WATTENBERG LAKES 2023 ANNUAL REPORT

INTRODUCTION

This annual report provides an evaluation of 2023 groundwater conditions across the Wattenberg Lakes project area. Assessments are provided in reference to baseline conditions presented in the Wattenberg Lakes Site Hydrostratigraphic Evaluation (AGI 2006). The baseline report describes the regional geologic setting and site conditions and includes an alluvial aquifer characterization.

This report has been prepared for submittal to the U.S. Army Corps of Engineers in accordance with Special Condition G and Special Condition S of the Department of the Army Section 404 Permit No. 200080189.

BASELINE CONDITIONS

The Wattenberg Lakes site is located in valley fill alluvium associated with the South Platte River. The river is used extensively for irrigated agriculture in the valley and on neighboring upland properties. Additional adjacent land uses include aggregate mining to the north and south. The community of Wattenberg is located north of the site, including the community water supply well. Local recharge to the alluvial aquifer has consisted of applied irrigation water infiltration and deep percolation of precipitation. The South Platte River forms a natural sink for the alluvial aquifer and groundwater flow to the river, along with local groundwater pumping, represent the major sources of aquifer discharge.

Exploration borings and groundwater monitoring information were used to construct a conceptual hydrogeologic model of the site. For the purpose of characterizing the site hydrogeologic conditions, the subsurface materials can be subdivided into three units: sandy/clay overburden, permeable unconsolidated sand and gravel deposits, and low permeability bedrock. The bedrock is covered by alluvial sand and gravel throughout the property. In general, the thickness of the alluvium thins from approximately 30 feet to less than 10 feet from the northeast to the west and southwest across the site. Local fine-grained silt or gravel and cobble zones occur as lenses or discontinuous beds within the alluvium, but none of the layers appear to be laterally continuous. Therefore, the subsurface information suggests that the alluvium can conceptually be considered one aquifer.

Baseline alluvial aquifer conditions were established from four to six years of groundwater monitoring. Installation of groundwater monitoring wells in 2002 included the drilling and completion of nine (9) wells spaced around the property perimeter. To establish baseline conditions, groundwater data was collected from eight (8) of the wells on a monthly basis from January 2002 through December 2005. Additionally, twenty (20) shallow piezometers were installed in May 2000 to monitor groundwater elevations in wetland areas on the site. Wetland piezometers were hand dug, screened their entire length, and sealed with a collar near the surface. Groundwater levels were measured in the piezometers on a weekly or bi-weekly basis during the growing season (approximately May through September) for the years 2000 through 2003. Beginning in 2004, measurements were taken on a monthly basis.

In general, under baseline conditions, groundwater elevations tend to fluctuate similarly in all of the monitoring wells. Baseline groundwater fluctuations are also consistent in observations from the wetland piezometers. Monitoring data indicates that groundwater elevations across the site have typically decreased through the winter months, being at their lowest in January through March. Data indicates that groundwater elevations on the site increase rapidly during the spring (April through June) and then

remain fairly constant through summer and into the fall months. The water elevation data were also used to estimate baseline groundwater flow direction and gradient. Using the available data, the groundwater gradient has been estimated to be approximately 0.002 to 0.003 (0.2 to 0.3 feet decline per 100 feet of horizontal distance) from southwest to northeast across the site. However, at the eastern edge of the site, near the South Platte River, groundwater gradients become less definable.

SITE CONDITIONS

Detailed site conditions have been documented since 2006 in annual reports prepared for submittal to the U.S. Army Corps of Engineers in accordance with Special Condition G and Special Condition S of the Department of the Army Section 404 Permit No. 200080189. In addition to detailed 2023 changes in site conditions, a brief summary of previous site activities is provided below.

Several factors, in addition to mining and reclamation operations on the site, likely influence the surface gradient of the alluvial aquifer across the Wattenberg Lakes property. The aquifer is confined on the eastern boundary by the South Platte River and the alluvium pinches out on the western edge of the property. The Brighton Ditch and irrigated agricultural land adjacent to the western edge of the property likely provide seasonal recharge to the alluvium. Additional adjacent land uses that likely influence the local alluvial aquifer include aggregate mining to the north and south and the community of Wattenberg water supply well to the north.

