



Groundwater Monitoring Plan  
Fairfield I-77 Development Site  
Ridgeway, Fairfield County, South Carolina  
S&ME Project No. 210730B

PREPARED FOR:

**Luck Companies**  
**Post Office Box 29682**  
**Richmond, Virginia 23242**

PREPARED BY:

**S&ME, Inc.**  
**134 Suber Road**  
**Columbia, South Carolina 29210**

**March 16, 2021**



March 15, 2021

Luck Companies  
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Richmond, Virginia 23242

Attention: Mr. Bruce Smith

Submitted via email: [brucesmith@luckcompanies.com](mailto:brucesmith@luckcompanies.com)

Reference: **Groundwater Monitoring Plan  
Fairfield I-77 Development Site**  
Ridgeway, Fairfield County South Carolina  
S&ME Project No. 210730B

Dear Mr. Smith:

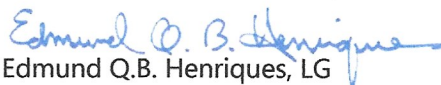
S&ME, Inc. (S&ME) has prepared the Groundwater Monitoring Plan in association with the proposed Luck Companies aggregate mine in Fairfield County, South Carolina. The Plan provides details as to how Luck Companies will monitor groundwater prior to and during operation of the proposed mine. The approved Plan will be considered and evolve into the Groundwater Monitoring Program for the Fairfield I-77 Development Site.

Please contact us at your convenience if there are questions regarding the information contained in this document.

Sincerely,  
S&ME, Inc.

  
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cc: South Carolina Department of Health and Environmental Control  
Mining and Reclamation  
2600 Bull Street  
Columbia, South Carolina 29201  
Attention: Mr. Joe Koon (via email [koonjm@dhec.sc.gov](mailto:koonjm@dhec.sc.gov))





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## 1.0 INTRODUCTION

S&ME has prepared the Groundwater Monitoring Plan (Plan) on behalf of Luck Companies in association with the proposed aggregate mine located north of S.C. Highway 34 East near Ridgeway in Fairfield County, South Carolina. The Plan was prepared for submittal to the Mining and Reclamation Section of the South Carolina Department of Health and Environmental Control (SCDHEC) to supplement the *Application For A Mine Operating Permit (Form MR-400)*. The purpose of the Plan is to measure static groundwater levels on a regular basis to establish a pre-mining baseline for groundwater levels and to document changes to groundwater levels during the mining operations. The information gathered will provide a basis to assess if observed changes indicate a potential to impact water supply wells on neighboring properties.

## 2.0 GROUNDWATER MONITORING

### 2.1 Proposed Well Installations

The Plan includes installation of three monitoring wells to a maximum depth of 400 feet to serve as points to monitor groundwater occurrence within the bedrock aquifer. The planned bedrock wells are identified as monitoring wells MW-1D, MW-2D and MW-3D, and their approximate locations are depicted on **Figure 1, Proposed Monitoring Wells**. Where applicable, available geophysical data will be used to target potential water bearing fractures. The wells will be constructed with a surface casing from near ground surface to the top of bedrock. The remaining portions of each well will be open borehole within the bedrock – no well screen will be installed.

One shallow monitoring well, MW-4S, will be installed in the approximate location depicted on **Figure 1, Proposed Monitoring Wells**. The target depth of monitoring well MW-4S will be to the depth of auger refusal or to a depth no greater than approximately 20 feet into the apparent saturated zone.

### 2.2 Proposed Monitoring Locations

The following monitoring wells will be included as part of the Plan: MW-1D, MW-2D, MW-3D and MW-4S. As noted previously, monitoring wells MW-1D, MW-2D and MW-3D, will be used as points to monitor groundwater within the bedrock aquifer. Monitoring well MW-4S, to be screened within the surficial aquifer, will serve as monitoring point for the surficial aquifer northwest of the planned mining area, respectively. This well set for purposes of the Plan are referred to moving forward as the Plan wells.

The bedrock fractures and diabase dikes, as inferred by a geophysical survey of the site performed by S&ME, tend to be oriented in a northwest-southeast direction. The Plan bedrock wells are located north, southwest and southeast of the planned mining operation and should be sufficient in providing a monitoring tool for the bedrock aquifer along these identified factures.

### 2.3 Monitoring Intervals and Data Collection

The monitoring locations detailed in Section 2.2 will be monitored for depth to water to determine the groundwater elevation. The depth to water will be measured with an electronic water probe and relative to the



top of the well casing. The depth to water measurements will be obtained on a monthly basis and reported to SCDHEC on a quarterly basis.

The groundwater elevation will be calculated by subtracting the depth to water measurement from the top of casing elevation. The locations of the Plan wells and top of casing elevations will be measured by a South Carolina licensed surveyor.

Each quarterly report will be submitted to SCDHEC within 30 days and will summarize the current and historical groundwater elevation dataset. If a statistically significant decrease in groundwater elevation occurs, which is determined by a South Carolina licensed geologist or professional engineer to be an indicator that mine dewatering operations have resulted in potential impacts to neighboring wells, then the licensed professional will prepare and submit a written report to SCDHEC within five business days from when the determination is made.

