



COUNTY OF ST. CLAIR

ENVIRONMENTAL SERVICES DEPARTMENT



Matthew Williams
Landfill/Resource Recovery Manager

April 10, 2024

Ms. Marie Reid

Department of Environment, Great Lakes, and Energy
Environmental Quality Analyst, 9
Air Quality Division
Southeast Michigan District Office
27700 Donald Court
Warren, Michigan 48092

Subject: Smiths Creek Landfill (SCL)
Response to March 20, 2024, Violation Notice

Ms. Reid:

We have received the Department of Environment, Great Lakes and Energy (EGLE) Violation Notice (VN) issued on March 20, 2024, citing odors attributable to activities at the Smiths Creek Landfill (SCL) based on staff observations. After reviewing the details provided to substantiate the basis of the VN we request additional evidence to support the conclusion drawn by EGLE staff that SCL was the sole source of odors reportedly observed during the off-site visit on March 14, 2024. The details provided in the VN appear to be based on generalities and the cited observations were not corroborated with an assessment of on-site conditions on that date. The VN offers no demonstrated evidence other than the presence of the landfill and appears to rely on the recent history of intermittent odors rather than a balanced inspection of conditions both on- and off-site.

Data recorded at on-site monitors at SCL (Figure 1) are well aligned and proportional when compared with data reported from the EGLE off-site monitoring locations (Figure 2) suggesting that on-site conditions would be reasonably expected to be indicative of conditions observed off-site. Data shows that hydrogen sulfide (H₂S) concentrations on-site are consistently and proportionally higher than corresponding off-site EGLE monitoring location data. As such, odor detection on-site would be reasonably expected under the same general weather conditions as odors that may be observed off-site during the same time period assuming the landfill as the predominant source of odors.

An independent on-site assessment of conditions was made and documented by experienced SCL staff on March 14, 2024, including routine observation of odors at each of the on-site monitor locations. Results of that on-site survey indicated that odors uniquely indicative of landfill gas were

not detected on-site to correspond with off-site observations by EGLE staff. As EGLE staff did not contact SCL personnel or conduct a corresponding on-site assessment to support the assertion that the landfill was the source of odors perceived off-site, the VN is, in our opinion, unsubstantiated by adequate facts.

Our rationale for this position is further explained below. We request additional supporting information from EGLE to clarify how causality was determined in the issuance of the VN. In the absence of verifiable evidence that due process was exercised and that the landfill was determined to be a significant contributor to the odors perceived by EGLE staff on March 14, 2014, we request that the VN be rescinded.

Basis of the VN and Assumptions

As stated in the VN, the notice was issued based on staff findings during an off-site visit. The purpose of the visit was to download data from monitors operated by EGLE in the vicinity of the Smiths Creek Landfill (SCL) which occurred during an unspecified time period on March 14, 2024. Secondly, observations were made during the visit regarding unspecified odor complaints received by the department.

At the time of the data collection visit, EGLE staff reported detection of odors described as being “distinct and definite landfill gas odors” and that those odors were present for a one-hour period at an unspecified location on Richman Road. Specifically, H₂S gas odor was cited as the gas constituent most notably present. Weather conditions at the time of the visit were described as 47 degrees Fahrenheit with an 8 mile per hour wind from the east-northeast. There is no indication in the VN of the analyst’s basis for familiarity with the unique nature of landfill gas, or the method used to distinguish between H₂S related to landfills and other sources of H₂S including wetlands, hydric soils or the local sewer system.

The VN cited Rule 901, P.A. 451, 1994, as amended as the basis for the notice. The rule states:

R 336.1901: Notwithstanding the provisions of any other rule, a person shall not cause or permit the emission of an air contaminant or water vapor in quantities that cause, alone or in reaction with other air contaminants, either of the following: (a) Injurious effects to human health or safety, animal life, plant life of significant economic value, or property. (b) Unreasonable interference with the comfortable enjoyment of life and property.

Rule 901 is intended to regulate both air emissions which may be (a) injurious to humans and the environment and (b) be a nuisance which interferes with community quality of life. We assume the sole intent of the VN is to address those conditions which may constitute a nuisance.

