

## EMERGENCY AND REMEDIAL RESPONSE PLAN

### 40 CFR 146.94(a)

### One Earth CCS

#### Facility Information

Facility name: One Earth Sequestration, LLC  
OES #1, OES #2, and OES #3 (Injection Wells) Facility contact: Mark  
Ditsworth, Vice President of Technology and Special Projects  
One Earth Sequestration, LLC  
202 N. Jordan Drive  
Gibson City, IL 60936  
(217) 784-5321 ext. 215

Well location: McLean County, Illinois (NAD 1983)

- **OES #1:** 40.485189° N, -88.481209° W
- **OES #2:** 40.500466° N, -88.471616° W
- **OES #3:** 40.515964° N, -88.479230° W

This Emergency and Remedial Response Plan (ERRP) describes actions that One Earth Sequestration, LLC shall take to address and remediate events that could allow for movement of the injected CO<sub>2</sub> stream, annulus fluid, brine, or formation fluid, including but not limited to any movement of fluid into an Underground Source of Drinking Water (USDW) or any other unauthorized zones during the construction, operation, or post-injection site care (PISC) periods for the injection well.

In accordance with 40 CFR 146.94(b), if there is evidence that the injected CO<sub>2</sub> stream and/or associated pressure front may cause an endangerment to a USDW, One Earth Sequestration, LLC must perform the following actions:

1. Initiate shutdown plan for the injection well, including immediate cessation of injection.
2. Take all steps reasonably necessary to identify and characterize any release.
3. Notify the permitting agency (EPA UIC Program Director, referred to as “Director” hereafter) of the emergency event within 24 hours.
4. Implement applicable portions of the approved ERRP.

Where the phrase “initiate shutdown plan” is used, the following protocol will be employed: One Earth Sequestration, LLC will immediately cease injection, unless One Earth Sequestration, LLC determines, in consultation with the Director, that gradual cessation of injection is necessary for safety.

As used in this ERRP, the term “wells” (unless otherwise specified) refers to the injection well and all monitoring wells. The term “Area of Review” or “AoR” (unless otherwise specified) refers to the AoR as defined in the permit.

## **1. Local Resources and Infrastructure**

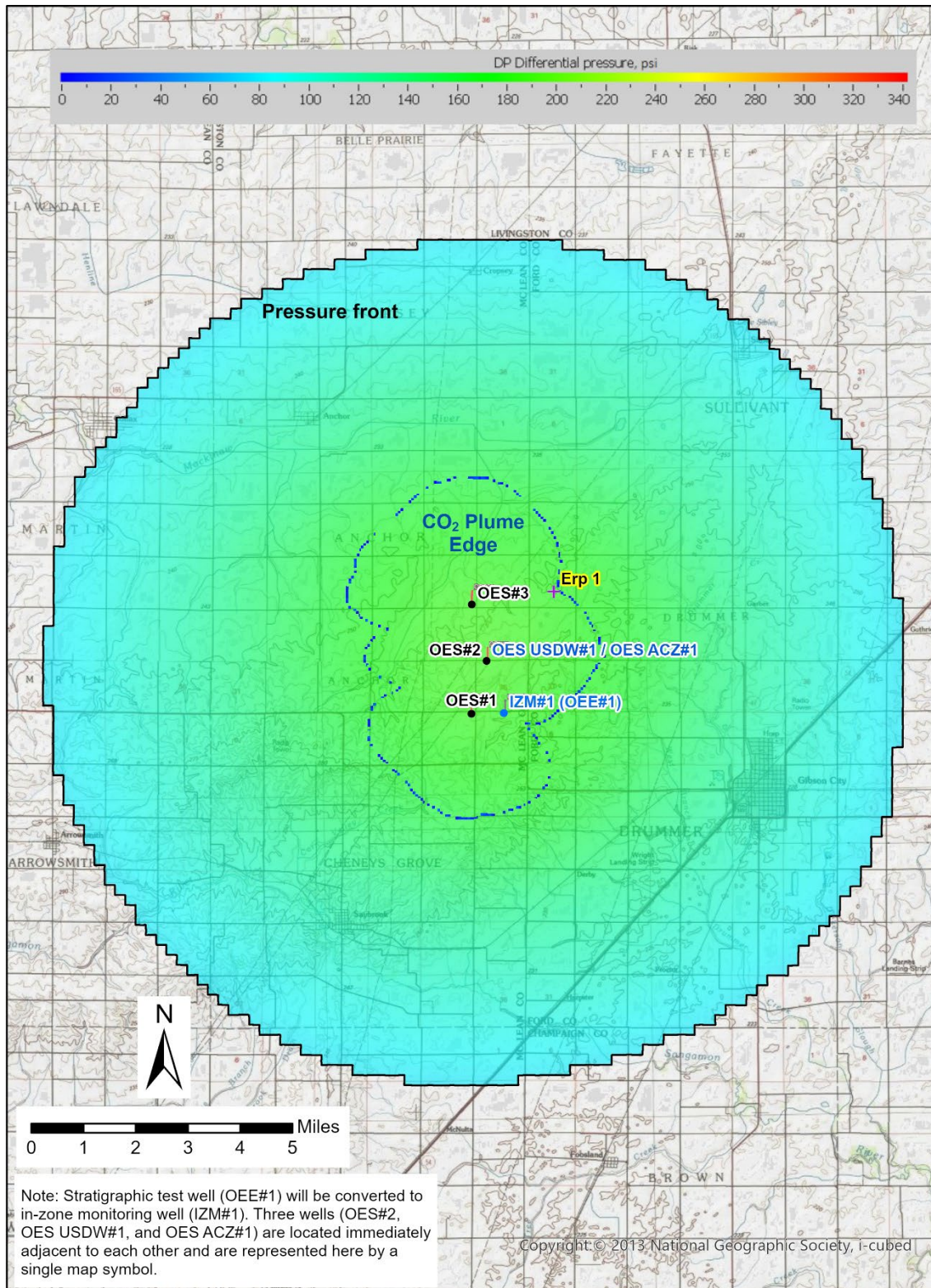
Resources in the vicinity of OES #1, OES #2, and OES #3 injection wells that may be affected as a result of an emergency event at the One Earth Sequestration Project include underground sources of drinking water. The base of the USDW in the Area of Review is the St. Peter Sandstone aquifer in the Ordovician St. Peter Sandstone Formation, encountered at approximately 2,217–2,449 feet below land surface, as confirmed by the OEE #1 stratigraphic test well.

