AMERICAN WATER ENGINEERING SERVICES, LLC

GROUNDWATER MONITORING PLAN
VARRA COULSON MINE
WELD COUNTY, COLORADO

AWES PROJECT # 2025-VCI-001

MAY 2025

Prepared for:
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GROUNDWATER MONITORING WORK PLAN
VARRA-COULSON RESOURCE PROJECT
WELD COUNTY, COLORADO

1.0 INTRODUCTION

This Groundwater Monitoring Plan (Plan) has been prepared by AWES, LLC on behalf of Varra Companies, Inc. (Varra) for the Coulson mine located in Weld County, Colorado (Figure 1). The current operation includes dry mine gravel extraction from three cells that encompass approximately 101 acres. This plan is an update to the original Groundwater Monitoring Plan. The original plan included obtaining monthly water levels and reporting these data to the Division of Reclamation, Mining and Safety (Division) on an annual basis. This update is required as four of the fourteen original wells have been destroyed or decommissioned.

1.1 Objectives

The objectives of this Plan are to identify potential liabilities with the extraction of aggregate under semi-saturated conditions. Specific objectives for the Varra project are described below.

- To determine the aerial extent of drawdown associated with mine dewatering;
- To determine the effects of dry mine aggregate extraction on the local hydrology;
- To generate predictive models on possible adverse drawdown in adjacent domestic wells; and
- To determine the effects of lined pit reclamation on the local groundwater flow regime.

1.2 Background Information

The gravel quarry is located in section 10 of Township 5 North, Range 65 West of the 6th Principal Meridian. The surrounding land use consists of agricultural, rural residential and oil and gas gathering. The proposed mine area occupies an estimated 101 acres. The extraction depth varied between 35 and 50 feet below grade.

Information provided by geotechnical investigations, monitoring well water level data and water resource evaluation reports document the local and regional hydrogeology. In August 2013, 14 soil borings were drilled from ground surface to bedrock to determine the potential aggregate mass within the proposed mine boundary. These borings were completed as one-inch groundwater monitoring wells and the well locations are depicted on Figure 2. The depth to bedrock within the proposed mine pit boundaries varied between 35 and 50 feet below ground surface. In general soil conditions consist of less than one to six feet of top soil and sandy clay underlain by sand and gravel with occasional clay and poorly graded sand lenses. The coarse alluvial deposits are underlain by bedrock which consists of siltstone, sandstone and claystone.

2.0 GROUNDWATER MONITORING

2.1 Monitoring Well Installation

As mentioned in August 2013, DrillPro, Inc. of Denver, CO drilled 14 soil borings from ground surface to bedrock using direct push techniques and completed the borings as one-inch groundwater monitoring wells. The monitoring wells were designated as P1 through P14. Wells P-4, P-7, P-8 and P-13 have either

been mined out or silted in. The remaining wells still provide adequate gradient control and it is not anticipated the additional wells will be required.

2.2 Groundwater Level Measurements

All monitoring wells were surveyed to the nearest 0.01 foot for vertical elevation and to the nearest 0.5 foot for horizontal location. Depth to static water level will be measured to the nearest tenth of a foot using an electronic water level indicator. The water level measurement will be taken from a permanent reference point on the top of the well casing. Groundwater level measurements in all wells have been measured by an electric water level indicator on a monthly basis since August 2013. Varra will continue to measure water levels on a monthly basis during dewatering operations. After reclamation groundwater levels will be measured on a quarterly basis until the mine permit has been withdrawn.

2.3 Contingency Plan and Abatement

As mine dewatering will create a groundwater sink it is highly unlikely that changes in groundwater quality will occur due to mining activities. As water levels will be measured on a monthly basis unanticipated groundwater drawdown can be predicted and evaluated for possible injury to off-site well owners. The extent of any abatement will be determined by negotiations with affected parties. Abatement actions if required may include one or more of the following: the use of a recharge pond (or ponds), improvements to the wells, and the supply of alternative sources of water. Varra as described in Exhibit M, "Other Permits and Licenses" to the permit application has obtained a Well Permit from the Colorado Division of Water Resources as the excavation has exposed groundwater. As part of the dewatering process, Varra will obtain agreements as needed with well owners who may be impacted by the operation and reclamation of the mine.

If Varra receives a complaint from a well owner, the following steps shall be taken.

1) Varra will notify the Division within seven days of the complaint.

2) After the Division is notified, or if the complaint is received by the Division and Varra is notified, Varra will review the data and available information and submit a report to the Division within 30 days. The report will include documentation of discussions with the well owner who made the complaint and a review of available baseline data from the affected well and vicinity to evaluate whether changes were due to seasonal variations, climate, mining, or other factors. The report will identify the extent of potential or actual impacts associated with the factors.

