: 12/1/2021 Well Dia./Materials: 3/4" PVC Pre-Pack

Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|---|
| 0            |                         |                   | 3.0/4.0                     | Top: 0.84<br>Middle: 0.85<br>Bottom: 1.61 | 0-4                         | 0-3': CLAY: dark gray (10YR, 4/1), dry, medium soft to medium stiff, good plasticity, silty at top, no odor, penetrometer: 1.0-1.75 T/sq. ft.<br><br>3-4': NO RECOVERY  |
| 5            |                         |                   | 4.0/4.0                     | Top: 1.83<br>Middle: 2.81<br>Bottom: 2.83 | 4-8                         | 4-8': CLAY: light gray (10YR, 7/2), dry, medium stiff, good plasticity, no odor, penetrometer: 2.0 T/sq. ft.  |
| 10           |                         |                   | 3.6/4.0                     | Top: 3.08<br>Middle: 2.56<br>Bottom: 2.43 | 8-12                        | 8-9': CLAY: light gray (10YR, 7/2), dry, medium stiff, good plasticity, no odor, penetrometer: 1.75 T/sq. ft.<br>9-11.6': SILTY CLAY: yellowish red (5YR, 5/6) to light gray, dry, mottled, stiff clay with softer silt pockets and lenses, sparse shell fragments, no odor, penetrometer: 1.75-2.25 T/sq. ft.<br>11.6-12': NO RECOVERY |
| 15           |                         |                   | 4.0/4.0                     | Top: 3.02<br>Middle: 3.06<br>Bottom: 2.73 | 12-16                       | 12-16': CLAY: brownish yellow (10YR, 6/6) to light gray, mottled, dry, stiff, medium plasticity, occasional silty pockets/lenses 14-16 feet, no odor, penetrometer: 2.0 T/sq. ft.   |
| 20           |                         |                   | 3.2/4.0                     | Top: 2.19<br>Middle: 1.75<br>Bottom: 2.34 | 16-20                       | 16-18': SILTY CLAY: light brownish gray (10YR, 6/2), moist where silty, medium stiff clay with silt pockets and lenses, no odor, penetrometer: 2.0 T/sq. ft.<br>18-19.2': CLAY: gray, dry, stiff, medium plasticity, no odor, penetrometer: 2.0 T/sq. ft.<br>19.2-20': NO RECOVERY  |
| 25           |                         |                   | 4.0/4.0                     | Top: 1.75<br>Middle: 1.62<br>Bottom: 1.42 | 20-24                       | 20-24': CLAY: very pale brown (10YR, 7/3), dry, medium stiff to stiff, poor plasticity, little silt, no odor, penetrometer: 2.0-2.5 T/sq. ft.   |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.61<br>Middle: 1.72<br>Bottom: 1.52 | 24-28                       | 24-28': CLAY: very pale brown (10YR, 7/3), dry, very stiff, poor plasticity, little silt, no odor, penetrometer: 2.5-3.5 T/sq. ft.  |
|              |                         |                   | 4.0/4.0                     | Top: 1.71<br>Middle: 1.71<br>Bottom: 2.29 | 28-32                       | 28-32': CLAY: light brownish gray (10YR, 6/2), dry, very stiff, poor plasticity, some concretions, penetrometer: 3.25 T/sq. ft.   |
|              |                         |                   |                             |   |                             |   |





| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|--|
|              |                         |                   |                             |   |                             | (Cont. from page 1)  |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.71<br>Middle: 1.71<br>Bottom: 2.29 | 28-32                       | 28-32': CLAY: light brownish gray (10YR, 6/2), dry, very stiff, poor plasticity, some concretions, penetrometer: 3.25 T/sq. ft.                      |
|              |                         |                   | 4.0/4.0                     | Top: 1.74<br>Middle: 1.67<br>Bottom: 2.02 | 32-36                       | 32-36': SILTY CLAY: strong brown (7.5YR, 5/6), dry, stiff clay with some silt, slightly softer where silty, no odor, penetrometer: 1.0-4.0 T/sq. ft. |
|              |                         |                   | 4.0/4.0                     | Top: 1.81<br>Middle: 1.57<br>Bottom: 2.18 | 36-40                       | 36-40': CLAY: brown (7.5YR, 5/3), with some black streaks, dry, stiff, sparse concretions, poor plasticity, no odor, penetrometer: 3.0 T/sq. ft.     |
|              |                         |                   | 4.0/4.0                     | Top: 1.87<br>Middle: 2.11<br>Bottom: 1.91 | 40-44                       | 40-44': CLAY: pale brown (10YR, 6/3) to light gray, mottled, dry, stiff to very stiff, medium to poor plasticity, penetrometer: 2.5-3.0 T/sq. ft.    |
|              |                         |                   | 4.0/4.0                     | Top: 1.27<br>Middle: 1.64<br>Bottom: 1.54 | 44-48                       | 44-48': CLAY: brown (10YR, 6/3), mottled, dry, very stiff, medium to poor plasticity, penetrometer: 4.5 T/sq. ft.                                    |
|              |                         |                   | 4.0/2.0                     | Top: 1.53<br>Bottom: 1.41                 | 48-50                       | 48-50': SILTY CLAY: gray (10YR, 6/1), very stiff clay, dry, medium soft where very silty, penetrometer: 3.0-1.25 T/sq. ft.                           |
|              |                         |                   | 4.0/2.0                     | Top: 1.19<br>Bottom: 1.48                 | 50-52                       | 50-52': CLAYEY SILT: greenish gray (GLE Y1, 6/10Y), medium soft, moist to dry, more clay and stiffer at base, penetrometer: 1.75 T/sq. ft.           |
|              |                         |                   | 4.0/2.0                     | Top: 1.36<br>Bottom: 1.19                 | 52-54                       | 52-54': CLAYEY SILT: greenish gray (GLE Y1, 6/10Y), medium soft, moist to wet, more clay and stiffer at base, penetrometer: 1.0 T/sq. ft.            |
|              |                         |                   | 4.0/2.0                     | Top: 1.26<br>Bottom: 1.88                 | 54-56                       | 54-56': SILTY CLAY: greenish gray (GLE Y1, 5/5GY), slightly moist to dry, medium soft, good plasticity, penetrometer: 1.5 T/sq. ft.                  |
|              |                         |                   | 4.0/2.0                     | Top: 2.45<br>Bottom: 2.71                 | 56-58                       | 56-58': CLAY: greenish gray, medium stiff, dry, some silt, no odor, penetrometer: 2.0 T/sq. ft.  |
|              |                         |                   | 4.0/2.0                     | Top: 2.52<br>Bottom: 2.14                 | 58-60                       | 58-60': CLAY: gray, slightly moist to dry, medium stiff, with scattered wood fragments, penetrometer: 1.75 T/sq. ft.                                 |
| 60           |                         |                   |                             |   |                             |  |
|              |                         |                   |                             |   |                             |  |
| 65           |                         |                   |                             |   |                             |  |



Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_CVX\Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

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**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

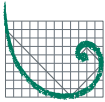
Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





# ERM Environmental Resources Management

Boring/Well No.: MW-2

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 507704.97, 3328141.8

Surface Elev.: NM Boring T.D.: 62' Boring Dia.: 3.25"

Date Started: 12/9/2021 Date Completed: 12/10/2021 Well Dia./Materials: 1" PVC Pre-Pack

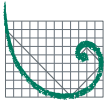
Drilling Company: Walker Hill Driller: Wanya Cook

Drilling Method: Direct Push - Geoprobe 3230DT Grouting Method: Portland

Logged by: Shawn Wiggins Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|---|
| 0            |                         |                   | 2.0/2.0                     | Top: 0.84<br>Bottom: 1.71                 | 0-2                         | 0-2': SILTY CLAY: very dark gray (10YR, 3/1), stiff, moist, rootlets at top, no odor, penetrometer: 2.0 T/sq. ft.   |
| 5            |                         |                   | 4.0/4.0                     | Top: 1.81<br>Middle: 3.61<br>Bottom: 3.62 | 2-6                         | 2-6': CLAY: with SILT: grades from very dark gray (10YR, 3/1) to pale brown (10YR, 6/3), medium stiff, slightly moist, orange and black mottling, no odor, penetrometer: 1.0-1.25 T/sq. ft.   |
| 10           |                         |                   | 4.0/4.0                     | Top: 3.58<br>Middle: 2.59<br>Bottom: 1.92 | 6-10                        | 6-8.8': SANDY CLAY: pale brown (10YR, 6/3), medium stiff, moist, black and orange mottling, fine sand increasing with depth, no odor, penetrometer: 1.5 T/sq. ft.<br>8.8-10': SILTY CLAYEY SAND: pale brown (10YR, 6/3), medium dense, slightly wet, orange and black mottling, fine sand, no odor, penetrometer: 1.5 T/sq. ft. |
| 15           |                         |                   | 4.0/4.0                     | Top: 3.00<br>Middle: 2.75<br>Bottom: 3.56 | 10-14                       | 10-12': CLAY: with fine SAND: mottled brown (10YR, 5/3) and reddish brown (5YR, 4/4), medium soft to medium stiff, moist, thin (less than 0.1') layer of shells at bottom, no odor, penetrometer: 1.75 T/sq. ft.<br>12-14': CLAY: brown (10YR, 5/3), stiff, slightly moist, no odor, penetrometer: 3.0 T/sq. ft.                |
| 20           |                         |                   | 4.0/4.0                     | Top: 3.38<br>Middle: 3.27<br>Bottom: 1.72 | 14-18                       | 14-17.3': CLAY: grayish brown (10YR, 5/2), stiff to medium soft, moist, minor silty clay lenses, orange mottling decreasing with depth, no odor, penetrometer: 1.25-2.25 T/sq. ft.<br>17.3-18': SILTY CLAY: grayish brown (10YR, 5/2), soft, wet, no odor, penetrometer: 1.25 T/sq. ft.   |
| 25           |                         |                   | 4.0/4.0                     | Top: 2.68<br>Middle: 2.51<br>Bottom: 1.81 | 18-22                       | 18-22': CLAY: gray (7.5Y, 5/1), medium stiff, slightly moist, blacker mineral staining near middle, orange mottling at top and bottom, no odor, penetrometer: 1.25-1.75 T/sq. ft.   |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.66<br>Middle: 1.71<br>Bottom: 1.77 | 22-26                       | 22-26': CLAY: brown (10YR, 5/3), stiff to very stiff, dry to slightly moist, minor orange mottling, no odor, penetrometer: 3.0-3.75 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 1.79<br>Middle: 1.84<br>Bottom: 1.89 | 26-30                       | 26-30': CLAY: brown (10YR, 5/3), grades from very stiff to medium stiff, slightly moist, minor orange and black mottling at bottom, no odor, penetrometer: 1.5-4.5 T/sq. ft.  |







| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|--|
| 30           |                         |                   |                             |   |                             | (Cont. from page 1)  |
| 30-34        |                         |                   | 4.0/4.0                     | Top: 1.90<br>Middle: 2.02<br>Bottom: 1.98 | 30-34                       | 30-34': CLAY: brown (10YR, 5/3), hard to very stiff, dry to slightly moist, orange mottling, minor white mineral concretions, no odor, penetrometer: 3.5-4.0 T/sq. ft.   |
| 34-38        |                         |                   | 4.0/4.0                     | Top: 1.84<br>Middle: 1.75<br>Bottom: 1.77 | 34-38                       | 34-34.7': CLAY: dark yellowish brown (10YR, 4/6), stiff, slightly moist, no odor, penetrometer: 2.75 T/sq. ft.<br>34.7-35.3': CLAYEY SILT: dark yellowish brown (10YR, 4/4), soft, slightly wet, no odor, penetrometer: 0.5 T/sq. ft.<br>35.3-38': CLAY: brown (10YR, 4/3), very stiff, slightly moist, no odor, penetrometer: 3.0 T/sq. ft.   |
| 38-42        |                         |                   | 4.0/4.0                     | Top: 1.84<br>Middle: 1.43<br>Bottom: 1.42 | 38-42                       | 38-42': CLAY: grades from dark yellowish brown (10YR, 4/4) to light yellowish brown (10YR, 6/4), very stiff to stiff, dry to slightly moist, minor silt content, no odor, penetrometer: 2.0-3.25 T/sq. ft.   |
| 42-46        |                         |                   | 3.4/4.0                     | Top: 1.47<br>Middle: 1.34<br>Bottom: 1.48 | 42-46                       | 42-45.4': SILTY CLAY: with fine SAND: brown (10YR, 5/3), medium stiff, slightly moist, orange mottling, increasing grain size with depth, no odor, penetrometer: 1.5 T/sq. ft.<br>45.4-46': NO RECOVERY  |
| 46-50        |                         |                   | 4.0/4.0                     | Top: 1.14<br>Middle: 0.93<br>Bottom: 0.55 | 46-50                       | 46-47.6': CLAYEY SILTY SAND: light brownish gray (2.5Y, 6/2), medium soft, wet, fine grained, no odor, penetrometer: 1.25 T/sq. ft.<br>47.6-49': CLAYEY SILT: light brownish gray (2.5Y, 6/2), medium stiff, moist, no odor, penetrometer: 0.75-1.25 T/sq. ft.<br>49-50': SAND: with SILT: dark grayish brown (2.5Y, 4/2), dense, wet, fine grained, no odor, penetrometer: 0.75 T/sq. ft.     |
| 50-54        |                         |                   | 3.0/4.0                     | Top: 1.03<br>Middle: 1.11<br>Bottom: 0.81 | 50-54                       | 50-50.6': SILTY SAND: dark greenish gray (GLE Y1, 4/10Y), medium dense, wet, fine grained, no odor, penetrometer: 1.0 T/sq. ft.<br>50.6-53': SANDY CLAY: dark greenish gray (GLE Y1, 4/10Y), medium stiff, moist to slightly wet in spots, slightly wet silty sand layers at 52.2-52.4' bgs, 52.5-52.6' bgs, and 52.7-53' bgs, no odor, penetrometer: 1.0-2.0 T/sq. ft.<br>53-54': NO RECOVERY |
| 54-58        |                         |                   | 4.0/4.0                     | Top: 0.77<br>Middle: 1.09<br>Bottom: 2.00 | 54-58                       | 54-57.5': SILTY SAND: dark grayish green (GLE Y1, 4/10Y), grades from unconsolidated to very dense, saturated to wet, minor clay content, fine grained sand with slight increase in grain size with depth, no odor, penetrometer: 0.25-0.5 T/sq. ft.<br>57.5-58': CLAY: very dark brown (10YR, 2/2), medium stiff, moist, high plasticity, no odor, penetrometer: 1.5 T/sq. ft.                |
| 58-62        |                         |                   | 4.0/4.0                     | Top: 2.28<br>Middle: 2.31<br>Bottom: 1.98 | 58-62                       | 58-62': CLAY: dark gray (10YR, 4/1), medium stiff, moist, high plasticity, some wood fragments interspersed at 59.9' bgs and 60.9-61.0' bgs, no odor, penetrometer: 1.5-2.0 T/sq. ft.  |
| 65           |                         |                   |                             |   |                             |  |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_CVX\Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

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- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

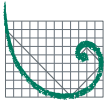
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-3

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 507710.19, 3328311.5

Surface Elev.: NM Boring T.D.: 62' Boring Dia.: 3.25

Date Started: 12/8/2021 Date Completed: 12/9/2021 Well Dia./Materials: 1" PVC Pre-Pack

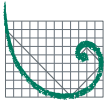
Drilling Company: Walker Hill Driller: Wanya Cook

Drilling Method: Direct Push - Geoprobe 3230DT Grouting Method: Portland

Logged by: Shawn Wiggins Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|---|
| 0            |                         |                   | 1.3/2.0                     | Top: .080<br>Bottom: 0.94                 | 0.6                     | 0-2                         | 0-1.3': SILTY CLAY: dark yellowish brown (10YR, 3/4), medium soft, moist, no odor, minor rootlets at top, penetrometer: 1.25 T/sq. ft.<br>1.3-2': NO RECOVERY   |
| 5            |                         |                   | 3.0/4.0                     | Top: 1.23<br>Middle: 2.14<br>Bottom: 2.81 | Top: 0.4<br>Bottom: 0.5 | 2-6                         | 2-5': CLAY: dark grayish brown (10YR, 4/2), medium stiff to medium soft, slightly moist, minor orange and black mottling, no odor, penetrometer: 1.0-1.5 T/sq. ft.<br>5-6': NO RECOVERY   |
| 10           |                         |                   | 4.0/4.0                     | Top: 2.66<br>Middle: 3.16<br>Bottom: 2.60 | Top: 0.7<br>Bottom: 0.7 | 6-10                        | 6-8': CLAY: grayish brown (10YR, 5/2), medium stiff, slightly moist, minor orange mottling, no odor, penetrometer: 1.75 T/sq. ft.<br>8-8.7': SILTY CLAY: grayish brown (10YR, 5/2), very soft, wet, no odor, penetrometer: 0.0 T/sq. ft.<br>8.7-10': CLAY: grayish brown (10YR, 5/2), stiff to very stiff, slightly moist, no odor, penetrometer: 3.5 T/sq. ft. |
| 15           |                         |                   | 4.0/4.0                     | Top: 2.43<br>Middle: 3.23<br>Bottom: 3.46 | Top: 0.5<br>Bottom: 0.4 | 10-14                       | 10-14': CLAY: grayish brown (10YR, 5/2), stiff, slightly moist, minor orange and black mottling, some silt content near top, reddish brown mineral concretion at 11.0' bgs, no odor, penetrometer: 2.0-2.25 T/sq. ft.   |
| 20           |                         |                   | 4.0/4.0                     | Top: 3.56<br>Middle: 2.07<br>Bottom: 2.24 | Top: 0.8<br>Bottom: 0.7 | 14-18                       | 14-18': CLAY: grayish brown (10YR, 5/2), grades from stiff to medium stiff, moist to slightly wet, medium soft clayey silt lenses at 16.4-16.6' bgs, 17.0-17.1' bgs, and 17.3-17.4'; bgs, no odor, penetrometer: 1.25-1.75 T/sq. ft.  |
| 25           |                         |                   | 4.0/4.0                     | Top: 2.01<br>Middle: 1.72<br>Bottom: 1.63 | Top: 1.0<br>Bottom: 0.3 | 18-22                       | 18-22': CLAY: grades from very dark grayish brown (10YR, 3/2) to grayish brown (10YR, 5/2), medium soft, moist, orange mottling at bottom, no odor, penetrometer: 0.75-1.0 T/sq. ft.  |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.77<br>Middle: 1.62<br>Bottom: 1.81 | NM                      | 22-26                       | 22-26': CLAY: gray (2.5Y, 6/1), grades from medium soft to stiff, moist, minor silt content, no odor, penetrometer: 0.75-3.25 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 1.75<br>Middle: 1.86<br>Bottom: 1.98 | NM                      | 26-30                       | 26-30': CLAY: dark gray (2.5Y, 4/1), very stiff, slightly moist, no odor, penetrometer: 3.5 T/sq. ft.   |







| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM) | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------|-----------------------------|--|
| 30           |                         |                   |                             |   |           |                             | (Cont. from page 1)  |
|              |                         |                   | 4.0/4.0                     | Top: 1.82<br>Middle: 1.81<br>Bottom: 1.18 | NM        | 30-34                       | 30-34': CLAY: dark gray (2.5Y, 4/1), stiff, slightly moist, white mineral concretions, some silt content at bottom, extensive brown mottling, no odor, penetrometer: 2.25-3.25 T/sq. ft.   |
| 35           |                         |                   | 4.0/4.0                     | Top: 1.63<br>Middle: 1.43<br>Bottom: 1.41 | NM        | 34-38                       | 34-36': CLAY: yellowish brown (10YR, 5/4), medium soft, slightly moist, silty clay lenses at 35.1-35.2' bgs and 35.5-35.7' bgs, no odor, penetrometer: 1.25 T/sq. ft.<br>36-37.5': CLAYEY SILT: yellowish brown (10YR, 5/4), soft, slightly wet, no odor, penetrometer: 0.25 T/sq. ft.<br>37.5-38': SILTY CLAY: yellowish brown (10YR, 5/4), medium stiff, moist, no odor, penetrometer: 1.5 T/sq. ft. |
| 40           |                         |                   | 4.0/4.0                     | Top: 1.52<br>Middle: 1.82<br>Bottom: 2.34 | NM        | 38-42                       | 38-38.5': CLAYEY SILT: yellowish brown (10YR, 5/4), soft, moist, no odor, penetrometer: 0.0 T/sq. ft.<br>38.5-42': CLAY: dark yellowish brown (10YR, 5/4), stiff, slightly moist to dry, no odor, penetrometer: 2.5-3.5 T/sq. ft.  |
| 45           |                         |                   | 4.0/4.0                     | Top: 2.16<br>Middle: 2.33<br>Bottom: 2.03 | NM        | 42-46                       | 42-46': CLAY: gray (5Y, 5/1), very stiff, slightly moist, minor orange mottling, no odor, penetrometer: 3.25-4.5 T/sq. ft.   |
| 50           |                         |                   | 4.0/4.0                     | Top: 2.10<br>Middle: 2.19<br>Bottom: 1.82 | NM        | 46-50                       | 46-50': CLAY: very dark gray (5Y, 3/1), very stiff, dry to slightly moist, minor orange mottling, no odor, penetrometer: 3.25-3.75 T/sq. ft.   |
| 55           |                         |                   | 4.0/4.0                     | Top: 2.25<br>Middle: 2.01<br>Bottom: 2.73 | NM        | 50-54                       | 50-54': CLAY: very dark gray (5Y, 3/1), stiff, slightly moist, sandy clay clay lense at 52.5-52.6' with slightly moist very fine sand components, no odor, penetrometer: 2.0-3.5 T/sq. ft.   |
| 60           |                         |                   | 4.0/4.0                     | Top: 3.06<br>Middle: 2.75<br>Bottom: 2.69 | NM        | 54-58                       | 54-58': CLAY: very dark gray (5Y, 3/1), stiff, slightly moist, minor orange mottling, no odor, penetrometer: 2.75 T/sq. ft.  |
| 65           |                         |                   | 4.0/4.0                     | Top: 2.41<br>Middle: 2.32<br>Bottom: 2.28 | NM        | 58-62                       | 58-62': CLAY: very dark gray (5Y, 3/1), medium stiff to medium soft, moist, wood fragments interspersed within clay increasing with depth, no odor, penetrometer: 1.0-1.5 T/sq. ft.  |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_(CVX)\_Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

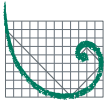
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-4

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 507844.65, 3328348.5

Surface Elev.: NM Boring T.D.: 62' Boring Dia.: 3.25"

Date Started: 12/8/2021 Date Completed: 12/8/2021 Well Dia./Materials: 1" PVC Pre-Pack