Drainage of shallow groundwater in the AoR is directed toward the West Branch Drummer Creek and other small tributaries. The AoR and Corrective Action Plan provide further details about the USDWs in the project area.

Infrastructure in the vicinity of the One Earth Sequestration Project that may be affected as a result of an emergency at the project site includes:

- Municipal facilities and services in Gibson City, Saybrook, Sibley, Anchor, and Colfax.
- Rural residences, farmsteads, and agricultural buildings along county and township roads.
- Transportation routes, including state highways, county roads, and multiple railroad lines converging in Gibson City.
- Electrical transmission lines and substations.
- Hydrocarbon transmission pipelines in the AoR.
- A wind farm located within the broader project area.
- Active solar energy development near Gibson City.
- Surface water features, including creeks, streams, and small impoundments (e.g., West Branch Drummer Creek within the AoR).
- Community and public resources such as schools, hospitals, churches, emergency service facilities, and other key gathering places in Gibson City, Saybrook, Sibley, Anchor, and Colfax. Community and public resources such as schools, churches, and emergency service facilities in Gibson City and Saybrook.

Resources and infrastructure addressed in this plan are shown in Figure 1 (Infrastructure, Proposed Well Location, and the 20-year Area of Review [AoR]), as well as in Figures 2–4 of this ERRP, which depict potable water well locations, aerial photographs of the AoR, and transportation/utility infrastructure.



**Figure 1.** One Earth CCS Area of Review (AoR) after 20 years of injection, the proposed injection well (OES #1, #2, and #3) locations, and the deep monitor wells.