2006 Changes to Site Conditions

- The Huett Ditch was relocated to a location further east on the site.
- The tree farm located on the project site ended operations, including irrigation activities.
- Temporary mining activities were conducted on the project site. Temporary excavation started in the northeast corner of the site and associated dewatering operations ran from February 2006 to October 2006.
- Specific changes to adjacent land uses in 2006 were not known.

2007 Changes to Site Conditions

- Following the Huett Ditch relocation in 2006, the original ditch was left in place. The new ditch, located further east on the site, was constructed to convey surface water flows and the bottom of the ditch was lined with a relatively impermeable compacted clay material. It is believed that, although the original ditch may have periodically received groundwater discharge, historic surface water flows in the Huett Ditch were more likely sustained by discharges from a lake south of the Wattenberg Lakes site. It is possible that these surface water flows may have had a localized effect on groundwater elevations and gradients adjacent to the ditch. It is not anticipated that surface flows carried by the relocated lined ditch will have a significant effect on local groundwater.
- In 2007, Aggregate Industries personnel observed surface water flows in both the original Huett Ditch and the relocated ditch. Flow in the ditches was apparently originating from the lake south of the site.
- No mining or dewatering activities were conducted in 2007.
- Specific changes to adjacent land uses in 2007 were not known.

2008 Changes to Site Conditions

- In 2008, Aggregate Industries personnel observed surface water flows in both the original Huett Ditch and the relocated ditch. As in previous years, flow in the ditches was apparently originating from the lake south of the site.
- No mining or dewatering activities were conducted in 2008.
- Over the past several years, aggregate mining operations south of the Wattenberg Lakes site have progressed to the north. The mining pit and dewatering operations are now located within a couple hundred feet of the south property line of the Wattenberg Lakes site. Other specific changes to adjacent land uses in 2008 were not known.

2009 Changes to Site Conditions

- In 2009, Aggregate Industries personnel observed surface water flows in both the original Huett Ditch and the relocated ditch. As in previous years, flow in the ditches was apparently originating from the lake south of the site.
- No mining or dewatering activities were conducted in 2009.
- Over the past several years, aggregate mining operations south of the Wattenberg Lakes site have progressed to the north. The mining pit and dewatering operations are located within a couple hundred feet of the south property line of the Wattenberg Lakes site.
- Other specific changes to adjacent land uses in 2009 were not known.

2010 Changes to Site Conditions

- In 2010, Aggregate Industries personnel observed surface water flows in both the original Huett Ditch and the relocated ditch. As in previous years, flow in the ditches was apparently originating from the lake south of the site.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2010.
- Adjacent mining operations are now located within a couple hundred feet of the Wattenberg Lakes site south property line and it appears that dewatering of the mining pits continued in 2010.
- Other specific changes to adjacent land uses in 2010 were not known.

2011 Changes to Site Conditions

- In 2011, no observations were made for the original Huett Ditch and the relocated ditch with regard to surface flow.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2011.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2011, apparently including dewatering of the mining pits. Two cells appear to be in various stages of mining and reclamation. One cell is less than 100 feet from the Wattenberg Lakes south property line and seems to be mined out or nearly mined out and is being backfilled. A slurry wall was constructed around the other cell in 2011, which lies adjacent to and south-southeast of the Wattenberg site by approximately 300 feet.
- Other specific changes to adjacent land uses in 2011 were not known.

2012 Changes to Site Conditions

- In 2012, no observations were made for the original Huett Ditch and the relocated ditch with regard to surface flow.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2012.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2012, apparently including dewatering and backfilling of the mining cell that is less than 100 feet from the Wattenberg Lakes south property line. In 2011, a slurry wall was constructed around another mining cell that lies approximately 300 feet south-southeast of the Wattenberg site.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2012. If atypical groundwater gradients continue to be observed in the northern portion of the Wattenberg Lakes site, activities north of the property line will be evaluated in 2013.
- Other specific changes to adjacent land uses in 2012 were not known.