As the time period and specific location of the odor detections along Richman Road are not specified in the VN, certain assumptions have been made for the purpose of this response. First, we presume

that the location at which odors were identified coincides with EGLE H₂S monitoring location 1 (Location #1) in the vicinity of South Richman Road, rather than Richman Road located near the intersection of Smiths Creek Road (Figure 1).

Further, the time period in which the observations were made is not identified in the VN. Therefore, it is assumed that odor observations were made by EGLE staff during the period between 10 am – 12 pm on March 14, 2024. This assumption is based on data measurements recorded at the on-site weather station operated by Tetra Tech that indicate the time period to be the sole interval that is consistent with reported wind direction observations (ENE) made by EGLE staff (Figure 3). The wind speed reported by EGLE staff (8 mph) is not, however consistent with measured wind speeds during daylight hours at the on-site weather monitoring station. Wind speeds recorded by the on-site weather station ranged from 3.2 – 5.8 mph during the period in which wind direction was from the ENE (Figure 3).

Finally, as EGLE staff did not contact SCL representatives, sign in at the landfill office or provide verbal notice of the off-site odor detection, it is assumed that corresponding on-site observations were not made by EGLE on that date.

Documented Conditions:

Data recorded at EGLE monitoring location 1 during the time period from 10 am – 12 pm March 14, 2024, ranged from 6.6 ppb to 8.02 ppb (Figure 3). The detection limits for the EGLE operated equipment and calibration details were not provided with the VN. Corresponding data from the monitors operated on-site at SCL for the same time period reported data between non-detectable concentrations (<10 ppb) and 11.48 ppb. (Figure 3).

Monitors placed at EGLE Location 1 and SCL Station 2 are in close proximity to each other (Figure 3) and the relative relationship between measurements recorded on March 14 is consistent and proportional throughout the 24-hour period. Reported observation of odors off-site are presumed to coincide with the area near EGLE monitoring location 1. During the period from 10 am to 12 pm, readings from EGLE Location 1 averaged 7.18 ppb and the corresponding readings from the SCL on-site monitor at Station 2 averaged 11.23 ppb. Similarly, the average measured H₂S concentrations between EGLE monitoring Location 3 and SCL Monitoring Station 1 were 2.26 and 10.16 respectively. As such, it is reasonably expected that odors, when originating at the landfill, would be detected on-site to a greater degree than those identified off-site when observed by the same individual.

SCL acknowledges that off-site odors related to landfill operations have occurred intermittently since the first reported complaint on September 5, 2023. Significant reduction in on-site odors, measurable methane and H₂S have been achieved over the past several months as a result of aggressive, well documented corrective measures. As such, it is increasingly important to verify the source(s) of odors rather than assuming the landfill to be the sole default point of origin. The location of monitors collecting data for the purposes of H₂S measurement are shown in Figure 1, along with their proximity to wetlands that are pervasive in the area surrounding SCL (Figure 1). In addition to

H₂S naturally occurring bacteria are commonly known to generate odorous compounds including methane and certain mercaptans in wetland environments and hydric soil conditions. It is our understanding that EGLE off-site monitors are designed to exclusively detect H₂S and that other odorous compounds may not be quantified. Further, the local sewer system and its associated pump stations represent a reasonable potential source of odors which has not been ruled out.

Monitors both on-site and off-site do confirm presence of low-level concentrations of H₂S during the period assumed to correlate with the EGLE (off-site) observations. Knowledgeable SCL staff who are experienced in distinguishing odors associated with landfill activities conduct routine on- and off-site odor surveys. One such routine on-site odor survey was conducted independent and without prior knowledge of the EGLE off-site visit at approximately 2:15 – 2:30 pm on March 14, 2024. At that time, the following conditions were documented at SCL locations (Figure 1):

- Station 1: No odor detected.
- Station 2: Mild damp odor detected, not characteristic of H₂S or landfill gas.
- Station 3: No odor detected.
- Station 4: No odor detected.