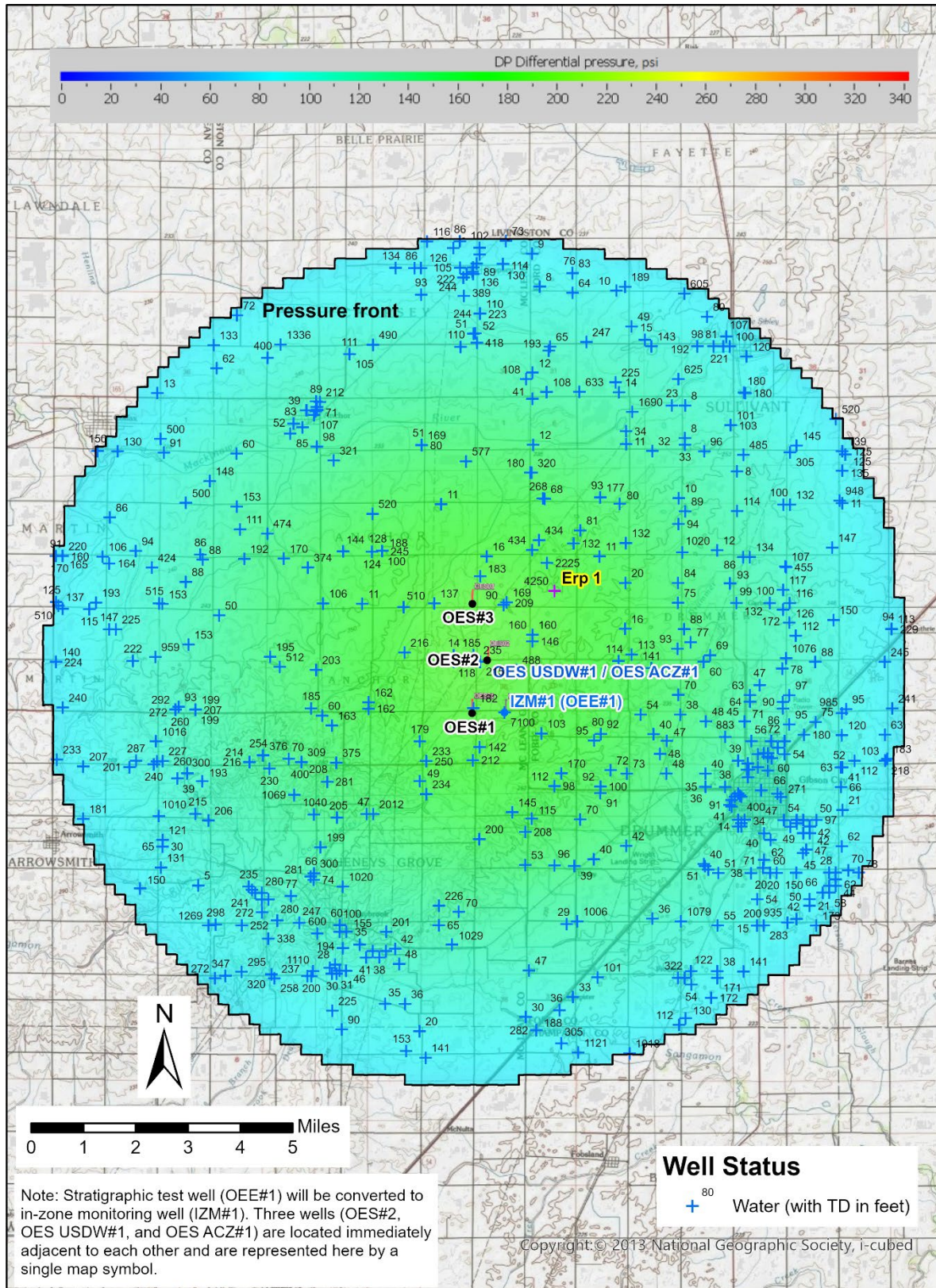
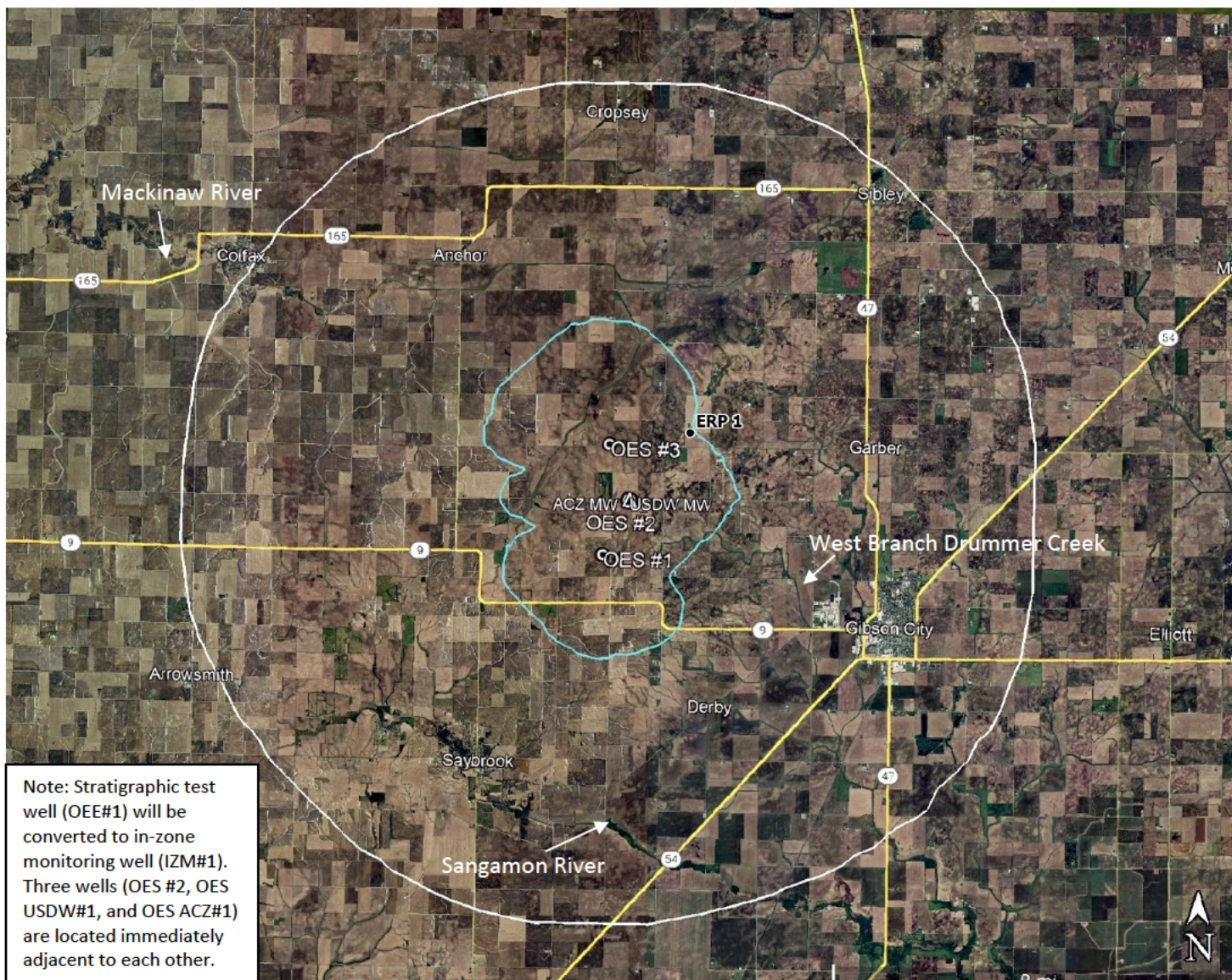
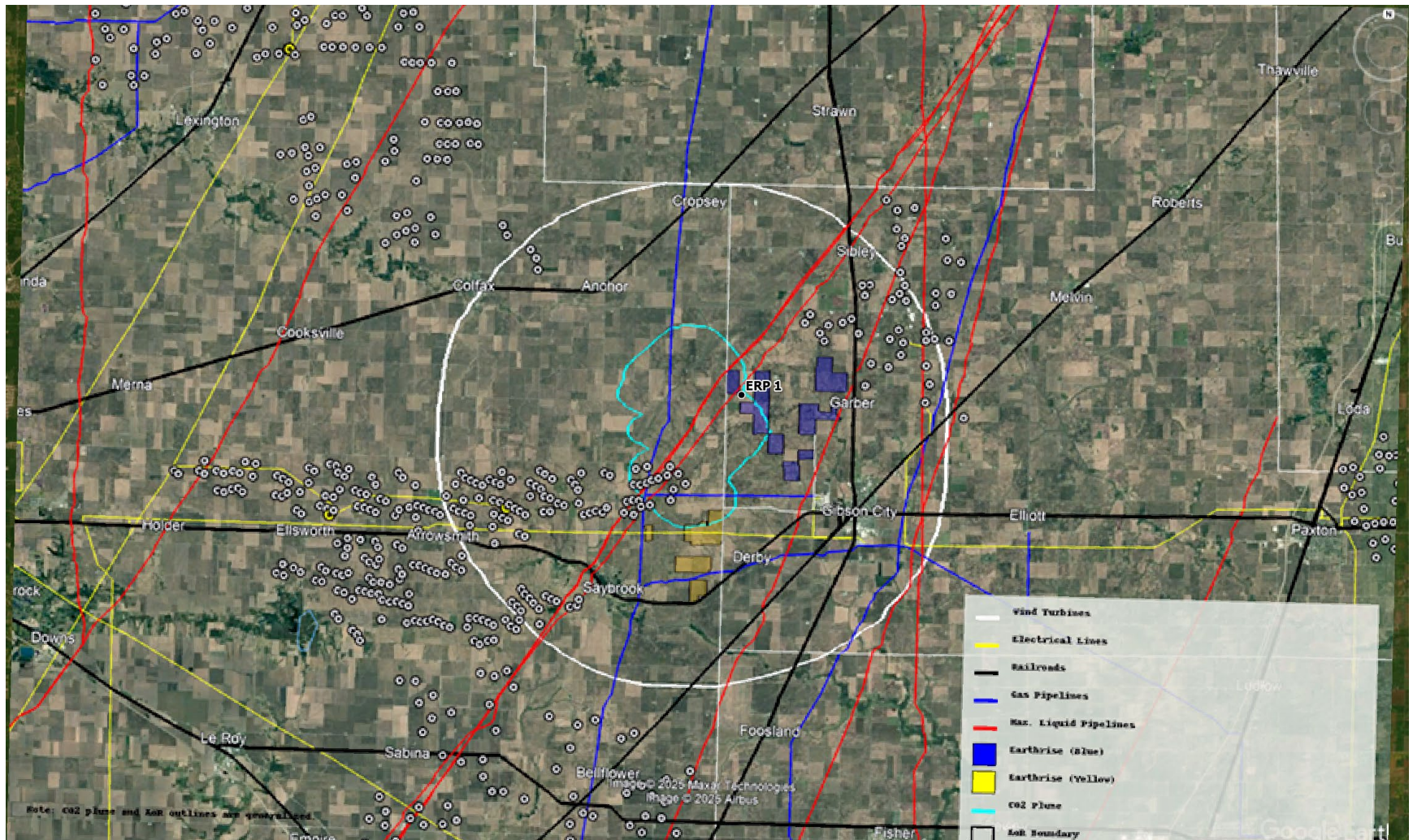


Figure 2. Potable water well locations within the 20-year AoR.