2013 Changes to Site Conditions

- In 2013, one of the planned slurry walls was constructed on the Wattenberg Lakes site. Construction began in March and was completed in June.
- In 2013, no surface flow observations were made for the original Huett Ditch.
- Surface flow was observed in the relocated Huett Ditch during 2013.
- In September, historically high flows in the South Platte River flooded a significant portion of the Wattenberg Lakes site.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2013 prior to slurry wall construction.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2013, however the mining cell that is less than 100 feet from the Wattenberg Lakes south property line did not appear to be dewatered in 2013. In 2011, a slurry wall was constructed around another mining cell that lies approximately 300 feet south-southeast of the Wattenberg site.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2013.
- Other specific changes to adjacent land uses in 2013 were not known.

2014 Changes to Site Conditions

- In 2014, most of the original Huett Ditch is located within the constructed slurry wall area. No surface flow observations of the original Huett Ditch or the relocated ditch were made in 2014.
- In May and June, the South Platte River experienced high spring runoff flows, but significant flooding did not occur on the Wattenberg Lakes site.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2014 outside of the constructed slurry wall.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2014, however the mining cell that is less than 100 feet from the Wattenberg Lakes south property line did not appear to be dewatered in 2014. In 2011, a slurry wall was constructed around another mining cell that lies approximately 300 feet south-southeast of the Wattenberg site.

- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2014.
- Other specific changes to adjacent land uses in 2014 were not known.

2015 Changes to Site Conditions

- In 2015, most of the original Huett Ditch is located within the constructed slurry wall area. No surface flow observations of the original Huett Ditch or the relocated ditch were made in 2015.
- Heavy spring rains affected the South Platte River basin in 2015, including the Wattenberg Lakes site.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2015 outside of the constructed slurry wall.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2015, however the mining cell that is less than 100 feet from the Wattenberg Lakes south property line did not appear to be dewatered in 2015.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2015.
- Other specific changes to adjacent land uses in 2015 were not known.

2016 Changes to Site Conditions

- In 2016, most of the original Huett Ditch is located within the constructed slurry wall area. No surface flow observations of the original Huett Ditch or the relocated ditch were made in 2016.
- No mining or dewatering activities were conducted on the Wattenberg Lakes site in 2016 outside of the constructed slurry wall.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2016, however the mining cell that is less than 100 feet from the Wattenberg Lakes south property line did not appear to be dewatered in 2016.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2016.
- Other specific changes to adjacent land uses in 2016 were not known.

2017 Changes to Site Conditions

- In 2017, most of the original Huett Ditch is located within the constructed slurry wall area. No surface flow observations of the original Huett Ditch or the relocated ditch were made in 2017.
- Limited mining and dewatering activities were conducted on the Wattenberg Lakes site during October through December 2017 that were outside of, and to the west of, the constructed slurry wall.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2017. Unlike recent years, however, the mining cell that is less than 100 feet from the Wattenberg Lakes south property line appeared to be dewatered during 2017.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2017.
- Other specific changes to adjacent land uses in 2017 were not known.

2018 Changes to Site Conditions

- In 2018, most of the original Huett Ditch is located within the constructed slurry wall area. No surface flow observations of the original Huett Ditch or the relocated ditch were made in 2018.
- Mining and dewatering activities were conducted on the Wattenberg Lakes site outside of the constructed slurry wall during 2018.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2018. The mining cell that is less than 100 feet from the Wattenberg Lakes south property line appeared to be dewatered and was being backfilled during 2018.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2018.
- Other specific changes to adjacent land uses in 2018 were not known.

2019 Changes to Site Conditions

- In 2019, most of the original Huett Ditch is located within the constructed slurry wall area. No surface flow observations of the relocated ditch were made in 2019.
- Mining and dewatering activities were conducted on the Wattenberg Lakes site outside of the constructed slurry wall during 2019, however, by the end of 2019 mining and dewatering at the site had temporarily ceased.
- Mining operations adjacent to the Wattenberg Lakes site south property line continued in 2019. The mining cell that is less than 100 feet from the Wattenberg Lakes south property line appeared to be dewatered and was being backfilled during 2019.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2019.
- Other specific changes to adjacent land uses in 2019 were not known.