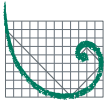
Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 3230DT Grouting Method: Portland

Logged by: Shawn Wiggins Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 0            |                         |                   | 1.6/2.0                     | Top: 0.68<br>Bottom: 1.13                 | 0.2                     | 0-2                         | 0-1.6': CLAY: very dark brown (10YR, 2/2), slightly moist, medium stiff to stiff, no odor, reddish sand layer at 0.5' bgs, penetrometer: 2.0 T/sq. ft.<br>1.6-2': NO RECOVERY  |
| 5            |                         |                   | 4.0/4.0                     | Top: 1.33<br>Middle: 2.02<br>Bottom: 2.12 | Top: 0.3<br>Bottom: 0.4 | 2-6                         | 2-6': CLAY: brown (10YR, 5/3), medium stiff, slightly moist, no odor, orange mottling, penetrometer: 1.0-1.5 T/sq. ft.   |
| 10           |                         |                   | 4.0/4.0                     | Top: 1.93<br>Middle: 2.05<br>Bottom: 2.14 | Top: 0.4<br>Bottom: 0.7 | 6-10                        | 6-10': CLAY: brown (10YR, 5/3), grades from medium stiff to stiff, moist to slightly moist, no odor, light orange mottling at top and dark orange mottling at bottom, penetrometer: 0.5-2.0 T/sq. ft.  |
| 15           |                         |                   | 4.0/4.0                     | Top: 3.03<br>Middle: 2.28<br>Bottom: 2.95 | Top: 1.0<br>Bottom: 0.5 | 10-14                       | 10-10.4': CLAY: grayish brown (10YR, 5/2), stiff, moist, penetrometer: 1.5 T/sq. ft.<br>10.4-10.9': CLAY: grayish brown (10YR, 5/2), medium soft, moist, no odor, with abundant shells, penetrometer: 1.5 T/sq. ft.<br>10.9-14': CLAY: brown (10YR, 5/3), stiff, slightly moist, no odor, penetrometer: 2.5 T/sq. ft.  |
| 20           |                         |                   | 4.0/4.0                     | Top: 3.13<br>Middle: 3.23<br>Bottom: 3.43 | Top: 2.5<br>Bottom: 0.4 | 14-18                       | 14-15.1': CLAY: light grayish brown (10YR, 6/2), stiff, slightly moist, no odor, moist silty lense at 14.4-14.5' bgs, penetrometer: 1.5 T/sq. ft.<br>15.1-15.5': SILTY CLAY: brown (10YR, 5/3), soft, slightly wet, no odor, penetrometer: 0.0 T/sq. ft.<br>15.5-18': CLAY: grades from brown (10YR, 5/3) to dark grayish brown (10YR, 4/2), stiff, moist, no odor, silty clay lenses at 16.2-16.4' bgs and 17.3-17.4' bgs, penetrometer: 1.75 T/sq. ft. |
| 25           |                         |                   | 4.0/4.0                     | Top: 2.48<br>Middle: 2.45<br>Bottom: 2.20 | Top: 0.3<br>Bottom: 0.6 | 18-22                       | 18-22': CLAY: gray (10YR, 6/1), medium soft to stiff, slightly moist, orange mottling, mineral nodules at 19.0-20.0' bgs, no odor, penetrometer: 0.5-2.25 T/sq. ft.  |
| 30           |                         |                   | 3.3/4.0                     | Top: 2.72<br>Middle: 2.49<br>Bottom: 2.33 | Top: 0.3<br>Bottom: 0.5 | 22-26                       | 22-25.3': CLAY: brown (10YR, 5/3), very stiff, dry to slightly moist, orange and black mineral mottling, mineral concretions at 24.1' bgs, no odor, penetrometer: 3.25 T/sq. ft.<br>25.3-26': NO RECOVERY  |
|              |                         |                   | 3.7/4.0                     | Top: 2.36<br>Middle: 2.29<br>Bottom: 2.26 | Top: 0.2<br>Bottom: 0.1 | 26-30                       | 26-29.7': CLAY: brown (7.5YR, 5/3), very stiff, dry to slightly moist, minor orange mottling, minor silt content, no odor, penetrometer: 3.0-3.25 T/sq. ft.<br>29.7-30': NO RECOVERY   |
|              |                         |                   |                             |   |                         |                             |  |







| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 30           |                         |                   |                             |   |                         |                             | (Cont. from page 1)  |
| 30-31'       |                         |                   | 3.7/4.0                     | Top: 2.31<br>Middle: 2.52<br>Bottom: 2.49 | Top: 0.2<br>Bottom: 0.4 | 30-34                       | 30-31': CLAY: brown (7.5YR, 5/3), very stiff, dry, no odor, penetrometer: 3.5 T/sq. ft.<br>31-32': SILTY CLAY: brown (7.5YR, 5/3), soft, slightly moist, no odor, penetrometer: 1.0 T/sq. ft.<br>32-33.7': CLAY: grades from light brownish gray (10YR, 6/2) to brown (7.5YR, 5/4), medium stiff to stiff, slightly moist, black mineral concretions at 33.0' bgs, no odor, penetrometer: 1.5-2.75 T/sq. ft.<br>33.7-34': NO RECOVERY        |
| 35           |                         |                   | 4.0/4.0                     | Top: 2.65<br>Middle: 2.72<br>Bottom: 2.78 | Top: 0.8<br>Bottom: 0.5 | 34-38                       | 34-35.2': CLAY: yellowish brown (10YR, 5/4), medium soft, slightly moist, no odor, penetrometer: 0.75 T/sq. ft.<br>35.2-36.1': SILTY CLAY: dark yellowish brown (10YR, 4/6), soft, slightly moist, no odor, penetrometer: 0.75 T/sq. ft.<br>36.1-38': CLAY: dark yellowish brown (10YR, 3/4), stiff, dry to slightly moist, no odor, penetrometer: 2.75 T/sq. ft.  |
| 40           |                         |                   | 4.0/4.0                     | Top: 2.52<br>Middle: 2.67<br>Bottom: 2.46 | Top: 0.6<br>Bottom: 0.9 | 38-42                       | 38-42': CLAY: dark grayish brown (2.5Y, 4/2), very stiff, dry to slightly moist, orange mottling, no odor, penetrometer: 3.5 T/sq. ft.   |
| 45           |                         |                   | 3.5/4.0                     | Top: 2.24<br>Middle: 1.87<br>Bottom: 1.84 | Top: 1.4<br>Bottom: 1.3 | 42-46                       | 42-44.8': CLAY: yellowish brown (10YR, 5/4), stiff, moist, orange mottling, no odor, penetrometer: 2.75 T/sq. ft.<br>44.8-45.5': SILTY CLAY to CLAYEY SILT: yellowish brown (10YR, 5/4), medium soft, moist, no odor, penetrometer: 1.0 T/sq. ft.<br>45.5-46': NO RECOVERY   |
| 50           |                         |                   | 4.0/4.0                     | Top: 2.04<br>Middle: 1.99<br>Bottom: 2.46 | Top: 1.5<br>Bottom: 1.6 | 46-50                       | 46-46.6': CLAYEY SILT: yellowish brown (10YR, 5/4), soft, moist to very slightly wet, no odor, penetrometer: 0.0 T/sq. ft.<br>46.6-48.2': SILTY CLAY: yellowish brown (10YR, 5/4), medium soft to medium stiff, moist, minor orange and black mottling, no odor, penetrometer: 0.75 T/sq. ft.<br>48.2-50': CLAY: yellowish brown (10YR, 5/4), stiff, moist, minor silt content, minor orange mottling, no odor, penetrometer: 1.75 T/sq. ft. |
| 55           |                         |                   | 4.0/4.0                     | Top: 2.35<br>Middle: 1.87<br>Bottom: 3.01 | Top: 1.5<br>Bottom: 2.2 | 50-54                       | 50-54': CLAY: brown (10YR, 5/3), stiff, slightly moist, orange mottling, no odor, penetrometer: 2.0-2.5 T/sq. ft.  |
| 55           |                         |                   | 4.0/4.0                     | Top: 2.53<br>Middle: 2.47<br>Bottom: 1.51 | Top: 2.6<br>Bottom: 2.8 | 54-58                       | 54-58': CLAY: dark gray (10YR, 4/1) with extensive brown (10YR, 4/3) mottling, very stiff, moist, no odor, penetrometer: 3.0-3.5 T/sq. ft.   |
| 60           |                         |                   | 4.0/4.0                     | Top: 2.23<br>Middle: 2.14<br>Bottom: 1.76 | Top: 2.1<br>Bottom: 2.1 | 58-62                       | 58-62': CLAY: dark yellowish brown (10YR, 4/4), very stiff, slightly moist, very thin silt lenses at 60.5-60.7' bgs, no odor, penetrometer: 3.0-4.5 T/sq. ft.  |
| 65           |                         |                   |                             |   |                         |                             |  |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_CVX\Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

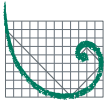
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-5

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM 15N 507937.43, 3328245.4

Surface Elev.: NM Boring T.D.: 60' Boring Dia.: 2.25"

Date Started: 11/30/2021 Date Completed: 11/30/2021 Well Dia./Materials: 3/4" PVC Pre-Pack

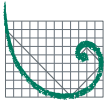
Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 0            |                         |                   |                             |   |                         |                             |  |
| 0-4          |                         |                   | 2.0/4.0                     | Top: 0.75<br>Bottom: 1.98                 | Top: 1.9<br>Bottom: 2.2 | 0-4                         | 0-2': CLAY: brown (7.5YR, 5/2), slightly moist to dry, medium soft, good plasticity, silty at top, no odor penetrometer: 0.75- 1.5 T/sq. ft.<br>2-4': NO RECOVERY  |
| 4-8          |                         |                   | 3.6/4.0                     | Top: 2.02<br>Middle: 2.26<br>Bottom: 2.09 | Top: 3.9<br>Bottom: 2.2 | 4-8                         | 4-6': CLAY: light yellowish brown (10YR, 6/4), dry, medium soft, good plasticity, little silt, no odor, penetrometer: 1.5 T/ sq. ft.<br>6-7.6': CLAY: reddish yellow (5YR, 6/6) to light gray, mottled, dry, stiff, very silty at top, no odor, penetrometer: 2.5 T/sq. ft.<br>7.6-8': NO RECOVERY |
| 8-12         |                         |                   | 4.0/4.0                     | Top: 1.62<br>Middle: 1.59<br>Bottom: 2.46 | Top: 4.6<br>Bottom: 2.6 | 8-12                        | 8-10.5': SILTY CLAY: red (2.5YR, 5/6), slightly moist where silty, stiff clay with softer silt lenses, no odor, penetrometer: 2.5 T/sq. ft.<br>10.5-12': CLAY: yellow (10YR, 7/6) to light gray, mottled, dry, stiff, with crushed shells at 11 feet, no odor, 1.75 T/sq. ft.                      |
| 12-16        |                         |                   | 4.0/4.0                     | Top: 2.33<br>Middle: 2.45<br>Bottom: 2.37 | Top: 3.2<br>Bottom: 2.9 | 12-16                       | 12-16': CLAY: very pale brown (10YR, 7/4) to light gray, mottled, dry, medium stiff to stiff, medium plasticity, no odor, penetrometer: 2.75 T/sq. ft.   |
| 16-20        |                         |                   | 4.0/4.0                     | Top: 2.58<br>Middle: 2.53<br>Bottom: 2.61 | Top: 3.8<br>Bottom: 3.6 | 16-20                       | 16-20': CLAY: very pale brown (10YR, 7/4) to light gray, mottled, dry, medium stiff to stiff, medium plasticity, little silt, no odor, penetrometer: 2.25-2.5 T/sq. ft.  |
| 20-24        |                         |                   | 4.0/4.0                     | Top: 1.97<br>Middle: 1.82<br>Bottom: 1.91 | Top: 1.9<br>Bottom: 2.4 | 20-24                       | 20-24': CLAY: very pale brown (10YR, 7/4), dry, medium stiff, good plasticity, no odor, penetrometer: 2.75-3.0 T/sq. ft.   |
| 24-26        |                         |                   | 4.0/2.0                     | Top: 2.10<br>Bottom: 2.09                 | 2.7                     | 24-26                       | 24-26': CLAY: very pale brown (10YR, 7/4), dry, medium stiff, good plasticity, no odor, penetrometer: 2.75 T/sq. ft.   |
| 26-28        |                         |                   | 4.0/2.0                     | Top: 2.00<br>Bottom: 2.33                 | 3.5                     | 26-28                       | 26-28': CLAY: very pale brown (10YR, 7/4), dry, very stiff, poor plasticity, no odor, penetrometer: 4.5 T/sq. ft.  |
| 28-30        |                         |                   | 4.0/2.0                     | Top: 2.29<br>Bottom: 2.56                 | 2.7                     | 28-30                       | 28-30': CLAY: very pale brown (10YR, 7/4), dry, very stiff, slightly softer, poor plasticity, no odor, penetrometer: 3.0 T/sq. ft.   |
| 30           |                         |                   |                             |   |                         |                             |  |