The on-site observations were conducted under conditions identified in Figure 4. During the on-site survey, H₂S concentrations were measured at near-peak levels for the 24-hour period at each of the on-site stations and odors characteristic of landfill gas were not detected. Additionally, landfill vacuum on March 14, 2024, averaged 59" for the 24-hour period. Average total gas flow for the engine plant and primary flare system was 1,518 scfm, and flow for the supplemental flare was about 425 scfm. These operating conditions indicate that the gas system was exerting adequate gas control during the assumed period of EGLE's off-site observations. At the time of the on-site odor survey by SCL staff, winds were recorded to be northeast by north (NEbN) at approximately 3 mph. The hourly average H₂S concentration was recorded to be 15.7 ppb, 15.49 ppb, <10 ppb and <10 ppb at Stations 1, 2, 3, and 4 respectively. Corresponding off-site observations were not conducted during the period.

Most authorities appear to concur that the olfactory fatigue that can be associated with H₂S occurs at 100 ppb and above. Although SCL staff is routinely present on-site, there is no evidence to suggest that olfactory fatigue has affected the staff's ability to detect H₂S odors, when present.

Regulatory agencies, however, differ on establishment of an odor threshold for H₂S. The EPA cites Agency for Toxic Substances and Disease Registry (ATSDR) guidance which asserts that the odor threshold for H₂S ranges between 0.5 ppb – 300 ppb ([Hydrogen Sulfide ToxFAQs \(epa.gov\)](https://www.epa.gov/toxic-substances-and-disease-registry)). The Department of Occupational Safety and Health Administration identifies the odor threshold at approximately 10 ppb (<https://www.osha.gov/hydrogen-sulfide/hazards>). Establishment of a universal odor threshold is further complicated by variability in sensitivity among human receptors. SCL acknowledges that the H₂S measurements reported by both EGLE and Tetra Tech equipment are above the lowest olfactory threshold recognized by ASTDR and may be detected by some individuals. Based on these sensitivity differences, perception of odors is necessarily relative to the

individual perceiving the odors.

On March 14, 2024, EGLE staff did not conduct observations at corresponding locations on-site at SCL to verify whether odors could be verified at the assumed source. In the absence of that observation, and with consideration of the on-site survey conducted by SCL staff, causality is inconclusive.

EGLE staff did not contact landfill personnel or notify SCL management of the odor detection so that a full evaluation could be made in real-time. Feedback on off-site conditions is a critical part of our ability to not only direct corrective measures, but also to assess the effectiveness of measures already in place or underway.

Corrective measures have been described in depth as a part of previous enforcement responses, ongoing weekly status reports and meetings with EGLE staff. Significant measures implemented to date include, but are not limited to the following:

- Engineering and Operational evaluation of gas collection and control system (ongoing),
- Re-grading and obstruction removal of main header lines to facilitate gas flow/vacuum (October 27, 2023),
- Maximized vacuum at gas-to-energy skid to increase gas capture (ongoing),
- Placement of supplemental interim cover to minimize potential for fugitive emissions through cover (ongoing as needed),
- Installation / operation of gas interceptor extraction lines at the perimeter of Cell 8 (December 22, 2023, ongoing),
- Supplemental clay cover added to interceptor trench to limit air infiltration and maximize vacuum (February 2024, anticipated completion April 30, 2024),
- Installation and operation of a supplemental gas destruction flare specific to Cell 8 (November 9, 2023),
- Installation and operation of a larger sized supplemental flare (April 2, 2024) specific to Cell 8 as discussed in detail with EGLE AQD staff on January 25, 2024,
- Permit to Install application submittal for operation of larger supplemental flare (December 15, 2023, with amendment January 16, 2024),
- Identification and tracking of localized areas of H₂S generation in Cell 8 (ongoing),
- Augmentation of waste acceptance protocols to minimize H₂S generation potential in waste streams not otherwise prohibited from disposal (ongoing),
- Installation of H₂S monitors (Figure 1) and a weather station designed to track occurrence of H₂S directly attributable to on-site conditions (March 12, 2024, ongoing),
- Preparation and submittal of updated GCCS design Plan to EGLE Materials Management Division (March 29, 2024), and
- H₂S removal system for gas generated in Cell 8 approved for procurement (March 21, 2024).