2020 Changes to Site Conditions

- In 2020, most of the original Huett Ditch is located within the constructed slurry wall area. Surface flow observations in 2020 of the relocated ditch suggest that the relocated ditch flowed at least intermittently during the year.
- There were no mining or dewatering activities on the Wattenberg Lakes site outside of the constructed slurry wall during 2020.
- Mining and/or reclamation operations adjacent to the Wattenberg Lakes site south property line continued in 2020. However, specific mining and/or reclamation activities are unknown.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2020.
- Other specific changes to adjacent land uses in 2020 were not known.

2021 Changes to Site Conditions

- In 2021, most of the original Huett Ditch is located within the constructed slurry wall area. Surface flow observations in 2021 of the relocated ditch suggest that the relocated ditch flowed at least intermittently during the year.
- There were no mining or dewatering activities on the Wattenberg Lakes site outside of the constructed slurry wall during 2021.

- Mining and/or reclamation operations adjacent to the Wattenberg Lakes site south property line continued in 2021. However, specific mining and/or reclamation activities are unknown.
- Activities adjacent to the Wattenberg Lakes site north property line were not known in 2021.
- Other specific changes to adjacent land uses in 2021 were not known.

2022 Changes to Site Conditions

- Continuity of the relocated Huett Ditch continues. Surface flows are regularly observed during spring/early summer months.
- Dewatering activities are actively occurring from Pond 1 "Struck Pond" (not slurry walled) to the ski lake. Holcim is actively draining this pond to prepare for reclamation activities to include slurry wall construction and expansion of Struck Pond to the west.
- Current operations occurring nearby include Platte Valley, and the land immediately north of County Road 6 is in final reclamation.
- The nearby Baurer Pit is permitted, but not in operations.

2023 Changes to Site Conditions

- No mining took place in 2023.
- Claystone Construction mobilization to begin construction of the slurry wall on the south side of the pond.

MONITORING RESULTS

Groundwater elevation data was collected from eight monitoring wells, identified in Figures 2 through 5, of the Department of the Army Section 404 Permit No. 200080189 and in accordance with Special Conditions G.1 and G.2 of the permit. Groundwater elevation data collected through 2023 are provided in Table 1 and illustrated in Figure 1. The 2023 water elevation data were also used to construct estimated representative water table contour maps for the site (see Figure 2 through Figure 5).

Prior to interpretation, the monitoring results were reviewed for quality control and deviation from the monitoring plan. During original monitoring well installation, MW-6 was installed outside of the Wattenberg Lakes site boundary and had not been accessible prior to 2020. In 2020, MW-6 became available for monitoring and data from the well is now included in the evaluations. However, no baseline data was available from MW-6 prior to mining operations at Wattenberg Lakes. Due to initial questionable depth to water readings since the well was reestablished in the monitoring plan, MW-6 was refurbished in August 2022.

DISCUSSION

Groundwater elevations in most monitoring wells generally reflected a similar pattern throughout the year, with typical baseline seasonal variations that include groundwater elevation increases during the spring and early summer months from winter-time lows were observed in most wells (see Figure 1). Slight variations in groundwater levels exist from 2022 to 2023, but in general, conditions on the Wattenberg Lakes site remained consistent.

Localized variations in groundwater elevation may exist between the groundwater ponds (Pond 1, Pond 2, Pond 3, and MA1), the backfilled areas (MA2 and MA3), and the native alluvium, however, these

variations could not be evaluated with the existing data and are assumed to be minor relative to the overall site groundwater gradient. Similarly, it is believed that localized groundwater effects from the constructed slurry wall were observed, but the existing data does not allow specific groundwater gradients near the slurry wall to be evaluated. Although it was not possible to evaluate specific localized groundwater variations caused by the groundwater ponds, backfill, and the slurry wall (see Figure 2 through Figure 5), in general, the overall gradient (change in groundwater elevation) observed from the southwest corner of the site (MW-7) to the northeast side of the site (MW-3) was consistent with baseline data.