Project No.: 0526033 Date Drilled: 11/30/2021

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|---|
| 30           |                         |                   |                             |   |                         |                             | (Cont. from page 1)   |
|              |                         |                   | 4.0/2.0                     | Top: 2.50<br>Bottom: 2.57                 | 3.2                     | 30-32                       | 30-32': CLAY: very pale brown (10YR, 7/4), dry, very stiff, slightly softer, poor plasticity, no odor, with sparse concretions, penetrometer: 2.75 T/sq. ft.  |
|              |                         |                   | 2.0/2.0                     | Top: 2.06<br>Bottom: 2.01                 | 2.8                     | 32-34                       | 32-34': CLAYEY SILT: light yellowish brown (10YR, 6/4), wet, soft, sticky, no odor, penetrometer: 0.5 T/sq. ft.   |
| 35           |                         |                   | 3.5/2.0                     | Top: 1.81<br>Bottom: 2.12                 | 2.7                     | 34-36                       | 34-35': CLAYEY SILT: light yellowish brown (10YR, 6/4), moist, soft, sticky, no odor, penetrometer: 0.75 t/sq. ft.<br>35-36': CLAY: yellowish brown (10YR, 5/4), dry, stiff, poor plasticity, no odor, penetrometer: 2.75 T/sq. ft. |
|              |                         |                   | 4.0/2.0                     | Top: 1.95<br>Bottom: 2.22                 | 2.1                     | 36-38                       | 36-38': CLAY: yellowish brown (10YR, 5/4), dry, stiff, poor plasticity, no odor, penetrometer: 3.25 T/sq. ft.   |
|              |                         |                   | 4.0/2.0                     | Top: 2.69<br>Bottom: 2.48                 | 2.2                     | 38-40                       | 38-40': CLAY: yellowish brown (10YR, 6/4), dry, stiff, poor plasticity, no odor, penetrometer: 3.25 T/sq. ft.   |
| 40           |                         |                   | 4.0/2.0                     | Top: 2.35<br>Bottom: 2.61                 | 1.6                     | 40-42                       | 40-42': CLAY: light brownish gray (10YR, 6/2), dry, stiff, poor plasticity, no odor, penetrometer: 3.25 T/sq. ft.   |
|              |                         |                   | 4.0/2.0                     | Top: 2.52<br>Bottom: 2.34                 | 1.3                     | 42-44                       | 42-44': CLAY: light brownish gray (10YR, 6/2), dry, very stiff, poor plasticity, no odor, penetrometer: 3.75 T/sq. ft.  |
| 45           |                         |                   | 4.0/4.0                     | Top: 1.93<br>Middle: 1.71<br>Bottom: 2.52 | Top: 1.4<br>Bottom: 2.6 | 44-48                       | 44-48': CLAY: brown (7.5YR, 5/3), dry, stiff, medium to good plasticity, no odor, bluish gray and brown at base, penetrometer: 2.25 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 2.63<br>Middle: 2.66<br>Bottom: 2.27 | Top: 3.0<br>Bottom: 2.6 | 48-52                       | 48-52': CLAY: greenish gray (GLEY, 6/10Y), dry, stiff, medium to poor plasticity, no odor, penetrometer: 2.5 T/sq. ft.  |
| 50           |                         |                   | 4.0/4.0                     | Top: 1.83<br>Middle: 1.44<br>Bottom: 1.52 | Top: 3.2<br>Bottom: 2.6 | 52-56                       | 52-56': SILTY CLAY: light olive brown (2.5Y, 5/4), dry, stiff to medium stiff, medium to good plasticity, no odor, penetrometer: 1.75-2.75 T/sq. ft.  |
|              |                         |                   | 4.0/2.0                     | Top: 1.61<br>Bottom: 1.44                 | 2.2                     | 56-58                       | 56-58': SILTY CLAY: light greenish gray (GLEY1, 7/10Y), dry, very silty, medium stiff, large silt grains, no odor, penetrometer: 2.25 T/sq. ft.   |
|              |                         |                   | 2.7/2.0                     | Top: 1.21<br>Bottom: 1.29                 | 2.8                     | 58-60                       | 58-60': SILTY CLAY: light greenish gray (GLEY1, 7/10Y), dry, very silty, medium stiff, large silt grains, no odor, trace fine sand, penetrometer: 1.5 T/sq. ft.   |
| 60           |                         |                   |                             |   |                         |                             |   |
| 65           |                         |                   |                             |   |                         |                             |   |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_CVX\Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

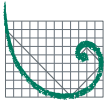
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-6

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM 15N 508137.47, 3328271.9

Surface Elev.: NM Boring T.D.: 40' Boring Dia.: 3.25"

Date Started: 11/18/2021 Date Completed: 11/18/2021 Well Dia./Materials: 1" Pre-Pack PVC

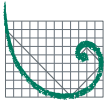
Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)             | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------|-----------------------------|--|
| 0            |                         |                   | 2.3/4.0                     | Top: 1.70<br>Bottom: 2.42                 | 0.1                   | 0-4                         | 0-2.3': SILTY CLAY: very dark gray (10YR, 3/1) , medium soft, dry, good plasticity, no odor, shells at top, penetrometer: 2.25 T/sq. ft.<br><br>2.3-4': NO RECOVERY  |
| 5            |                         |                   | 4.0/4.0                     | Top: 3.03<br>Middle: 3.06<br>Bottom: 3.53 | 0.1                   | 4-8                         | 4-8': CLAY: brownish yellow (10YR, 6/6) to light gray, mottled, medium stiff, dry, medium plasticity, no odor, some silt, penetrometer: 2.0-2.25 T/sq. ft.   |
| 10           |                         |                   | 4.0/4.0                     | Top: 3.22<br>Middle: 3.26<br>Bottom: 4.05 | Top: 0.1<br>Bottom: 0 | 8-12                        | 8-9': CLAY: brownish yellow (10YR, 6/6) to light gray, mottled, medium stiff, dry, medium plasticity, no odor, some silt, penetrometer: 2.25 T/sq. ft.<br>9-12': SILTY CLAY: yellowish red (5YR, 5/6) to light gray, mottled, soft, slightly moist to dry, silts interbedded with stiff clay, shell fragments at bottom, penetrometer: 0.5-3.0 T/sq. ft. |
| 15           |                         |                   | 4.0/4.0                     | Top: 4.16<br>Middle: 4.55<br>Bottom: 3.83 | Top: 0<br>Bottom: 0.1 | 12-16                       | 12-16': CLAY: yellow brown (10YR, 5/6) to light gray, mottled, stiff, dry, poor plasticity, no odor, silty at top, penetrometer: 3.0-3.5 T/sq. ft.   |
| 20           |                         |                   | 4.0/4.0                     | Top: 3.92<br>Middle: 4.66<br>Bottom: 4.73 | Top: 0.1<br>Bottom: 0 | 16-20                       | 16-20': SILTY CLAY: gray (10YR, 5/1), moist, soft silt interbedded with firm dry clays, no odor, more clay at base, penetrometer: 1.5-1.75 T/sq. ft.   |
| 25           |                         |                   | 4.0/4.0                     | Top: 2.49<br>Middle: 2.81<br>Bottom: 2.70 | 0.1                   | 20-24                       | 20-24': CLAY: gray (10YR, 5/1), stiff, dry, medium plasticity, no odor, some concretions at top, penetrometer: 2.5-3.0 T/ sq. ft.  |
| 25           |                         |                   | 4.0/4.0                     | Top: 2.15<br>Middle: 2.05<br>Bottom: 2.09 | Top: 0.1<br>Bottom: 0 | 24-28                       | 24-28': CLAY: gray (10YR, 5/1), stiff, dry, poor plasticity, no odor, some concretions at top, penetrometer: 2.5-3.75 T/sq. ft.  |
| 30           |                         |                   | 4.0/4.0                     | Top: 2.56<br>Middle: 2.38<br>Bottom: 2.31 | 0                     | 28-32                       | 28-32': CLAY: gray (10YR, 5/1), stiff, dry, poor plasticity, no odor, some concretions at top, penetrometer: 3.0 T/sq. ft.   |







Project No.:                      0526033                      Date Drilled:                      11/18/2021

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM) | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------|-----------------------------|---|
| 30           |                         |                   | 4.0/4.0                     | Top: 2.56<br>Middle: 2.38<br>Bottom: 2.31 | 0         | 28-32                       | (Cont. from page 1)<br>28-32': CLAY: gray (10YR, 5/1), stiff, dry, poor plasticity, no odor, some concretions at top, penetrometer: 3.0 T/sq. ft. |
| 35           |                         |                   | 4.0/4.0                     | Top: 2.32<br>Middle: 2.57<br>Bottom: 2.50 | 0         | 32-36                       | 32-36': SILTY CLAY: light olive brown (2.5Y, 5/4), medium soft, slightly moist to dry, good plasticity, penetrometer: 1.0-1.75 T/sq. ft.          |
|              |                         |                   | 3.3/2.0                     | Top: 2.34<br>Bottom: 2.00                 | 0.1       | 36-38                       | 36-38': CLAYEY SILT: brown (10YR, 4/3), medium soft, moist, good plasticity, clay at top, penetrometer: 1.0 T/sq. ft.                             |
| 40           |                         |                   | 3.5/2.0                     | Top: 2.14<br>Bottom: 2.36                 | 0         | 38-40                       | 38-40': CLAYEY SILT: brown (10YR, 4/3), soft, wet, good plasticity, clay at bottom, penetrometer: 0.5 T/sq. ft.                                   |
| 45           |                         |                   |                             |   |           |                             |   |
| 50           |                         |                   |                             |   |           |                             |   |
| 55           |                         |                   |                             |   |           |                             |   |
| 60           |                         |                   |                             |   |           |                             |   |
| 65           |                         |                   |                             |   |           |                             |   |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_CVX\Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

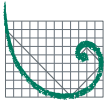
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
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# ERM Environmental Resources Management