Summary and Conclusion

Based on known conditions that have intermittently affected gas collection at the site over the past several months, we agree that the potential for off-site odors exists. However, we believe that causality in the detection of odors by the EGLE analyst on March 14, 2024, is not sufficiently established to identify SCL as the default source of odors. We take reports of unpleasant odors seriously and welcome the opportunity to assist EGLE in determining if the perceived odors are attributable to landfill activities. We believe that we have demonstrated good faith cooperation with the agency and that significant strides have been made towards gas and odor control and that our findings and efforts have been communicated with transparency.

As odors detected on-site diminish as a result of greater gas control, it becomes increasingly critical that we accurately distinguish between landfill related odors and other potential sources of odors. The current VN appears to attribute all perceived off-site odors to the landfill without validating that on-site conditions at SCL support that conclusion or considering other potential and realistic sources which may contribute to odors. For the reasons cited in this response, we request that either adequate evidence be provided to support conclusions drawn in the notice, or that the VN be rescinded. In our judgement, the VN is not adequately substantiated and does not offer findings that productively contribute to corrective measures or enforcement actions currently in progress.

We continue to push forward with operational efforts, infrastructure improvements and procedures designed to resolve recent odor issues and prevent future occurrences. Our objection to the documentation in the VN does not diminish our commitment or momentum in addressing the issues that have resulted in previously documented odors, including those related to H₂S. We will continue to update EGLE weekly with details of our advancements.

Going forward, we hope to continue what we feel has been productive collaboration with EGLE. We request that EGLE staff communicate with us when perceived issues arise to ensure accurate interpretation of observations, and to alert us to conditions which may require further attention without delay. If you have questions regarding our progress or this submittal, please contact me at (810) 989-6979.

Sincerely,

Smiths Creek Landfill



Matt Williams

Director, Smiths Creek Landfill

Cc/via e-mail:

Iranna Konanahalli, EGLE

Annette Switzer, EGLE

Christopher Ethridge, EGLE

Brad Myott, EGLE

Jenine Camilleri, EGLE

Joyce Zhu, EGLE

Kerry Kelly, EGLE

Erin Berish, CTI

Terri Zick, CTI

Attachments

Figure 1

H2S Monitoring Locations

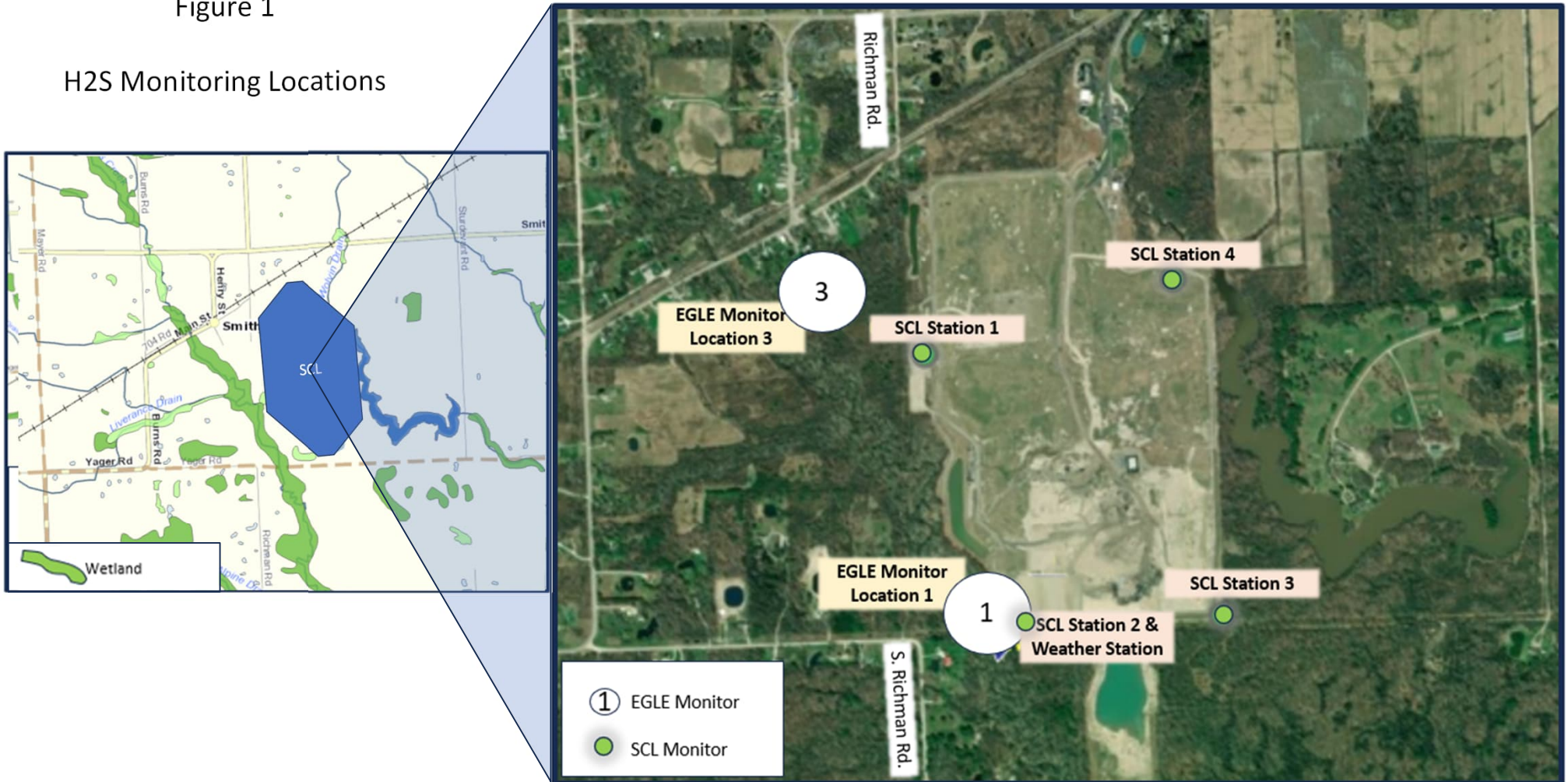


Figure 2