3) If mining or reclamation activities by Varra are determined to be a significant contributing factor to the groundwater impacts, the impacts agreed to be attributable to Varra will be mitigated by Varra to the satisfaction of the Division.

3.0 ORGANIZATION AND STAFF ASSIGNMENTS

3.1 Project Personnel

Mr. Garrett Varra of Varra will serve as field coordinator and will be responsible for obtaining water levels.

3.2 Subcontractors

No subcontracted services are anticipated for this project.

4.0 REMARKS

The scope of work is based upon current available information and our understanding of this project. As the project develops, changes to the project scope of work may be required. If changes in the scope of work are dictated by the needs of the project, these changes will be presented prior to implementation.

This Groundwater Monitoring Plan was prepared by **AWES, LLC**.

Joby Adams

Date 5/30/2025

Joby L. Adams, P.G., REM
Principal/Hydrogeologist

Figure 1 Site Location Map

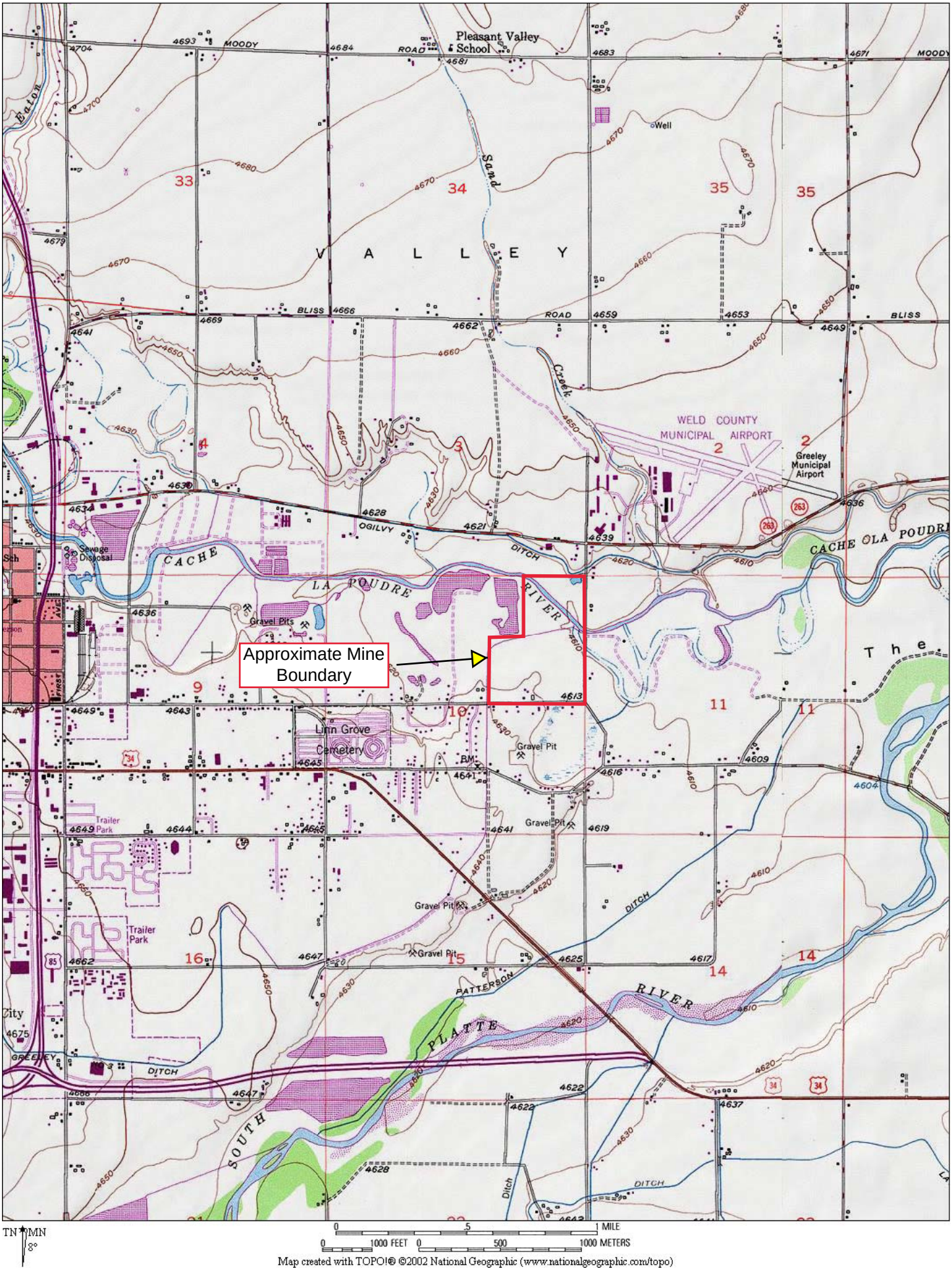

Figure 2 Existing Piezometer Locations