**Figure 3.** Aerial photo with AoR. Note that primary land use is agricultural. Named surface water features and communities located within the AoR are identified.



**Figure 4.** Other infrastructure. Information is from U.S. Energy Information Administration (EIA) website (<https://atlas.eia.gov>) and NPMS Public Viewer ([NPMS Public Viewer](#)) .

## 2. Potential Risk Scenarios

The following events related to the One Earth Sequestration (OES) CCS Project that could potentially result in an emergency response are included in Table 1. This table lists the types of potential adverse incidents that will trigger response actions to protect USDWs and prevent the injection of the CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid migration into any unauthorized zones, should these incidents occur during the construction, injection, or post-injection site care periods. One Earth Sequestration, LLC, will undertake emergency or remedial actions in response to these incidents. This is a non-exhaustive list of potential risk scenario events.

*Table 1. Potential Emergency Events.*

<b>Construction/Pre-Injection Period</b>
<ul style="list-style-type: none"> <li>• Well construction event during drilling or completion with loss of containment.</li> <li>• Evidence suggesting potential leakage to a USDW or other unauthorized zone (including the surface), for example:                             <ul style="list-style-type: none"> <li>◦ Elevated concentrations of indicator parameter(s) in groundwater sample(s) or other evidence suggesting potential fluid leakage into a USDW or other Unauthorized Zone (including the surface).</li> <li>◦ Unanticipated emergency corrective action(s) needed on a well(s) within the AoR.</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid between formations through injection, monitoring, or water withdrawal well bores.</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the Injection Zone through plugged and abandoned (P&amp;Aed) wells or undocumented wells in the AoR.</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the Injection Zone through failure of the confining zone, faults, and fractures (loss of containment).</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the injection zone, including due to metal leaching or corrosion due to prolonged wetted CO<sub>2</sub> exposure.</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid outside the AoR.</li> </ul> </li> <li>• Severe weather disaster (e.g., tornado, hurricane, lightning strike).</li> <li>• Seismic event (e.g., natural or induced).</li> </ul>
<b>Injection Period</b>
<p>Mechanical integrity failure:</p> <ul style="list-style-type: none"> <li>◦ Loss of internal mechanical integrity due to tubing, packer, or casing leak in injection or monitoring wells.</li> <li>◦ Loss of external mechanical well integrity due to fluid movement through vertical channels adjacent to well bores.</li> <li>◦ Loss of external mechanical well integrity from metal leaching or corrosion due to prolonged wetted CO<sub>2</sub> exposure.</li> </ul> <ul style="list-style-type: none"> <li>• Evidence suggesting potential leakage to a USDW or other unauthorized zone (including the surface), for example:                             <ul style="list-style-type: none"> <li>◦ Elevated concentrations of indicator parameter(s) in groundwater sample(s) or other evidence suggesting potential fluid leakage into a USDW or other Unauthorized Zone (including the surface).</li> <li>◦ Unanticipated emergency corrective action(s) needed on a well(s) within the AoR.</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brine, annulus fluid, or formation fluid between formations through injection, monitoring, or water withdrawal well bores.</li> <li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the Injection Zone through plugged and abandoned (P&amp;Aed) wells or undocumented wells in the AoR.</li> </ul> </li> </ul>

<ul style="list-style-type: none"><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the Injection Zone through failure of the confining zone, faults, and fractures (loss of containment).</li><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the injection zone, including due to metal leaching or corrosion due to prolonged wetted CO<sub>2</sub> exposure.</li><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid outside the AoR.</li><li>• Well monitoring equipment failure or malfunction (e.g., all valves and gauges, pressure and temperature sensors downhole and at the wellheads, etc ).</li><li>• Severe weather disaster (e.g., tornado, hurricane, lightning strike).</li><li>• Seismic event (e.g., natural or induced).</li></ul>
<b>Post-Injection Site Care Period</b>
<ul style="list-style-type: none"><li>• Mechanical integrity failure:<ul style="list-style-type: none"><li>◦ Loss of internal mechanical integrity due to packer, or casing leak in monitoring wells.</li><li>◦ Loss of external mechanical well integrity due to fluid movement through vertical channels adjacent to the well bores.</li></ul></li><li>• Evidence Suggesting potential leakage to a USDW or other unauthorized zone (including the surface), for example:<ul style="list-style-type: none"><li>◦ Elevated concentrations of indicator parameter(s) in groundwater sample(s) or other evidence suggesting potential fluid leakage into a USDW or other unauthorized Zone (including the surface).</li><li>◦ Unanticipated emergency corrective action(s) needed on a well(s) within the AoR.</li><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brine, annulus fluid, or formation fluid between formations through injection, monitoring, or water withdrawal well bores.</li><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the Injection Zone through P&amp;Aed wells or undocumented wells in the AoR.</li><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid from the Injection Zone through failure of the confining zone, faults, and fractures (loss of containment).</li><li>◦ Evidence of migration of injected CO<sub>2</sub> stream, brine, annulus fluid, or formation fluid from the injection zone, including due to metal leaching or corrosion due to prolonged wetted CO<sub>2</sub> exposure.</li><li>◦ Migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid outside of the AoR.</li></ul></li><li>• Well monitoring equipment failure or malfunction (e.g., all valves and gauges, pressure and temperature sensors downhole and at the wellheads, etc ).</li><li>• Severe weather disaster (e.g., tornado, hurricane, lightning strike).</li><li>• Seismic event (e.g., natural or induced).</li></ul>

### **3. Emergency Identification and Response Actions**

One Earth Sequestration, LLC must report to the Director within 24 hours if there is any evidence that the injected CO<sub>2</sub> stream or associated pressure front may cause an endangerment to a USDW (40 CFR 146.91(c)(1)); any noncompliance with a permit condition or malfunction of the injection system that may cause fluid migration into or between USDWs (40 CFR 146.91(c)(2)); any triggering of a shut-off system (i.e., down-hole or at the surface) (40 CFR 146.91(c)(3)); and any failure of mechanical integrity (40 CFR 146.91(c)(4)). If required by the Director, any release of CO<sub>2</sub> to the atmosphere or biosphere must also be reported within 24 hours (40 CFR 146.91(c)(5)).