**Table 2-1 – Plan Sampling Summary**

Well ID	Surface Casing Length (feet)	Total Depth (feet)	Monitoring Parameters <i>Monthly up to one year prior to operations;</i> <i>Monthly after operations begin</i>	Top of Casing Elevation
MW-1D	TBD	Proposed up to 400	Depth to water	Requires Survey
MW-2D	TBD	Proposed up to 400	Depth to water	Requires Survey
MW-3D	TBD	Proposed up to 400	Depth to water	Requires Survey
MW-4S	NA	Auger refusal or 20 feet of saturated zone	Depth to water	Requires Survey

TBD = to be determined

NA = not applicable

## **Appendices**

**Appendix I – Figure**



**PROPOSED MONITORING WELLS**

LIMITED HYDROGEOLOGIC ASSESSMENT  
FAIRFIELD I-77 DEVELOPMENT SITE  
RIDGEMAN, FAIRFIELD COUNTY, SOUTH CAROLINA

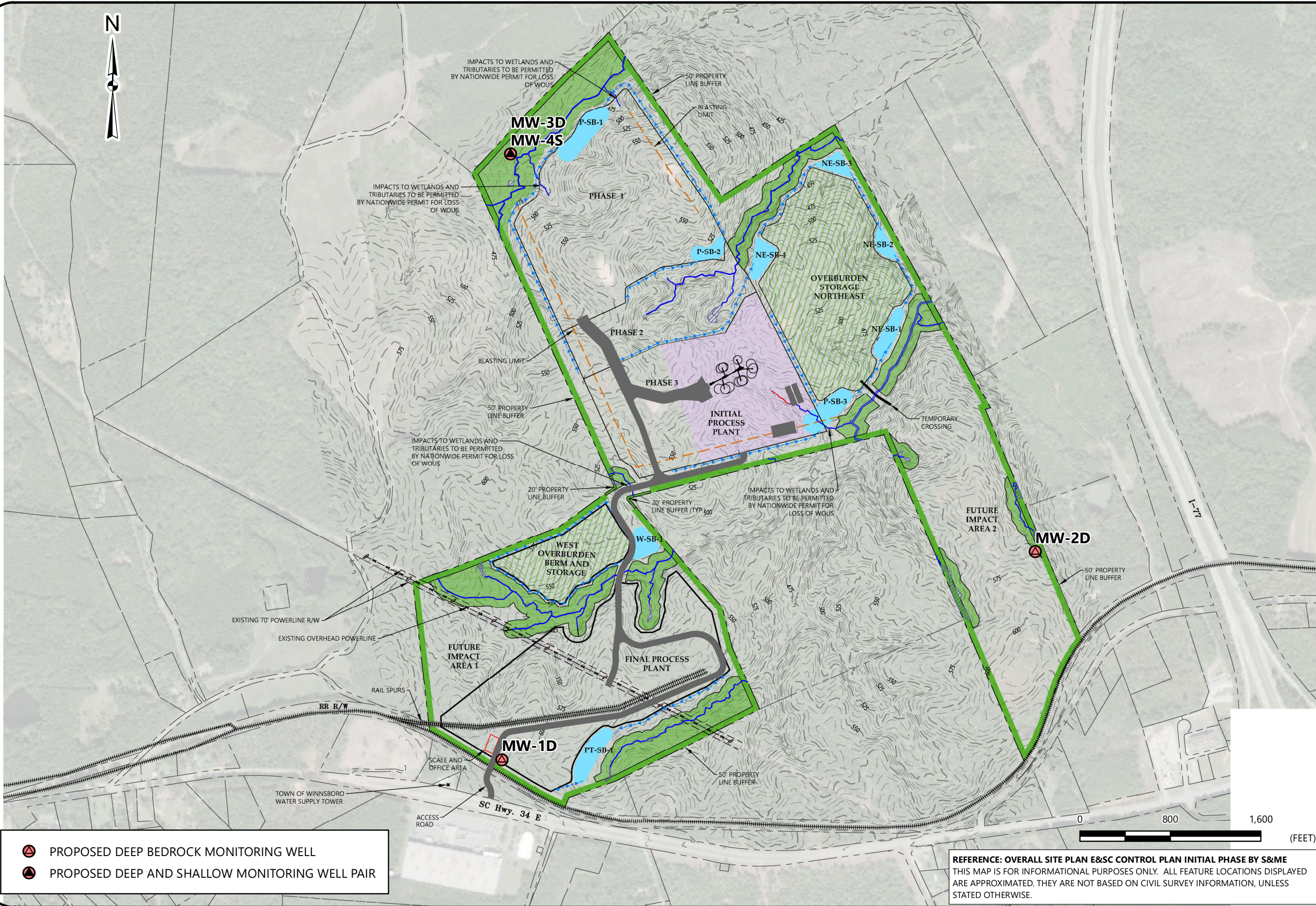
SCALE:  
1" = 800'

DATE:  
3-15-21

PROJECT NUMBER  
210730B

FIGURE NO.

**1**



**REFERENCE: OVERALL SITE PLAN E&SC CONTROL PLAN INITIAL PHASE BY S&ME**  
THIS MAP IS FOR INFORMATIONAL PURPOSES ONLY. ALL FEATURE LOCATIONS DISPLAYED ARE APPROXIMATED. THEY ARE NOT BASED ON CIVIL SURVEY INFORMATION, UNLESS STATED OTHERWISE.