Boring/Well No.: MW-8

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 508217.59, 3327817.3

Surface Elev.: NM Boring T.D.: 54' Boring Dia.: 3.25"

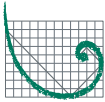
Date Started: 12/14/2021 Date Completed: 12/14/2021 Well Dia./Materials: 1" PVC Pre-Pack

Drilling Company: Walker Hill Driller: Wanya Cook

Drilling Method: Direct Push - Geoprobe 3230DT Grouting Method: Portland

Logged by: Shawn Wiggins Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 0            |                         |                   | 2.0/2.0                     | Top: 0.76<br>Bottom: 1.15                 | 0.1                     | 0-2                         | 0-2': SILTY CLAY: very dark brown (10YR, 2/2), medium soft, dry to slightly moist, rootlets at top, no odor, penetrometer: 1.0 T/sq. ft.   |
| 5            |                         |                   | 4.0/4.0                     | Top: 1.42<br>Middle: 2.11<br>Bottom: 2.18 | Top: 0.2<br>Bottom: 0.3 | 2-6                         | 2-6': CLAY: grayish brown (10YR, 5/2), medium stiff, moist, orange mottling increasing with depth, no odor, penetrometer: 1.25-1.5 T/sq. ft.   |
| 10           |                         |                   | 4.0/4.0                     | Top: 1.53<br>Middle: 2.00<br>Bottom: 1.95 | Top: 0.3<br>Bottom: 0.3 | 6-10                        | 6-10': CLAY: mottled reddish brown (5YR, 4/4), medium soft to stiff, slightly moist, clayey silt layers at 6.0-6.2' bgs, 6.4-6.5' bgs, 7.2' bgs, 7.3' bgs, 7.9' bgs, and 8.8-9.0' bgs, abundant shells at 9.6-10.0' bgs, no odor, penetrometer: 0.5-2.25 T/sq. ft.   |
| 15           |                         |                   | 4.0/4.0                     | Top: 3.03<br>Middle: 3.37<br>Bottom: 3.34 | Top: 0.2<br>Bottom: 0.2 | 10-14                       | 10-14': CLAY: grades from yellowish brown (10YR, 5/6), to brown (10YR, 5/3), very stiff to stiff, slightly moist, some black mottling near the top, no odor, penetrometer: 2.75-3.25 T/sq. ft.   |
| 20           |                         |                   | 4.0/4.0                     | Top: 3.16<br>Middle: 3.09<br>Bottom: 3.30 | Top: 0.2<br>Bottom: 0.2 | 14-18                       | 14-18': CLAYEY SILT: alternating with CLAY: yellowish brown (10YR, 5/4), clay is medium stiff and moist, clayey silt is very soft and slightly wet, clayey silt at 14.8-14.9' bgs, 15.2-15.3' bgs, 15.7-16.0' bgs, 16.1-16.2' bgs, 16.6-16.7' bgs, 16.9-17.1' bgs, and 17.5-17.6' bgs, no odor, penetrometer: 0-1.75 T/sq. ft. |
| 25           |                         |                   | 4.0/4.0                     | Top: 3.12<br>Middle: 1.92<br>Bottom: 1.95 | Top: 0.3<br>Bottom: 0.3 | 18-22                       | 18-22': CLAY: light yellowish brown (10YR, 6/4), medium soft to stiff, moist, minor mineral concretions, abundant orange mottling, no odor, penetrometer: 0.5-2.0 T/sq. ft.  |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.84<br>Middle: 1.96<br>Bottom: 1.98 | Top: 0.1<br>Bottom: 0.1 | 22-26                       | 22-26': CLAY: yellowish brown (10YR, 5/4), medium stiff, moist, minor silt content, minor black mineral concretions, no odor, penetrometer: 1.5-1.75 T/sq. ft.   |
| 30           |                         |                   | 4.0/4.0                     | Top: 2.40<br>Middle: 2.28<br>Bottom: 2.10 | Top: 0.0<br>Bottom: 0.0 | 26-30                       | 26-30': CLAY: dark yellowish brown (10YR, 4/6), hard, slightly moist, mineral concretions at 29.1' bgs, no odor, penetrometer: 4.25 T/sq. ft.  |





Project No.: 0526033 Date Drilled: 12/14/2021

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 30           |                         |                   |                             |   |                         |                             | (Cont. from page 1)  |
| 30-33.2'     |                         |                   | 4.0/4.0                     | Top: 2.00<br>Middle: 2.20<br>Bottom: 1.55 | Top: 0.1<br>Bottom: 0.2 | 30-34                       | 30-33.2': CLAY: with SILT: yellowish brown (10 YR, 5/4), very stiff, moist, silty clay at 30.5-30.6' bgs, 31.6-32.0' bgs, 32.7-32.9' bgs, no odor, penetrometer: 4.0 T/sq. ft.<br>33.2-34': SANDY CLAYEY SILT: yellowish brown (10YR, 5/4), medium soft, moist to slightly wet, no odor, penetrometer: 1.5 T/sq. ft. |
| 34-35'       |                         |                   | 4.0/4.0                     | Top: 2.00<br>Middle: 2.27<br>Bottom: 2.29 | Top: 0.4<br>Bottom: 0.4 | 34-38                       | 34-35': SILTY CLAY: yellowish brown (10YR, 5/4), medium soft, moist, no odor, penetrometer: 0.75 T/sq. ft.<br>35-38': CLAY: grades from brown (10YR, 5/3) to dark yellowish brown (10YR, 4/4), stiff, slightly moist, no odor, penetrometer: 3.25 T/sq. ft.  |
| 38-42'       |                         |                   | 4.0/4.0                     | Top: 2.01<br>Middle: 2.48<br>Bottom: 2.20 | Top: 0.1<br>Bottom: 0.3 | 38-42                       | 38-42': CLAY: grades from yellowish brown (10YR, 5/6) to brown (10YR, 5/3), very stiff, slightly moist, no odor, penetrometer: 3.0-3.25 T/sq. ft.  |
| 42-46'       |                         |                   | 4.0/4.0                     | Top: 2.51<br>Middle: 2.29<br>Bottom: 1.38 | Top: 0.2<br>Bottom: 0.6 | 42-46                       | 42-46': CLAY: brown (10YR, 4/3), very stiff, moist, some silt content near bottom, orange mottling, no odor, penetrometer: 3.25-3.5 T/sq. ft.  |
| 46-50'       |                         |                   | 4.0/4.0                     | Top: 1.79<br>Middle: 1.29<br>Bottom: 2.70 | Top: 0.1<br>Bottom: 0.1 | 46-50                       | 46-50': SILTY CLAY: yellowish brown (10YR, 5/4), stiff, moist, wet silt layer at 47.8-48.0' bgs, no odor, penetrometer: 2.5-3.0 T/sq. ft.  |
| 50-52'       |                         |                   | 4.0/4.0                     | Top: NM<br>Middle: 2.12<br>Bottom: 1.87   | Top: NM<br>Bottom: 0.1  | 50-54                       | 50-52': CLAY: observed at top and bottom, sealed for geotechnical analysis<br>52-54': CLAY: brown (10YR, 5/3), stiff, moist, mineral concretions at 53.3' bgs, orange mottling, no odor, penetrometer: 2.75 T/sq. ft.  |
| 55           |                         |                   |                             |   |                         |                             |  |
| 60           |                         |                   |                             |   |                         |                             |  |
| 65           |                         |                   |                             |   |                         |                             |  |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_CVX\Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.



**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: ( \_\_\_\_\_ ) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

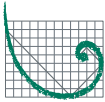
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-7

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al.

Project No.: 0526033

Location: Hayes, LA

Coordinates: UTM N15 508221.24, 3328165.12

Surface Elev.: NM Boring T.D.: 44' Boring Dia.: 3.25"

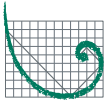
Date Started: 11/29/2021 Date Completed: 11/29/2021 Well Dia./Materials: 1" PVC Pre-Pack

Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner



| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 0            |                         |                   |                             |   |                         |                             |  |
| 0-4          |                         |                   | 3.6/4.0                     | Top: 1.05<br>Middle: 1.78<br>Bottom: 2.29 | Top: 0.9<br>Bottom: 0.5 | 0-4                         | 0-2': SILTY CLAY: light yellowish brown (2.5Y, 6/4), dry, medium stiff, crumbly, no odor, penetrometer: 2.75 T/sq. ft.<br>2-3.6': CLAY: light yellowish brown (2.5Y, 6/4), dry, medium soft, good plasticity, no odor, little gravel at 3' bgs, penetrometer: 2.0 T/sq. ft.<br>3.6-4': NO RECOVERY |
| 4-8          |                         |                   | 4.0/4.0                     | Top: 2.08<br>Middle: 2.13<br>Bottom: 2.96 | Top: 2.4<br>Bottom: 1.4 | 4-8                         | 4-8': CLAY: light yellowish gray (5YR, 5/6) to yellowish red, dry, stiff, medium to poor plasticity, gravel at 4.5' bgs, little silt, mottled, no odor, penetrometer: 2.5 T/sq. ft.  |
| 8-12         |                         |                   | 4.0/4.0                     | Top: 2.65<br>Middle: 3.02<br>Bottom: 3.33 | Top: 3.7<br>Bottom: 3.6 | 8-12                        | 8-12': CLAY: yellowish red, dry, medium stiff, very silty at top and bottom, crushed shells at 10.5' bgs, no odor, penetrometer: 2.25-2.5 T/sq. ft.  |
| 12-16        |                         |                   | 4.0/4.0                     | Top: 3.78<br>Middle: 4.03<br>Bottom: 3.61 | Top: 4.4<br>Bottom: 3.8 | 12-16                       | 12-16': CLAY: light yellowish brown (2.5Y, 6/4), dry, stiff, medium to poor plasticity, some very silty pockets at 14-16' bgs, penetrometer: 2.75 T/sq. ft.  |
| 16-20        |                         |                   | 4.0/4.0                     | Top: 4.21<br>Middle: 4.01<br>Bottom: 3.76 | Top: 3.2<br>Bottom: 3.6 | 16-20                       | 16-20': CLAY: gray (7.5YR, 5/1), dry, medium stiff, little silt, no odor, penetrometer: 2.25 T/sq. ft.   |
| 20-22        |                         |                   | 4.0/2.0                     | Top: 2.11<br>Bottom: 2.09                 | 2.4                     | 20-22                       | 20-22': CLAY: pale brown (10YR, 6/3), dry, medium stiff, medium to poor plasticity, somewhat crumbly, little silt, no odor, penetrometer: 2.25 T/sq. ft.   |
| 22-24        |                         |                   | 3.8/2.0                     | Top: 2.15<br>Bottom: 2.03                 | 1.9                     | 22-24                       | 22-24': CLAY: pale brown (10YR, 6/3), dry, medium stiff, medium to poor plasticity, somewhat crumbly, little silt, no odor, penetrometer: 2.5 T/sq. ft.  |
| 24-26        |                         |                   | 4.0/2.0                     | Top: 2.10<br>Bottom: 2.01                 | 2.4                     | 24-26                       | 24-26': CLAY: pale brown (10YR, 6/3), dry, medium stiff, medium to poor plasticity, somewhat crumbly, little silt, no odor, penetrometer: 3.0 T/sq. ft.  |
| 26-28        |                         |                   | 4.0/2.0                     | Top: 1.84<br>Bottom: 2.04                 | 2.5                     | 26-28                       | 26-28': CLAY: yellowish brown (10YR, 5/6) to light gray, dry, very stiff, poor plasticity, mottled, penetrometer: 4.5 T/sq. ft.  |
| 28-30        |                         |                   | 4.0/2.0                     | Top: 1.87<br>Bottom: 2.16                 | 2.4                     | 28-30                       | 28-30': CLAY: yellowish brown (10YR, 5/6) to light gray, dry, stiff, poor plasticity, mottled, some silt at top, penetrometer: 2.5 T/sq. ft.   |
| 30           |                         |                   |                             |   |                         |                             |  |



| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|---|
| 30           |                         |                   |                             |   |                         |                             | (Cont. from page 1)   |
|              |                         |                   | 4.0/2.0                     | Top: 1.90<br>Bottom: 2.52                 | 1.9                     | 30-32                       | 30-32': CLAY: gray (5YR, 6/1), dry, medium soft, good plasticity, little silt, no odor, penetrometer: 1.5 T/sq. ft.   |
|              |                         |                   | 3.3/2.0                     | Top: 2.08<br>Bottom: 1.91                 | 2.9                     | 32-34                       | 32-34': SILTY CLAY: reddish brown 5YR, 5/3), dry, medium stiff to stiff, penetrometer: 2.75 T/sq. ft.   |
| 35           |                         |                   | 3.4/2.0                     | Top: 1.55<br>Bottom: 2.19                 | 3                       | 34-36                       | 34-36': CLAYEY SILT: brown (7.5YR, 5/3), slightly moist to moist, soft, good plasticity, more stiff clay at base, penetrometer: 0.75 T/sq. ft.  |
|              |                         |                   | 4.0/4.0                     | Top: 2.91<br>Middle: 2.04<br>Bottom: 1.85 | Top: 2.5<br>Bottom: 3.2 | 36-40                       | 36-37.5': CLAY: brown (7.5YR, 4/3), dry, stiff, no odor, penetrometer: 3.0 T/sq. ft.<br>37.5-38.2': CLAYEY SILT: brown (7.5YR, 5/4), slightly moist, soft, good plasticity, no odor, penetrometer: 0.75 T/sq. ft.<br>38.2-40': CLAY: light yellow brown, dry, medium stiff to stiff, no odor, penetrometer: 3.0 T/sq. ft. |
| 40           |                         |                   | 4.0/4.0                     | Top: 2.81<br>Middle: 2.26<br>Bottom: 2.55 | Top: 2.2<br>Bottom: 2.7 | 40-44                       | 40-44': CLAY: brown (7.5YR, 5/3), dry very stiff, poor plasticity, no odor, penetrometer: 3.0-3.25 T/sq. ft.  |
| 45           |                         |                   |                             |   |                         |                             |   |
| 50           |                         |                   |                             |   |                         |                             |   |
| 55           |                         |                   |                             |   |                         |                             |   |
| 60           |                         |                   |                             |   |                         |                             |   |
| 65           |                         |                   |                             |   |                         |                             |   |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_(CVX)\_Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.



**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

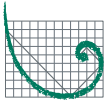
Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





# ERM Environmental Resources Management

Boring/Well No.: MW-9

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 508265.87, 3327953.8

Surface Elev.: NM Boring T.D.: 52' Boring Dia.: 2.25"

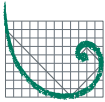
Date Started: 12/2/2021 Date Completed: 12/2/2021 Well Dia./Materials: 3/4" PVC Pre-Pack

Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|---|
| 0            |                         |                   | 2.7/4.0                     | Top: 0.51<br>Middle: 2.00<br>Bottom: 2.15 | 0-4                         | 0-2.7': CLAY: light yellow brown (2.5Y, 6/3) to gray on top, medium soft to medium stiff, dry, little silt at top, sparse white concretions, no odor, penetrometer: 1.5 T/sq. ft.<br><br>2.7-4': NO RECOVERY  |
| 5            |                         |                   | 4.0/4.0                     | Top: 2.21<br>Middle: 1.78<br>Bottom: 2.22 | 4-8                         | 4-5.5': CLAY: light yellow brown (2.5Y, 6/3) to gray on top, medium soft to medium stiff, dry, little silt at top, sparse white concretions, no odor, penetrometer: 2.0 T/sq. ft.<br>5.5-8': SILTY CLAY: strong brown (7.5YR, 5/6), stiff clay with abundant silt pockets and lenses, dry, no odor, penetrometer: 2.0-2.5 T/sq. ft. |
| 10           |                         |                   | 4.0/4.0                     | Top: 2.22<br>Middle: 2.35<br>Bottom: 2.81 | 8-12                        | 8-10': SILTY CLAY: strong brown (7.5YR, 5/6), stiff clay with abundant silt pockets and lenses, dry, no odor, penetrometer: 2.5 T/sq. ft.<br>10-12': CLAY: reddish brown to yellow brown (10YR, 5/6), stiff, dry, abundant crushed shell layers at 11-11.5' bgs, no odor, penetrometer: 2.75 T/sq. ft.                              |
| 15           |                         |                   | 4.0/4.0                     | Top: 3.37<br>Middle: 2.98<br>Bottom: 2.27 | 12-16                       | 12-16': CLAY: light yellow brown (2.5Y, 6/3), stiff, dry, medium plasticity, little silt, mottled, no odor, penetrometer: 2.5 T/sq. ft.   |
| 20           |                         |                   | 4.0/4.0                     | Top: 2.23<br>Middle: 2.52<br>Bottom: 2.31 | 16-20                       | 16-20': CLAY: gray (2.5Y, 6/1), medium stiff to stiff, dry, medium to good plasticity, some silt, no odor, penetrometer: 2.0-2.25 T/sq. ft.   |
| 25           |                         |                   | 4.0/4.0                     | Top: 1.61<br>Middle: 1.47<br>Bottom: 1.46 | 20-24                       | 20-24': CLAY: light yellow brown (2.5Y, 6/4), stiff, dry, medium plasticity, with silt, no odor, penetrometer: 2.5 T/sq. ft.  |
| 25           |                         |                   | 4.0/4.0                     | Top: 1.49<br>Middle: 1.40<br>Bottom: 1.46 | 24-28                       | 24-28': CLAY: light yellow brown (2.5Y, 6/4), stiff, dry, medium plasticity, with silt and scattered white mineral concretions, no odor, penetrometer: 2.5-2.75 T/sq. ft.   |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.63<br>Middle: 1.79<br>Bottom: 1.64 | 28-32                       | 28-32': CLAY: light yellow brown (2.5Y, 6/4), very stiff, dry, medium plasticity, with silt, mottled, with concretions, no odor, penetrometer: 3.25-3.75 T/sq. ft.  |





| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|--|
|              |                         |                   |                             |   |                             | (Cont. from page 1)  |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.63<br>Middle: 1.79<br>Bottom: 1.64 | 28-32                       | 28-32': CLAY: light yellow brown (2.5Y, 6/4), very stiff, dry, medium plasticity, with silt, mottled, with concretions, no odor, penetrometer: 3.25-3.75 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 1.95<br>Middle: 1.38<br>Bottom: 2.14 | 32-36                       | 32-34': SILTY CLAY: light gray (2.5Y, 7/1), medium soft, slightly moist to dry, good plasticity, no odor, penetrometer: 1.0-1.25 T/sq. ft.<br>34-36': CLAYEY SILT: light gray to yellowish brown, medium soft, slightly moist, good plasticity, no odor, penetrometer: 1.0-2.5 T/sq. ft. |
| 35           |                         |                   |                             |   |                             |  |
|              |                         |                   | 4.0/4.0                     | Top: 1.97<br>Middle: 1.73<br>Bottom: 2.48 | 36-40                       | 36-40': CLAY: brown (10YR, 5/3), stiff, dry, medium plasticity, silty at top, no odor, penetrometer: 2.0-2.5 T/sq. ft.   |
| 40           |                         |                   |                             |   |                             |  |
|              |                         |                   | 4.0/4.0                     | Top: 2.51<br>Middle: 2.36<br>Bottom: 2.18 | 40-44                       | 40-44': CLAY: light yellowish brown (10YR, 6/4), very stiff, dry, poor plasticity, no odor, penetrometer: 3.0 T/sq. ft.  |
| 45           |                         |                   |                             |   |                             |  |
|              |                         |                   | 4.0/4.0                     | Top: 2.49<br>Middle: 2.14<br>Bottom: 1.83 | 44-48                       | 44-48': CLAY: with SILT: light yellow brown, stiff, soft, medium to good plasticity, more silt at bottom, no odor, penetrometer: 2.0-3.0 T/sq. ft.   |
| 50           |                         |                   |                             |   |                             |  |
|              |                         |                   | 3.0/2.0                     | Top: 2.36<br>Bottom: 2.06                 | 48-50                       | 48-49.5': CLAYEY SANDY SILT: pale brown (10YR, 6/3), stiff, slightly moist to wet, softer and with good plasticity where wet, no odor, penetrometer: 2.5 T/sq. ft.   |
|              |                         |                   | 4.0/2.0                     | Top: 2.60<br>Bottom: 2.72                 | 50-52                       | 49.5-52': CLAY: light brownish gray (10YR, 6/2), stiff, dry, medium plasticity, no odor, penetrometer: 2.25 T/sq. ft.  |
| 55           |                         |                   |                             |   |                             |  |
| 60           |                         |                   |                             |   |                             |  |
| 65           |                         |                   |                             |   |                             |  |



Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_(CVX)\_Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

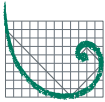
Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





# ERM Environmental Resources Management

Boring/Well No.: MW-9D

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 508266.11, 3327954.1

Surface Elev.: NM Boring T.D.: 52' Boring Dia.: 2.25"

Date Started: 12/2/2021 Date Completed: 12/2/2021 Well Dia./Materials: 3/4" PVC Pre-Pack

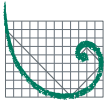
Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|---|
| 0            |                         |                   | 2.7/4.0                     | Top: 0.51<br>Middle: 2.00<br>Bottom: 2.15 | 0-4                         | 0-2.7': CLAY: light yellow brown (2.5Y, 6/3) to gray on top, medium soft to medium stiff, dry, little silt at top, sparse white concretions, no odor, penetrometer: 1.5 T/sq. ft.<br><br>2.7-4': NO RECOVERY  |
| 5            |                         |                   | 4.0/4.0                     | Top: 2.21<br>Middle: 1.78<br>Bottom: 2.22 | 4-8                         | 4-5.5': CLAY: light yellow brown (2.5Y, 6/3) to gray on top, medium soft to medium stiff, dry, little silt at top, sparse white concretions, no odor, penetrometer: 2.0 T/sq. ft.<br>5.5-8': SILTY CLAY: strong brown (7.5YR, 5/6), stiff clay with abundant silt pockets and lenses, dry, no odor, penetrometer: 2.0-2.5 T/sq. ft. |
| 10           |                         |                   | 4.0/4.0                     | Top: 2.22<br>Middle: 2.35<br>Bottom: 2.81 | 8-12                        | 8-10': SILTY CLAY: strong brown (7.5YR, 5/6), stiff clay with abundant silt pockets and lenses, dry, no odor, penetrometer: 2.5 T/sq. ft.<br>10-12': CLAY: reddish brown to yellow brown (10YR, 5/6), stiff, dry, abundant crushed shell layers at 11-11.5' bgs, no odor, penetrometer: 2.75 T/sq. ft.                              |
| 15           |                         |                   | 4.0/4.0                     | Top: 3.37<br>Middle: 2.98<br>Bottom: 2.27 | 12-16                       | 12-16': CLAY: light yellow brown (2.5Y, 6/3), stiff, dry, medium plasticity, little silt, mottled, no odor, penetrometer: 2.5 T/sq. ft.   |
| 20           |                         |                   | 4.0/4.0                     | Top: 2.23<br>Middle: 2.52<br>Bottom: 2.31 | 16-20                       | 16-20': CLAY: gray (2.5Y, 6/1), medium stiff to stiff, dry, medium to good plasticity, some silt, no odor, penetrometer: 2.0-2.25 T/sq. ft.   |
| 25           |                         |                   | 4.0/4.0                     | Top: 1.61<br>Middle: 1.47<br>Bottom: 1.46 | 20-24                       | 20-24': CLAY: light yellow brown (2.5Y, 6/4), stiff, dry, medium plasticity, with silt, no odor, penetrometer: 2.5 T/sq. ft.  |
| 25           |                         |                   | 4.0/4.0                     | Top: 1.49<br>Middle: 1.40<br>Bottom: 1.46 | 24-28                       | 24-28': CLAY: light yellow brown (2.5Y, 6/4), stiff, dry, medium plasticity, with silt and scattered white mineral concretions, no odor, penetrometer: 2.5-2.75 T/sq. ft.   |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.63<br>Middle: 1.79<br>Bottom: 1.64 | 28-32                       | 28-32': CLAY: light yellow brown (2.5Y, 6/4), very stiff, dry, medium plasticity, with silt, mottled, with concretions, no odor, penetrometer: 3.25-3.75 T/sq. ft.  |
| 30           |                         |                   |                             |   |                             |   |







| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-----------------------------|--|
|              |                         |                   |                             |   |                             | (Cont. from page 1)  |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.63<br>Middle: 1.79<br>Bottom: 1.64 | 28-32                       | 28-32': CLAY: light yellow brown (2.5Y, 6/4), very stiff, dry, medium plasticity, with silt, mottled, with concretions, no odor, penetrometer: 3.25-3.75 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 1.95<br>Middle: 1.38<br>Bottom: 2.14 | 32-36                       | 32-34': SILTY CLAY: light gray (2.5Y, 7/1), medium soft, slightly moist to dry, good plasticity, no odor, penetrometer: 1.0-1.25 T/sq. ft.<br>34-36': CLAYEY SILT: light gray to yellowish brown, medium soft, slightly moist, good plasticity, no odor, penetrometer: 1.0-2.5 T/sq. ft. |
| 35           |                         |                   | 4.0/4.0                     | Top: 1.97<br>Middle: 1.73<br>Bottom: 2.48 | 36-40                       | 36-40': CLAY: brown (10YR, 5/3), stiff, dry, medium plasticity, silty at top, no odor, penetrometer: 2.0-2.5 T/sq. ft.   |
| 40           |                         |                   | 4.0/4.0                     | Top: 2.51<br>Middle: 2.36<br>Bottom: 2.18 | 40-44                       | 40-44': CLAY: light yellowish brown (10YR, 6/4), very stiff, dry, poor plasticity, no odor, penetrometer: 3.0 T/sq. ft.  |
| 45           |                         |                   | 4.0/4.0                     | Top: 2.49<br>Middle: 2.14<br>Bottom: 1.83 | 44-48                       | 44-48': CLAY: with SILT: light yellow brown, stiff, soft, medium to good plasticity, more silt at bottom, no odor, penetrometer: 2.0-3.0 T/sq. ft.   |
|              |                         |                   | 3.0/2.0                     | Top: 2.36<br>Bottom: 2.06                 | 48-50                       | 48-49.5': CLAYEY SANDY SILT: pale brown (10YR, 6/3), stiff, slightly moist to wet, softer and with good plasticity where wet, no odor, penetrometer: 2.5 T/sq. ft.   |
| 50           |                         |                   | 4.0/2.0                     | Top: 2.60<br>Bottom: 2.72                 | 50-52                       | 49.5-52': CLAY: light brownish gray (10YR, 6/2), stiff, dry, medium plasticity, no odor, penetrometer: 2.25 T/sq. ft.  |
| 55           |                         |                   |                             |   |                             |  |
| 60           |                         |                   |                             |   |                             |  |
| 65           |                         |                   |                             |   |                             |  |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_(CVX)\_Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.

**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

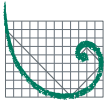
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-10

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM N15 508109.37, 3327861.3

Surface Elev.: NM Boring T.D.: 52' Boring Dia.: 3.25"

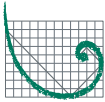
Date Started: 12/13/2021 Date Completed: 12/14/2021 Well Dia./Materials: 1" PVC Pre-Pack

Drilling Company: Walker Hill Driller: Wanya Cook

Drilling Method: Direct Push - Geoprobe 3230DT Grouting Method: Portland

Logged by: Shawn Wiggins Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 0            |                         |                   | 1.6/2.0                     | Top: 0.72<br>Bottom: 1.40                 | 1.2                     | 0-2                         | 0-1.6': SILTY CLAY: dark brown (10R, 3/3), very stiff, slightly moist, minor rootlets at top, no odor, penetrometer: 3.0 T/sq. ft.<br>1.6-2': NO RECOVERY  |
| 5            |                         |                   | 3.7/4.0                     | Top: 1.94<br>Middle: 2.00<br>Bottom: 1.36 | Top: 1.9<br>Bottom: 3.0 | 2-6                         | 2-5.7': CLAY: mottled brownish yellow (10YR, 6/6), medium soft, moist, no odor, penetrometer: 1.0-1.25 T/sq. ft.<br>5.7-6': NO RECOVERY  |
| 10           |                         |                   | 4.0/4.0                     | Top: 0.52<br>Middle: 2.20<br>Bottom: 2.18 | Top: 2.6<br>Bottom: 2.0 | 6-10                        | 6-10': SILTY CLAY: grades from brownish yellow (10YR, 6/6) to light brownish gray (10YR, 6/2), very stiff to medium stiff, moist, minor fine sand content, some silty sand at bottom, no odor, penetrometer: 2.5-4.5 T/sq. ft.   |
| 15           |                         |                   | 4.0/4.0                     | Top: 2.56<br>Middle: 3.54<br>Bottom: 3.17 | Top: 3.8<br>Bottom: 1.7 | 10-14                       | 10-10.3': CLAY: light brownish gray, very hard, dry, no odor, penetrometer: 2.5 T/sq. ft.<br>10.3-11': SHELLY CLAY: yellowish brown (10YR, 5/4), medium stiff, moist to slightly wet, no odor, penetrometer: 2.5 T/sq. ft.<br>11-14': CLAY: grades from brownish yellow (10YR, 6/6) to grayish brown (10YR, 5/2), very stiff to stiff, moist, no odor, penetrometer: 2.5-3.5 T/sq. ft. |
| 20           |                         |                   | 4.0/4.0                     | Top: 3.03<br>Middle: 2.07<br>Bottom: 1.83 | Top: 3.7<br>Bottom: 2.6 | 14-18                       | 14-18': CLAY: light olive brown (2.5Y, 5/4), medium stiff, moist to wet in spots, slightly wet to wet silt layers at 14.8' bgs, 15.0' bgs, 15.2' bgs, 15.7' bgs, 16.0-16.3' bgs, 16.5-16-7' bgs, and 17.6' bgs, no odor, penetrometer: 2.0-3.0 T/sq. ft.   |
| 25           |                         |                   | 4.0/4.0                     | Top: 2.84<br>Middle: 1.60<br>Bottom: 1.69 | Top: 3.0<br>Bottom: 2.9 | 18-22                       | 18-22': CLAY: grades from dark grayish brown (2.5Y, 4/2) to light yellowish brown (2.5Y, 6/2), medium stiff to medium soft, slightly moist, orange mottling at 20.0-21.4' bgs, some silt content at 21.5-22.0' bgs, no odor, with abundant shells, penetrometer: 1.56-1.75 T/sq. ft.   |
| 30           |                         |                   | 4.0/4.0                     | Top: 1.69<br>Middle: 1.52<br>Bottom: 1.63 | Top: 4.0<br>Bottom: 3.0 | 22-26                       | 22-26': CLAY: light yellowish brown (2.5Y, 6/4), medium stiff, slightly moist, minor orange mottling, minor silt content increasing with depth, no odor, penetrometer: 1.5-2.5 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 1.60<br>Middle: 1.49<br>Bottom: 1.74 | Top: 1.8<br>Bottom: 1.9 | 26-30                       | 26-30': CLAY: light olive brown (2.5Y, 5/3), medium stiff, dry to slightly moist, minor black and orange mottling, minor silt content, no odor, penetrometer: 2.0-2.5 T/sq. ft.  |
|              |                         |                   |                             |   |                         |                             |  |





Project No.: 0526033 Date Drilled: 12/14/2021

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION  |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|---|
| 30           |                         |                   | 4.0/4.0                     | Top: 1.58<br>Middle: 1.96<br>Bottom: 1.63 | Top: 1.3<br>Bottom: 2.6 | 30-34                       | (Cont. from page 1)<br>30-34': CLAY: mottled light brownish gray (2.5Y, 6/2) and dark yellowish brown (10YR, 4/6), hard, dry to slightly moist, minor black mineral concretions, no odor, penetrometer: 3.75-4.25 T/sq. ft.   |
| 35           |                         |                   | 4.0/4.0                     | Top: 1.42<br>Middle: 1.89<br>Bottom: 1.97 | Top: 2.5<br>Bottom: 2.4 | 34-38                       | 34-36': CLAYEY SILT: alternating with SILTY CLAY: light olive brown (2.5Y, 5/6), silty clay is medium stiff, clayey silt is soft to medium soft, clayey silt at 34.4-34.6' bgs, 34.7-34.8' bgs, 35.0-35.1' bgs, and 35.6-35.9' bgs, no odor, penetrometer: 0.0 T/sq. ft.<br>36-38': CLAY: dark yellowish brown (10YR, 4/6), very stiff, dry to slightly moist, no odor, penetrometer: 3.5 T/sq. ft. |
| 40           |                         |                   | 4.0/4.0                     | Top: 2.68<br>Middle: 2.27<br>Bottom: 2.28 | Top: 1.5<br>Bottom: 3.7 | 38-42                       | 38-42': CLAY: light brownish gray (10YR, 6/2), hard, slightly moist, minor black mottling, extensive orange mottling, no odor, penetrometer: 4.0-4.25 T/sq. ft.   |
| 45           |                         |                   | 4.0/4.0                     | Top: 2.51<br>Middle: 2.16<br>Bottom: 1.76 | Top: 3.1<br>Bottom: 2.0 | 42-46                       | 42-46': CLAY: gray (10YR, 6/1), very stiff, dry to slightly moist, orange mottling and minor black mottling, minor silt content near bottom, no odor, penetrometer: 3.5-4.0 T/sq. ft.   |
| 50           |                         |                   | 4.0/4.0                     | Top: 1.54<br>Middle: 1.31<br>Bottom: 1.35 | Top: 1.7<br>Bottom: 1.7 | 46-50                       | 46-50': CLAYEY SILT: yellowish brown (10YR, 5/4), medium stiff, moist to very slightly wet, minor orange mottling, no odor, penetrometer: 0.75 T/sq. ft.  |
| 50           |                         |                   | 4.0/2.0                     | Top: 1.21<br>Middle: 2.92<br>Bottom: 2.97 | 2.8                     | 50-52                       | 50-52': CLAY: gray (10YR, 5/1), stiff, slightly moist, orange mottling, no odor, penetrometer: 2.5 T/sq. ft.  |
| 55           |                         |                   |                             |   |                         |                             |   |
| 60           |                         |                   |                             |   |                         |                             |   |
| 65           |                         |                   |                             |   |                         |                             |   |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_(CVX)\_Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



-  ERM Monitoring Well
-  Parish Boundary

**ERM Monitoring Well Locations**  
 Henning Management, L.L.C. v.  
 Chevron U.S.A. Inc., et al.  
 Hayes Oil & Gas Field  
 Calcasieu and Jefferson Davis Parishes, Louisiana

Notes:  
 Imagery Basemap via ArcGIS Online.