Steps to identify and characterize the event will depend on the specific issue identified and the severity of the event. The potential risk scenarios identified in Table 1 are described in detail below. The order of notification for an event is shown in Table 2.

**Table 2.** *In the event of an emergency requiring outside assistance, the lead contact shall call the One Earth Sequestration, LLC control room at (217) 784-5321, option 1, and the One Earth Sequestration, LLC Vice President at (217) 766-3252.*

<b>CALL ORDER</b>	<b>CONTACT INFORMATION</b>	<b>PHONE NUMBER</b>
1	Control Room	(217) 784-5321- #1
2	Vice President	(217) 766-3252
3	US EPA UIC Program Director (within 24 hrs.)	(312)-353-6288

### **3.1 Well Construction Event**

Loss of containment could occur during drilling and completion operations if the hydrostatic column controlling the well decreases below the formation pressure, allowing fluids to enter the well.

- **Timing of event:** Construction / Pre-Injection
- **Avoidance measures:**
  - Rig crew well control training and certification
  - Blowout prevention (BOP) equipment installation and testing
  - Maintenance of kill fluid on-site and verified circulation systems
  - Regular BOP testing and kick drills
  - Use of lubricators for wireline operations
  - Continuous monitoring of drilling mud weight and displacement
- **Detection methods:**
  - Flow sensor alarms and monitoring
  - Pressure sensor readings (surface and annular)
  - Tank level indicators
  - Tripping displacement checks
  - Mud weight and volume control
- **Response actions:**
  - Notify the UIC Program Director within 24 hours of the event
  - Stop drilling operations immediately

- Close the BOP and secure the well
- Clear the drill floor and secure the work area
- Execute established well control procedures
- Evaluate drilling parameters and identify the root cause prior to resuming work
- **Response personnel:** Rig crew, downhole contractors, rig manager, field superintendent, Project Manager
- **Equipment:** Drilling rig, logging equipment, blowout preventer, cementing and casing tools, kill fluid, and ancillary well control equipment

### 3.2 **Mechanical Integrity Failure**

Loss of integrity in the following wells may endanger USDWs:

- **Injection Wells:** OES #1, OES #2, OES #3
- **Deep Observation Wells:** USDW #1, ACZ #1, IZM #1
- **Shallow Observation Well(s)**

Integrity loss may occur if shutdown devices activate, wellhead pressure exceeds permitted limits, annulus pressure indicates loss of containment, or a mechanical integrity test (MIT) fails.

Loss of integrity in OES #1, OES #2, OES #3, including endangerment due to the movement of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid into an unauthorized zone. Integrity loss may have occurred if the following events occur.

- Automatic shutdown devices are activated:
  - Wellhead pressure exceeds the shutdown pressure specified in the permit.
  - Annulus pressure indicates a loss of well containment. Annulus pressure alarm and shutdown setpoints are implemented in SCADA in accordance with the Testing & Monitoring Plan (Table 15) and the QASP (Table 11); those approved setpoints govern operational response triggers.
- Mechanical integrity test results identify a loss of mechanical integrity:
  - Loss of mechanical integrity due to a tubing or packer leak in OES #1, OES #2, OES #3, USDW #1, ACZ #1, and IZM #1, including monitoring/verification as appropriate.
  - Loss of mechanical integrity due to a casing leak in OES #1, OES #2, OES #3, monitoring/verification wells, or water withdrawal well(s).

**Timing of event:** Injection or Post-Injection

**Response actions for the injection well and deep or dual zone monitoring wells include, but are not limited to:**

- One Earth Sequestration, LLC is required to notify the UIC Program Director within 24 hours (40 CFR 146.91(c)(3) of any triggering of a shut-off system (i.e., down-hole or at the surface).
- Initiate shutdown plan (40 CFR 146.94(b)(1)).
  - Shut in the well (All necessary valves closed and locked out).
  - Vent CO<sub>2</sub> from surface lines and the facility as necessary.
  - Limit access to wellhead and surface facilities to only those authorized (Caution tape and/or rope may be used to limit access to the well and facility).
  - Monitor wellhead pressure (tubing and annulus) and temperature as is feasible. This information should be used to assess and determine the nature, cause, and extent of the mechanical integrity failure.
    - Identify and implement appropriate remedial actions to repair damage to the well (in consultation with the Director).
    - If the loss of mechanical integrity has failed monitoring equipment, implement Response Actions from Section 3.3.
    - If there is evidence suggesting potential fluid leakage into a USDW or Unauthorized Zone, implement Response Actions from Section 3.4.
    - Perform mechanical integrity test prior to bringing the well back online and resuming injection.

**Response actions for all other monitoring/verification wells include, but are not limited to:**

- Notify the Director within 24 hours of the emergency event (40 CFR 146.94(b)(3); 40 C.F.R. 146.91(c)).
- Identify and implement appropriate remedial actions to repair the well (in consultation with the Director). Within 30 days of the event, inform the Director of the repair schedule.
- Identify and implement appropriate remedial actions (in consultation with the Director)

Response personnel: Operations engineer, field superintendent, well services contractor

Equipment: Workover rig, logging tools, cement, and casing repair tools

### **3.3 Well Monitoring Equipment Failure or Malfunction**

Failure of monitoring equipment for pressure, temperature, or annulus readings may indicate a potential risk to USDWs if operational parameters cannot be verified. Annulus pressure alarm and shutdown setpoints are implemented in SCADA in accordance with the Testing & Monitoring Plan (Table 15) and the QASP (Table 11); those approved setpoints govern operational response triggers. Monitoring is conducted continuously for injection wells and deep observation wells, while shallow observation wells are sampled for groundwater quality. Each injection and deep well is equipped with a permanently installed fiber-optic cable (Distributed Acoustic Sensing [DAS] and Distributed Temperature Sensing [DTS]) for continuous measurements along the wellbore. Monitoring wells are designed as single-purpose wells, dedicated to a specific monitoring function or zone, to minimize cross-contamination and ensure reliable data.

- **Timing of event:** Injection or Post-Injection
- **Monitoring parameters:** The following parameters are tracked for each well type (Table 3).