H2S Measurements, March 14, 202

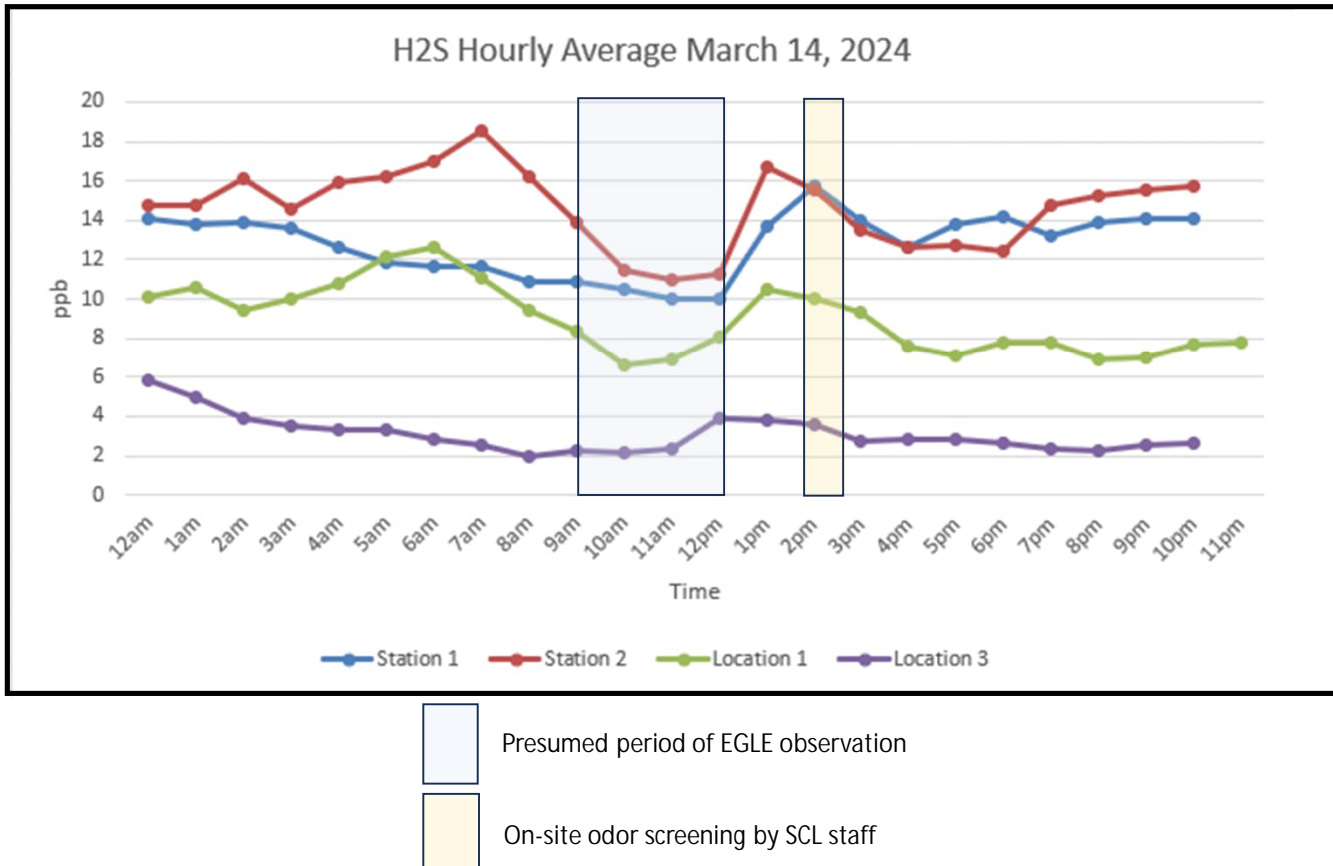
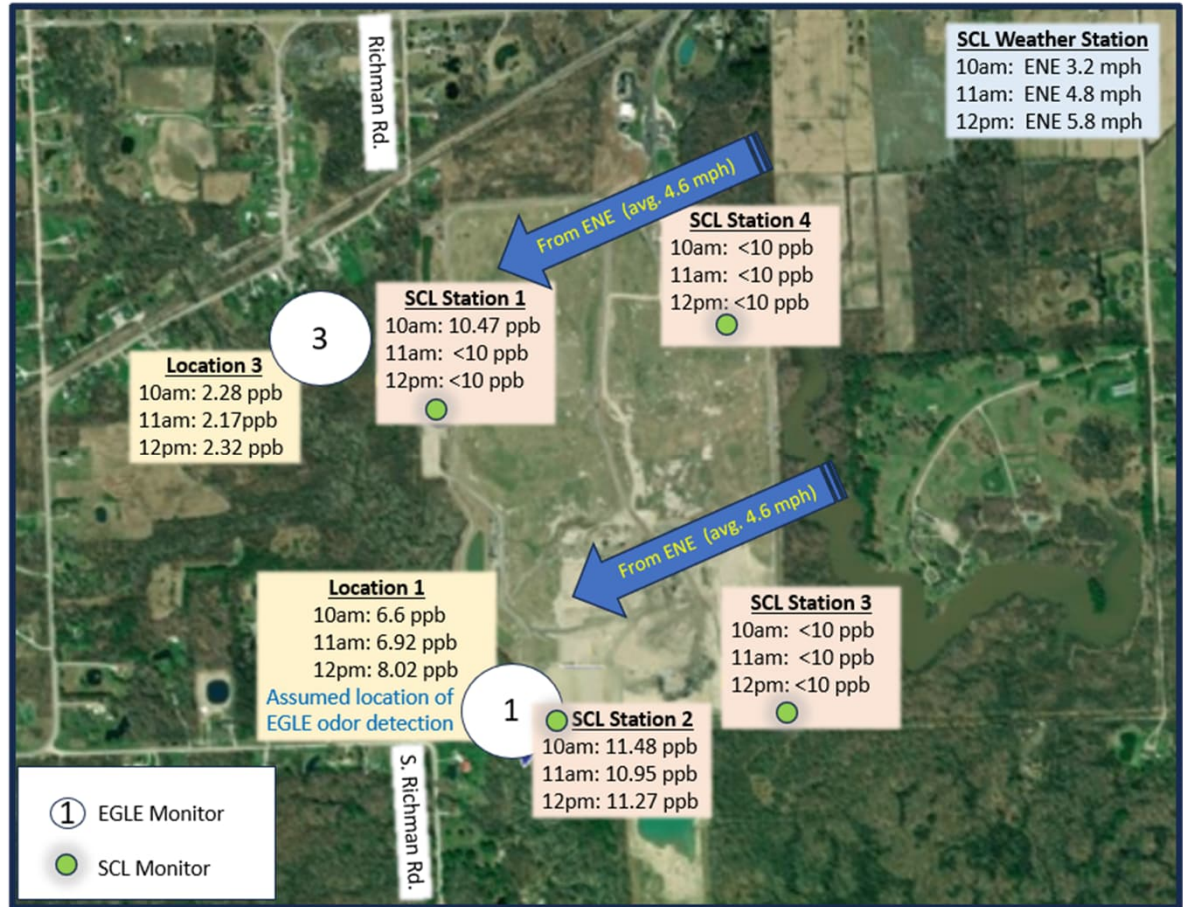
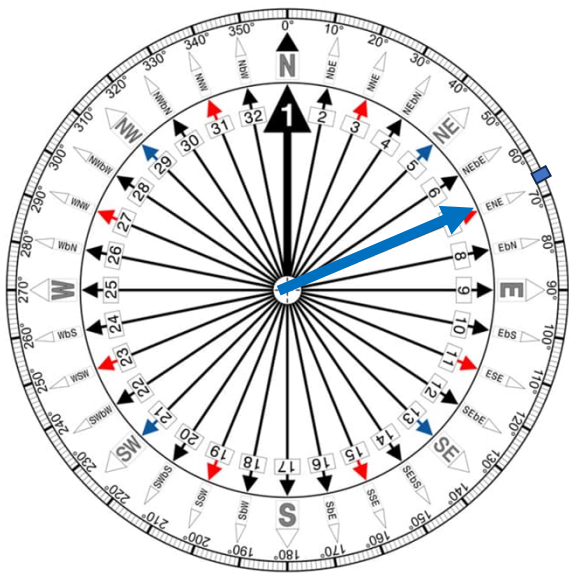