**CLICK SUBMIT UPON COMPLETION**

**OR MAIL ORIGINAL TO:**

Louisiana Dept. of Natural Resources  
Attn: Ground Water Resources  
P.O. Box 94275  
Baton Rouge, LA 70804-9275  
(225) 342-8244 Ph.  
(225) 242-3505 Fax

**LOUISIANA DEPARTMENT OF NATURAL RESOURCES**  
**OFFICE OF CONSERVATION, ENVIRONMENTAL DIVISION**  
**WATER WELL REGISTRATION SHORT FORM (DNR-GW-1S)**

**ONLINE ACCESS:**

- 1) Go to <http://sonris.com/>
- 2) Click on **Data Access** in the left hand panel.
- 3) Under the section labeled **Conservation**, click on **Ground Water Information**.

**1. USE OF WELL** (Check appropriate box):

- Domestic     Rig Supply     Monitoring  
 Piezometer     Heat Pump Hole     Heat Pump Supply  
 Recovery     Relief     Abandoned Pilot Hole  
 Other (please specify) \_\_\_\_\_

**2. WELL OWNER:** \_\_\_\_\_  
Phone: (\_\_\_\_) \_\_\_\_\_

**3. WELL OWNER'S ADDRESS:** \_\_\_\_\_  
\_\_\_\_\_

**4. OWNER'S WELL NUMBER OR NAME:** \_\_\_\_\_  
\_\_\_\_\_

Serial Number (Rig Supply Only): \_\_\_\_\_

**5. WELL INFORMATION:**

Date completed: \_\_\_\_\_  
Depth of Hole: \_\_\_\_\_ ft. below ground surface  
Depth of Well: \_\_\_\_\_ ft.  
Static water level: \_\_\_\_\_ ft. below ground surface  
Date Measured: \_\_\_\_\_  
Casing: \_\_\_\_\_ in.     Metal     Plastic     Other    Length: \_\_\_\_\_ ft.  
Screen: \_\_\_\_\_ in.     Metal     Plastic     Other    Slot size: \_\_\_\_\_ in.  
Length: \_\_\_\_\_ ft.    Cemented from: \_\_\_\_\_ ft. to ground surface  
Using:     Pump down Method     Gravity Method

**6. LOCATION OF WELL:**

Latitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"    Longitude: \_\_\_\_\_° \_\_\_\_\_' \_\_\_\_\_"

Parish: \_\_\_\_\_

Physical Address: \_\_\_\_\_  
\_\_\_\_\_

Well is Near, \_\_\_\_\_ Approximately \_\_\_\_\_ miles from  
(Crossroads, Railroad, any Landmark, etc.) \_\_\_\_\_  
\_\_\_\_\_

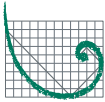
*(Attach a map or sketch or registered plat if Rig Supply to registration)*

| FOR MONITOR/PIEZO/RECOVERY WELLS ONLY |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |
|---------------------------------------|--|--|--|----------|--|--|--|-------|--|--|--|-----------|--|--|--|----------|--|--|--|
| SECTION                               |  |  |  | TOWNSHIP |  |  |  | RANGE |  |  |  | ELEVATION |  |  |  | QUAD NO. |  |  |  |
|                                       |  |  |  |          |  |  |  |       |  |  |  |           |  |  |  |          |  |  |  |

**7. REMARKS:** \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_







# ERM Environmental Resources Management

Boring/Well No.: MW-11

Project: Henning Management, L.L.C. v. Chevron U.S.A. Inc., et al. Project No.: 0526033

Location: Hayes, LA Coordinates: UTM 15N 508381.91, 3327861.8

Surface Elev.: NM Boring T.D.: 52' Boring Dia.: 2.25" soil/3.25" well

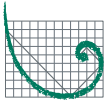
Date Started: 12/7/2021 Date Completed: 12/7/2021 Well Dia./Materials: 1" Pre-Pack PVC

Drilling Company: Walker Hill Driller: Blake Sistrunk

Drilling Method: Direct Push - Geoprobe 7822DT Grouting Method: Portland

Logged by: Cory Hunter Soil Sample Method: Acetate liner

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 0            |                         |                   |                             |   |                         |                             |  |
| 0-4          |                         |                   | 2.0/4.0                     | Top: 2.47<br>Bottom: 2.80                 | 0.1                     | 0-4                         | 0-2': CLAY: brown (7.5YR, 4/2), dry, medium stiff, soft and silty at top, good plasticity, no odor, penetrometer: 0.75-2.0 T/sq. ft.<br>2-4': NO RECOVERY  |
| 4-8          |                         |                   | 4.0/4.0                     | Top: 3.06<br>Middle: 2.64<br>Bottom: 2.75 | Top: 0.2<br>Bottom: 0.1 | 4-8                         | 4-8': CLAY: light yellowish brown (10YR, 6/4) to light gray, dry, mottled, stiff, medium plasticity, some silt, penetrometer: 1.75-2.25 T/sq. ft.  |
| 8-12         |                         |                   | 4.0/4.0                     | Top: 2.74<br>Middle: 2.58<br>Bottom: 3.18 | Top: 0.2<br>Bottom: 0.3 | 8-12                        | 8-10': SILTY CLAY: yellowish red (5YR, 4/6) to light gray, mottled, dry, stiff, no odor, penetrometer: 2.0 T/sq. ft.<br>10-12': CLAY: yellowish red (5YR, 4/6), dry, stiff with dense shell at 11 feet, no odor, penetrometer: 3.5 T/sq. ft. |
| 12-16        |                         |                   | 4.0/4.0                     | Top: 3.47<br>Middle: 3.22<br>Bottom: 2.82 | 0.2                     | 12-16                       | 12-16': CLAY: light olive brown (2.5Y, 5/4) to light gray, dry, stiff, with occasional silt pockets/lenses, penetrometer: 2.25-2.5 T/sq. ft.   |
| 16-20        |                         |                   | 4.0/4.0                     | Top: 2.99<br>Middle: 2.83<br>Bottom: 1.85 | 0.2                     | 16-20                       | 16-20': SILTY CLAY: gray (10YR, 5/1) to yellowish brown (10YR, 5/6), slightly moist to dry, medium stiff to soft where silty, with abundant silty lenses and pockets, penetrometer: 0.5-1.5 T/sq. ft.  |
| 20-24        |                         |                   | 4.0/4.0                     | Top: 1.91<br>Middle: 1.92<br>Bottom: 1.90 | 0.2                     | 20-24                       | 20-24': CLAY: yellowish brown (10YR, 5/6), dry, medium stiff, good plasticity, little silt, no odor, penetrometer: 2.25 T/sq. ft.  |
| 24-28        |                         |                   | 4.0/4.0                     | Top: 1.85<br>Middle: 2.20<br>Bottom: 2.01 | Top: 0.1<br>Bottom: 0.3 | 24-28                       | 24-28': CLAY: yellowish brown (10YR, 5/6), dry, medium stiff, good plasticity, little silt, no odor, penetrometer: 2.0 T/sq. ft.   |
| 28-32        |                         |                   | 4.0/4.0                     | Top: 2.05<br>Middle: 1.71<br>Bottom: 2.07 | Top: 1.8<br>Bottom: 0.7 | 28-32                       | 28-29.5': CLAY: yellowish brown (10YR, 5/6), dry, medium stiff, good plasticity, little silt, no odor, penetrometer: 1.75-3.0 T/sq. ft.  |





Project No.: 0526033 Date Drilled: 12/7/2021

| DEPTH (FEET) | LITHOLOGY (GRAPHIC LOG) | WELL CONSTRUCTION | SAMPLE RECOVERY (FEET/FEET) | FIELD EC (mS/cm)                          | PID (PPM)               | DESCRIPTION INTERVAL (FEET) | SOIL DESCRIPTION   |
|--------------|-------------------------|-------------------|-----------------------------|---|-------------------------|-----------------------------|--|
| 30           |                         |                   |                             |   |                         |                             | (Cont. from page 1)  |
|              |                         |                   | 4.0/4.0                     | Top: 2.05<br>Middle: 1.71<br>Bottom: 2.07 | Top: 1.8<br>Bottom: 0.7 | 28-32                       | 29.5-30.5': CLAYEY SILT: yellowish brown (10YR, 5/4), moist to wet, soft, penetrometer: 1.75-3.25 T/sq. ft.<br>30.5-32': CLAY: yellowish brown (10YR, 5/6), dry, very stiff, little silt, penetrometer: 3.25 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 2.12<br>Middle: 2.15<br>Bottom: 2.16 | Top: 0.3<br>Bottom: 0.4 | 32-36                       | 32-36': SILTY CLAY: light yellowish brown (10YR, 6/4), dry, medium stiff, medium plasticity, somewhat crumbly, no odor, penetrometer: 1.5-2.25 T/sq. ft.   |
|              |                         |                   | 4.0/4.0                     | Top: 1.92<br>Middle: 2.09<br>Bottom: 2.55 | 0.4                     | 36-40                       | 36-38.5': CLAYEY SILT: yellowish brown (10YR, 5/4), moist, medium soft, good plasticity, with stiff clayey interval 37.5-38 feet, no odor, penetrometer: 1.0 T/sq. ft.<br>38.5-40': CLAY: brown, dry, stiff, medium plasticity, no odor, penetrometer: 3.5 T/sq. ft. |
|              |                         |                   | 4.0/4.0                     | Top: 2.15<br>Middle: 2.30<br>Bottom: 2.46 | Top: 0.3<br>Bottom: 0.2 | 40-44                       | 40-44': CLAY: light brownish gray (10YR, 6/2), dry, very stiff, medium to poor plasticity, no odor, penetrometer: 3.25 T/sq. ft.   |
|              |                         |                   | 3.7/4.0                     | Top: 2.59<br>Middle: 1.53<br>Bottom: 1.88 | 0.2                     | 44-48                       | 44-48': SILTY CLAY: light yellowish brown (10YR, 6/4), moist to dry, soft at top, clay with abundant silt pockets and lenses, 0.75-2.25 T/sq. ft.  |
|              |                         |                   | 4.0/4.0                     | Top: 2.76<br>Middle: 2.64<br>Bottom: 1.64 | Top: 0.5<br>Bottom: 0.8 | 48-52                       | 48-52': CLAY: grayish brown (10YR, 5/2), dry when cut, stiff, medium to poor plasticity, penetrometer: 2.5 T/sq. ft.   |
| 55           |                         |                   |                             |   |                         |                             |  |
| 60           |                         |                   |                             |   |                         |                             |  |
| 65           |                         |                   |                             |   |                         |                             |  |

Q:\Houston\Projects\0526033\_Kean\_Miller\_LLP\_(CVX)\_Henning\_Mgmt\Hayes\_Field\LC\GIS\Maps\1.4\_ERM\_Investigation\00\_ERM\_Monitoring\_Well\_Locations.mxd, REVISED: 01/10/2022, SCALE: 1:5,000 when printed at 8.5x11"



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