*Table 3. Monitoring Parameters by Well Type*

Well Type	Parameters Monitored
<b>Injection Well</b>	Wellhead injection pressure; wellhead injection temperature; annulus pressure; annulus fluid volume; injection flowrate; continuous DAS/DTS fiber-optic measurements
<b>Deep Observation Well(s)</b>	Annulus pressure; annulus fluid volume; formation pressure; formation temperature; continuous DAS/DTS fiber-optic measurements
<b>Shallow Observation Well(s)</b>	Groundwater samples

Note: DAS/DTS fiber-optic systems are installed in injection and deep observation wells for continuous temperature and acoustic monitoring. Shallow observation wells are dedicated to groundwater sampling and do not contain fiber-optic systems.

- **Avoidance measures:**
  - Regular calibration and testing of sensors and gauges
  - Integration of DAS/DTS fiber-optic systems in injection and deep observation wells for continuous, redundant monitoring
  - Installation of redundant monitoring systems where feasible
  - Routine data quality checks and cross-verification
  - Maintenance program for downhole and surface instrumentation
  - Single-preference well design to isolate monitoring functions and zones
- **Detection methods:**
  - Automated alarm triggers for abnormal readings
  - Fiber-optic anomaly detection along the wellbore (temperature or acoustic signatures)
  - Cross-checks between redundant sensors or portable instruments
  - Data trending to identify sensor drift or malfunction
  - Verification by field personnel

**Response actions for all wells include but are not limited to:**

Follow Table 2 Call Order.

- Notify the UIC Program Director within 24 hours of the event (40 CFR 146.94(b)(3); 40 CFR 146.91(c)).
- Determine the impact of the equipment failure within 24 hours and assess the operational consequences. At this time, identify and implement a viable alternative monitoring method, if feasible, and report this to the Director. *Note: A viable alternative monitoring method is*

*not a substitution for any permit condition, including compliance with the Testing and Monitoring Plan.*

- If monitoring capabilities are insufficient to ensure non-endangerment to USDWs, treat the event as an immediate risk: shut down injection, isolate affected well(s), vent CO<sub>2</sub> if required, and restrict access.
- If there has been a loss of mechanical integrity, implement response actions from Section 3.2.
- If there is evidence suggesting potential fluid leakage into a USDW or other unauthorized zone, implement response actions from Section 3.4.
- Identify and implement appropriate remedial actions to repair the well, in consultation with the Director.
- Replace equipment as soon as feasible, based on operational conditions and the suitability of the alternative method of monitoring.
- Assess the cause of the equipment failure and submit a report to the Director within 30 days describing the event, remedial actions taken, and verification of restored monitoring capability.
- In consultation with the Director, assess whether overall monitoring capabilities at the project are sufficient to ensure non-endangerment to USDWs.

**If the event poses an immediate or near-term risk to human health, resources (including USDWs), or infrastructure, implement the following Response Actions:**

- Initiate shutdown plan.
- Shut in the well (close and lock all necessary valves) and isolate monitoring wells.
- Vent CO<sub>2</sub> from surface lines and facility as necessary.
- Restrict access to the wellhead and surface facilities to authorized personnel only (e.g., use caution tape or rope to limit access).
- Monitor wellhead pressure (tubing and annulus) and temperature as feasible to help determine the nature, cause, and extent of the failure.
- **Response personnel:** Monitoring team, instrumentation technicians, operations engineer, field superintendent, contractor staff as required.
- **Equipment:** Replacement sensors and gauges, calibration devices, portable monitoring equipment, fiber-optic interrogation units, well service/workover equipment, and associated safety systems.

### **3.4 Evidence Suggesting Potential Fluid Leakage to a USDW or Other Unauthorized Zone (including the Surface)**

- Potential migration of the injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid into a USDW or other unauthorized zone may endanger USDWs. This scenario includes but is not limited to:
  - Elevated concentrations of indicator parameter(s) in groundwater sample(s) or other evidence suggesting potential fluid leakage.
  - Unanticipated emergency corrective action(s) needed on a well(s) within the AoR.
  - Evidence of migration of injected CO<sub>2</sub> stream, brines, annulus fluid, or formation fluid

between formations through injection, monitoring, or water withdrawal well bores.

- Evidence of migration from the Injection Zone through plugged and abandoned wells or undocumented wells in the AoR.
- Evidence of migration from the Injection Zone through failure of the confining zone, faults, or fractures (loss of containment).
- Evidence of migration due to casing or tubing corrosion, metal leaching, or prolonged wetted CO<sub>2</sub> exposure.
- Evidence of migration of injected fluids outside the AoR.
- **Timing of event:** Construction / Pre-Injection, Injection, or Post-Injection
- **Avoidance measures:**
  - Comprehensive Testing and Monitoring Plan (T&M Plan) to identify early warning indicators.
  - Baseline groundwater and formation sampling to establish reference conditions.
  - Proper cementing and well construction to isolate USDWs.
  - Routine monitoring of annulus pressure, groundwater quality, and fiber-optic anomalies in deep wells.
  - Area of Review (AoR) evaluation for legacy wells, faults, or transmissive features.
- **Detection methods:**
  - Elevated indicator parameters in groundwater or formation sampling (as defined in the T&M Plan).
  - Annulus pressure anomalies in injection or monitoring wells.
  - Fiber-optic (DAS/DTS) anomalies in injection and deep observation wells.
  - Field observations of surface leakage indicators.
  - Emergency well corrective actions within the AoR.
- **Response actions:**
  - Immediately notify the One Earth Sequestration, LLC Vice President or designee.
  - Notify the UIC Program Director within 24 hours of the emergency event (40 CFR 146.91(c), 40 CFR 146.94(b)(3)).
  - The Vice President will make an initial assessment of the situation and determine additional internal and external notifications.
  - Determine the severity of the event within 24 hours based on available information.
- **For all emergencies (Major, Serious, or Minor):**
  - Initiate shutdown plan (40 CFR 146.94(b)(1)).
  - Shut in the affected well(s) (close and lock all valves).
  - Vent CO<sub>2</sub> from surface lines and facility as necessary.