Figure 3

Off-Site Odor Survey
March 14, 2024

Assumed: 10:00am – 12:00pm

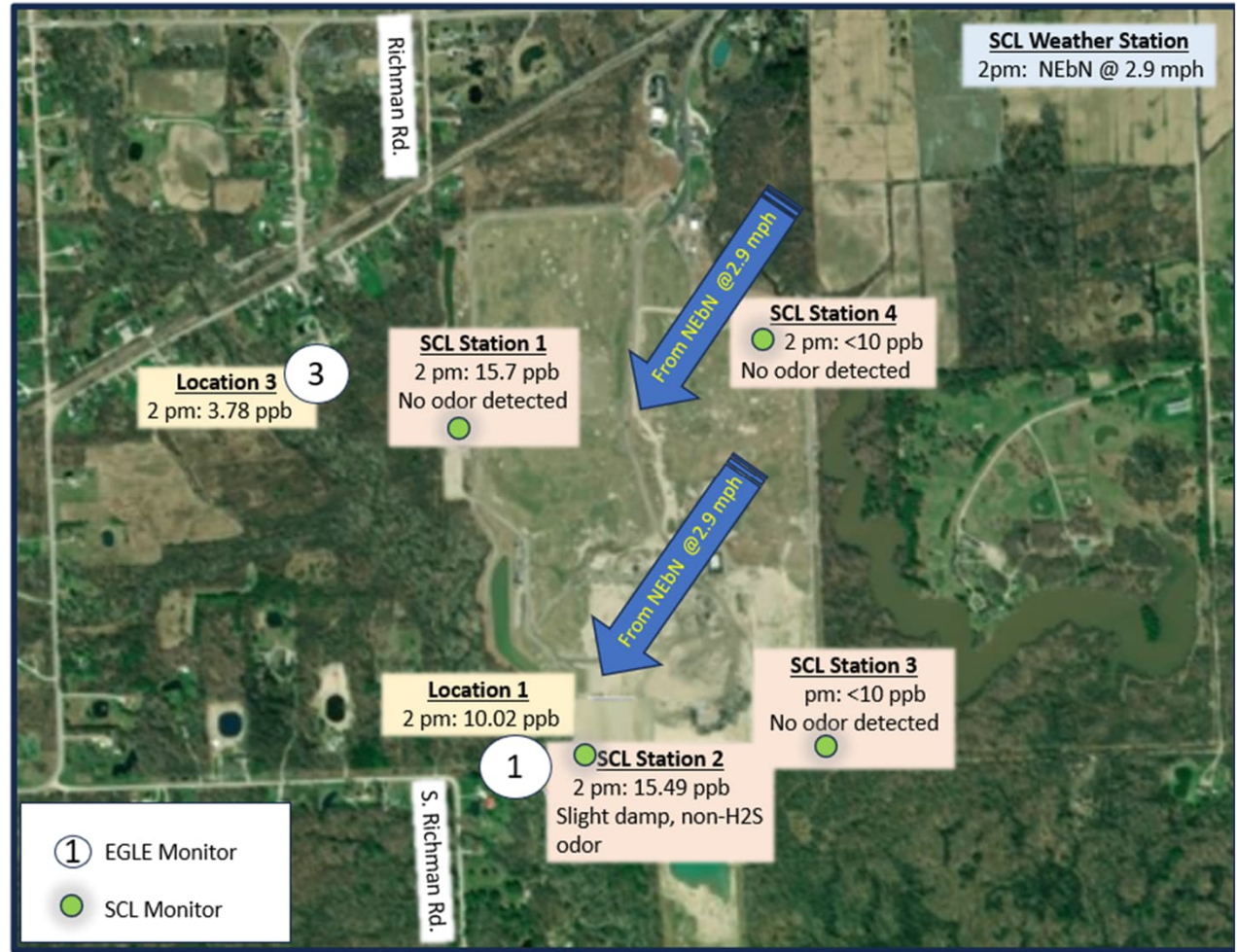
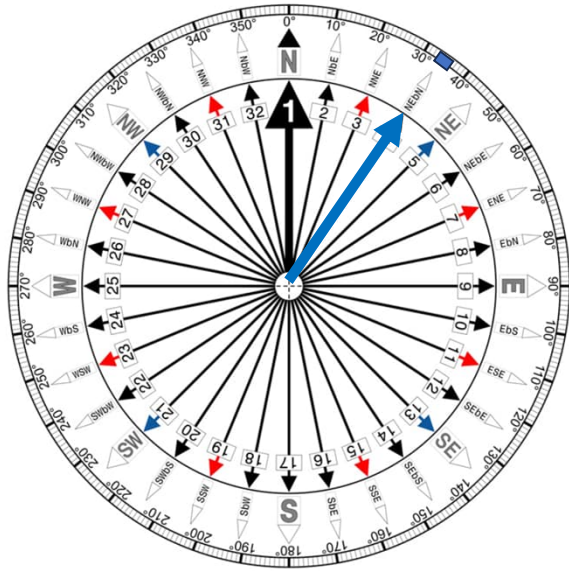


Date / Time	Envea Monitors (ppb) Hourly Average				Hourly Wind Speed (MPH)	Hourly Wind Direction (Compass)	Hourly Wind Direction (Degrees)	EGLE Monitors Hourly H2S Average (ppb)	
	Station 1	Station 2	Station 3	Station 4				Location 1	Location 3
3/14/2024 10am	10.47	11.48	<10	<10	3.2	ENE	66	6.6	2.28
3/14/2024 11am	<10	10.95	<10	<10	4.8	ENE	64	6.92	2.17
3/14/2024 12pm	<10	11.27	<10	<10	5.8	ENE	64	8.02	2.32

Figure 4

SCL On-Site Odor Survey

March 14, 2024, 2:15 pm



Date / Time	Envea Monitors (ppb) Hourly Average				Hourly Wind Speed (MPH)	Hourly Wind Direction (Compass)	Hourly Wind Direction (Degrees)	EGLE Monitors Hourly H2S Average (ppb)		
	Station 1	Station 2	Station 3	Station 4				Location 1	Location 3	
3/14/2024	2pm	15.7	15.49	<10	<10	2.9	NEbN	33	10.02	3.78