- Restrict access to the wellhead and facility to authorized personnel only.
- Monitor wellhead pressure (tubing and annulus) and temperature as feasible.
- Collect confirmation samples of groundwater and analyze for indicator parameters (per T&M Plan).
- If elevated indicator parameters are confirmed, in consultation with the UIC Program Director:
  - Develop a case-specific work plan to install additional monitoring wells to delineate the extent of impact.
  - Remediate unacceptable impacts to the USDW (e.g., pump-and-treat, interception/extraction, or other corrective systems).
- If the impacted USDW is used as a potable supply and drinking water standards are exceeded, provide an alternate potable water supply immediately.
- Identify and implement a remediation plan (in consultation with the Director) within 30 days of the event.
- Continue groundwater monitoring on a frequent basis (schedule determined jointly with the Director) until potential endangerment or adverse impacts have been fully addressed.
- **Response personnel:** Vice President or designee, operations engineer, geologist, water quality specialist, remediation contractor, field superintendent.
- **Equipment:** Sampling kits, portable water supply equipment, portable monitoring equipment, workover rig, cementing and casing repair tools, remedial water treatment systems (if required).

### 3.5 Severe Weather Disaster

Well problems (integrity loss, leakage, or malfunction) may arise as a result of a natural disaster affecting the normal operation of the injection wells. Weather-related disasters (e.g., tornado, hurricane or lightning strike) may affect project facilities.

**Timing of event:** Construction/Pre-Injection, Injection, and Post-Injection

**Response actions for all wells include but are not limited to:**

If an emergency event occurs, the following actions must be taken:

- Notify the UIC Program Director within 24 hours (40 CFR 146.94(b)(3); 40 CFR 146.91(c) and (e)).
- Trigger alarm via the monitoring system or monitoring personnel.
- If appropriate, contact the Field Superintendent to activate emergency evacuation procedures and secure the location.
- If there has been a loss of mechanical integrity, implement Response Actions from Section 3.2 Mechanical Integrity Failure.
- Determine if all monitoring equipment remains functional. If there has been a failure of monitoring equipment, implement the Response Actions outlined in Section 3.3, Well Monitoring Equipment Failure.

- Conduct an assessment to determine if there is evidence suggesting potential fluid leakage into a USDW or Unauthorized Zone. If such evidence is found, implement Response Actions from Section 3.4 Evidence of Potential Fluid Leakage.
- Assess potential impact to the project and to Local Resources and Infrastructure. Identify and implement appropriate remedial actions in consultation with the Director.
- Response personnel: Operations engineer, Field Superintendent, Project Manager, geologist, reservoir engineer, monitoring staff, remediation contractors, and emergency response teams, as appropriate.
- Equipment: Drill rig, logging equipment, cement and casing tools, portable monitoring equipment, remedial treatment systems, and other specialized equipment required to implement the above actions.

### **3.6 Seismic Events**

A major natural seismic event may disturb the surface or subsurface facilities. There is also a possibility that injection operations may cause induced seismicity. This portion of the response plan is developed for any seismic event with an epicenter within an 8-mile radius of the injection wells. A geophone array on the surface will be used to monitor the area for seismicity in conjunction with state or national monitoring networks. Refer to Table 4 below for response actions based on Moment magnitude (Mw) thresholds and potential damage.

**Timing of event:** Construction/Pre-Injection, Injection and post-injection

**Response actions include but are not limited to:**

**Table 4. Seismic Monitoring System, for Seismic Events >Mw 1.0 with an Epicenter Within 8 Mile Radius of Injection Well**

Operational Status	Moment Magnitude (Mw) <sup>a,b</sup>	Responses <sup>c</sup>
Green	Seismic events less than or equal to Mw 1.5	1. Continue normal operation within permitted levels.
Yellow	Five or more seismic events within a 30-day period having a magnitude greater than Mw 1.5 but less than or equal to Mw 2.0	1. Continue normal operation within permitted levels. 2. Within 24 hours of the incident, notify the UIC Program Director and One Earth Sequestration, LLC communications of the operating status of the well. 3. Review seismic and operational data to determine the cause.
Orange	Seismic event greater than Mw 1.5 and local observation or felt report	1. Continue normal operation within permitted levels. 2. Within 24 hours of the incident, notify the UIC Program Director and One Earth Sequestration, LLC communications of the operating status of the well.
	Seismic event greater than Mw 2.0 and no felt report	3. Review seismic and operational data to determine the cause. 4. Report findings to the UIC Program Director and identify and implement appropriate remedial actions (in consultation with the Director).
Magenta	Seismic event greater than Mw 2.0 and local observation or report	1. Initiate rate reduction plan (in consultation with the Director). 2. Vent CO2 from surface facilities. 3. Within 24 hours of the event, notify the Director of the operating status of the well. 4. Limit access to wellhead to authorized personnel only. 5. Communicate with facility personnel and local authorities to initiate evacuation plans, if necessary. 6. Review seismic and operational data to determine the cause of the event. 7. Monitor well pressure, temperature, and annulus pressure to verify well status and determine the extent of any failure. 8. Report findings to the Director and identify and implement appropriate remedial actions (in consultation with the Director). 9. If there has been a loss of mechanical integrity at any of the wells, implement Response Actions from Section 3.2. 10. Determine if all monitoring equipment remains functional. If there has been a failure of monitoring equipment, implement Response Actions from Section 3.3. 11. Conduct assessment to determine if there is evidence suggesting potential fluid leakage into a USDW or Unauthorized Zone. If there is such evidence, implement Response Actions from Section 3.4.

Operational Status	Moment Magnitude (Mw) <sup>a,b</sup>	Responses <sup>c</sup>
<b>Red</b>	Seismic event greater than Mw 2.0, and local observation or report, and local report and confirmation of damage	1. Initiate shutdown plan (40 CFR 146.94(b)(1)). 2. Within 24 hours of the incident, notify the UIC Program Director and One Earth Sequestration, LLC communications, about the emergency (40 CFR 146.94(b)(3)). 3. Limit access to wellhead to authorized personnel only.
	Seismic event >Mw 3.5	4. Communicate with facility personnel and local authorities to initiate evacuation plans, as necessary. 5. Review seismic and operational data to determine the cause of the event. 6. Monitor well pressure, temperature, and annulus pressure to verify well status and determine the extent of any failure. 7. Report findings to the Director and identify and implement appropriate remedial actions (in consultation with the Director). 8. If there has been a loss of mechanical integrity, implement Response Actions from Section 3.2. 9. Determine if all monitoring equipment remains functional. If there has been a failure of monitoring equipment, implement Response Actions from Section 3.3. 10. Conduct assessment to determine if there is evidence suggesting potential fluid leakage into a USDW or Unauthorized Zone. If there is such evidence, implement Response Actions from Section 3.4.

<sup>a</sup> Specified magnitudes refer to magnitudes determined by local One Earth CCS project’s seismic monitoring stations or USGS seismic monitoring stations or reported by the USGS National Earthquake Information Center using the national seismic network.

<sup>b</sup> “Felt report” and “local observation or report” refer to events confirmed by local reports of felt ground motion or reported on the USGS “Did You Feel It?” reporting system.

<sup>c</sup> Remedial action will occur within 25 business days (5 weeks).

Response personnel: Operations engineer, Field Superintendent, Project Manager, geophysicist, reservoir engineer, monitoring staff, emergency response teams, and well services contractors (as required for remediation or inspection).

Equipment: Seismic monitoring systems (fiber-optic DAS, geophone arrays, regional seismic network access), wellhead pressure/temperature monitoring systems, portable seismic recorders, workover rig (if well integrity inspection or repair is required), logging tools, and standard well-control and safety equipment.

#### **4. Response Personnel and Equipment**

Site personnel, project personnel, and local authorities will be relied upon to implement this ERRP. In addition to the Director, site personnel to be notified include (not listed in order of notification):

1. One Earth Sequestration, LLC (VP Technology and Special Projects)
2. One Earth Sequestration, LLC (VP of Operations)
3. One Earth Energy (Safety Manager)
4. One Earth Energy (Environmental Manager)
5. One Earth Energy (Operations Manager)
6. One Earth Energy (CEO)
7. REX American Resources (CEO)

A site-specific emergency contact list will be developed and maintained throughout the project's duration. One Earth Sequestration, LLC will provide the current site-specific emergency contact list to the Director.

*Table 5. Contact Information for Key Local, State, and Other Authorities.*

Agency	Phone No.
City of Gibson City Police Department	217-784-8666
City of Gibson City (City Hall)	217-784-5872
Ford County Sheriff	217-379-2324
McLean County Sheriff	309-888-5034
Champaign County Sheriff	217-384-1204
Illinois State Police (District 9 Springfield HQ)	217-786-6677
Illinois Emergency Management Agency	800-782-7860
Ford County Emergency Management Agency	217-379-9415
McLean County Emergency Management Agency	309-888-5022
Champaign County Emergency Management Agency	217-384-3826
Bodine Environmental Services	800-637-2379
UIC Program Director (US EPA Region V)	312-353-7648
US EPA National Response Center (24 hr.)	800-424-8802

Equipment needed in the event of an emergency and remedial response will vary, depending on the triggering emergency event. Response actions (cessation of injection, well shut-in, and evacuation) will generally not require specialized equipment to implement. Where specialized equipment (such as a drilling rig or logging equipment) is required, the designated Subcontractor Project Manager shall be responsible for its procurement.

#### **5. Emergency Communications Plan**

One Earth Sequestration, LLC will communicate to the public about any event that requires an emergency response, ensuring that the public understands what happened and whether there are any environmental or safety implications. The amount of information, timing, and

communication methods will be appropriate to the event, its severity, whether any impacts to drinking water or other environmental resources occurred, any impacts to the surrounding community, and the community's awareness of the event.

In the event of an emergency requiring outside assistance, the project contact lead or Vice President shall call the One Earth Energy control room at (217) 784-5321 and the One Earth Energy CEO at (217) 781-4284.

- Emergency communications with the public will be handled by One Earth Energy CEO or One Earth Sequestration, LLC Vice President.
- One Earth Sequestration, LLC Vice President, in consultation with the UIC Program Director, will determine the method, frequency, and extent of public communication based upon the emergency event's severity and impact to the public.
- One Earth Sequestration, LLC Vice President will describe what happened, any impacts to the environment or other local resources, how the event was investigated, what responses were taken, and the status of the response (including any updates, as necessary).
- One Earth Energy CEO or One Earth Sequestration, LLC Vice President will manage all media communications with the public (through either interview, press release, Web posting, or other) in the event of an emergency related to the injection project.
- The individual to be designated by One Earth Sequestration, LLC will be the first contact during an emergency event.
- This individual will contact the crisis communication team as appropriate. Emergency responses to the media from One Earth Sequestration, LLC will be handled exclusively by personnel designated by One Earth Sequestration, LLC.
- Those individuals should try to be reachable 24 hours a day for contact in the event of an emergency.

## **6. Plan Review**

In accordance with 40 CFR 146.94(d), One Earth Sequestration, LLC shall periodically review the ERRP. Based on this review, One Earth Sequestration, LLC shall submit an amended ERRP or a demonstration to the Director that no amendment is needed. Any amendments to the ERRP must be approved by the Director to be effective. If approved, they will be incorporated into the Permit. Amended plans or demonstrations shall be submitted to the Director as follows:

- At least once every five (5) years following its approval by the permitting agency,
- Within one (1) year of an area of review re-evaluation,
- Following any significant changes to the facility, such as the addition of injection or monitoring wells, on a schedule determined by the Director; or
- Within six (6) months following the occurrence of an emergency event under this ERRP, and
- When required by the Director.

## **7. Staff Training and Exercise Procedures**

One Earth Sequestration, LLC will integrate the ERRP into the plant-specific standard operating procedures and training program as described in the FRP entitled Facility Response Plan “Self-Inspection”. *Drills/Exercises, and Response Training*” Periodic training will be provided, not less than annually, to well operators, plant safety and environmental personnel, all managers, and designated media communications. The training plan will document that the above-listed personnel have been trained and have the required skills to perform their relevant emergency response activities described in the ERRP.

### **7.1 Implementation of Environmental, Health, and Safety Training**

Training will be provided on at least an annual basis to ensure project personnel are familiar with the ERRP and their responsibilities during an emergency. Personnel to be trained include well operators, project safety and environmental staff, the Project Manager, the Carbon Capture Plant operations supervisor, and corporate communications staff.

The training will document that these individuals have the necessary skills to carry out the emergency response activities outlined in the ERRP. Training sessions may include reviews of response procedures, tabletop exercises, and refresher discussions following updates to the plan or changes in operations. The Project Manager will maintain attendance and training records.

One Earth Sequestration, LLC places a high priority on preparedness and actively engages in training events to ensure that staff remain confident and capable of responding effectively. When appropriate, training will also include coordination with local emergency response agencies to promote effective communication and joint response readiness.