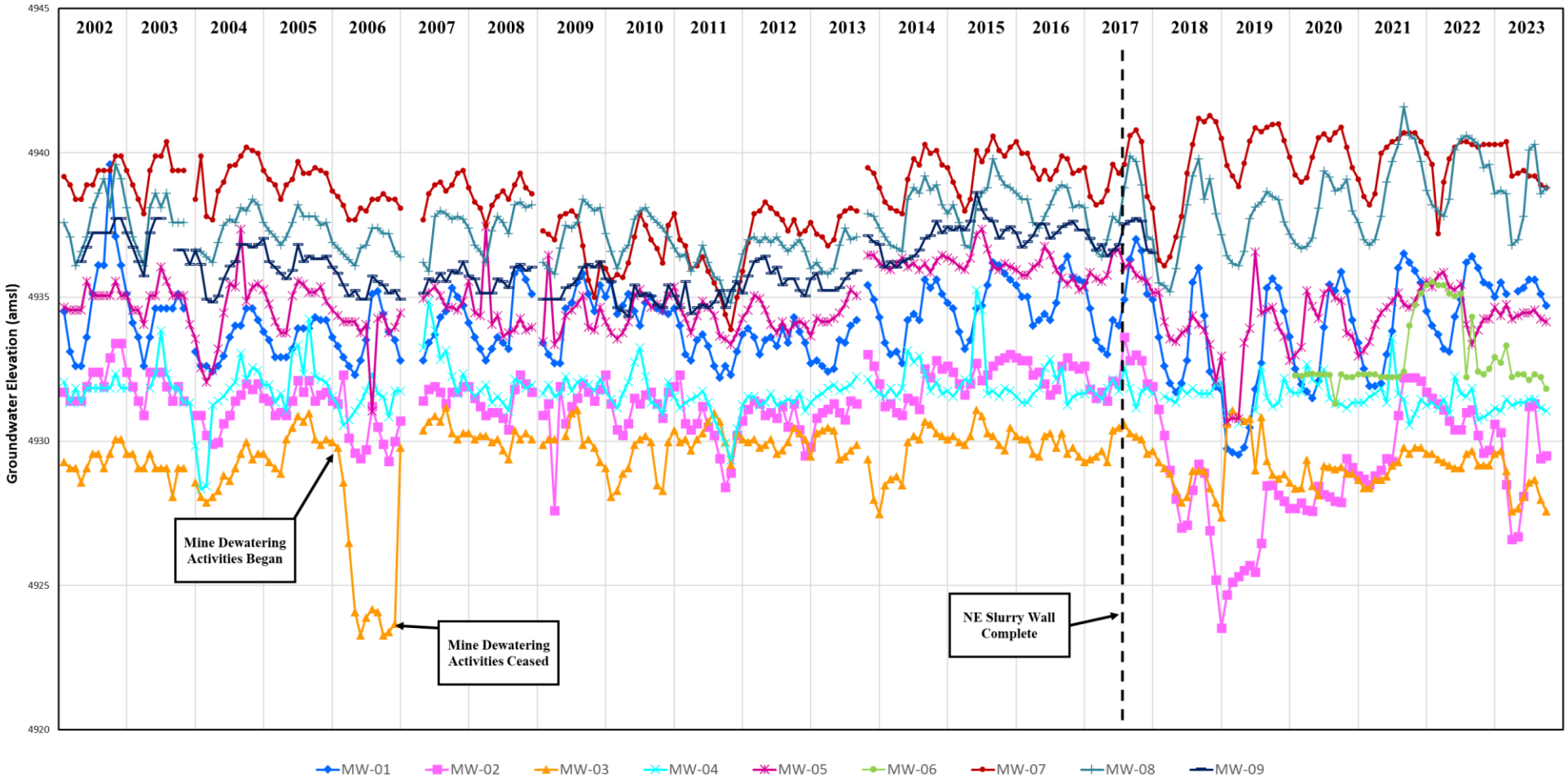
With the current Wattenberg Lakes site observed groundwater effects from site operation activities in 2023, no interim or final mitigation action is recommended at this time. In the event that unacceptable changes as determined by the U.S. Army Corps of Engineers are observed in groundwater elevations as mining progresses, the significance of the changes will be evaluated and, if necessary, mitigation will be proposed that addresses the changes. Changes in measured groundwater elevations will be evaluated based on natural groundwater fluctuations and changes in non-project related local conditions including precipitation, river flows, and land use. The evaluation will also identify potential impacts associated with changes in groundwater hydrodynamics. (Special Condition G.5)

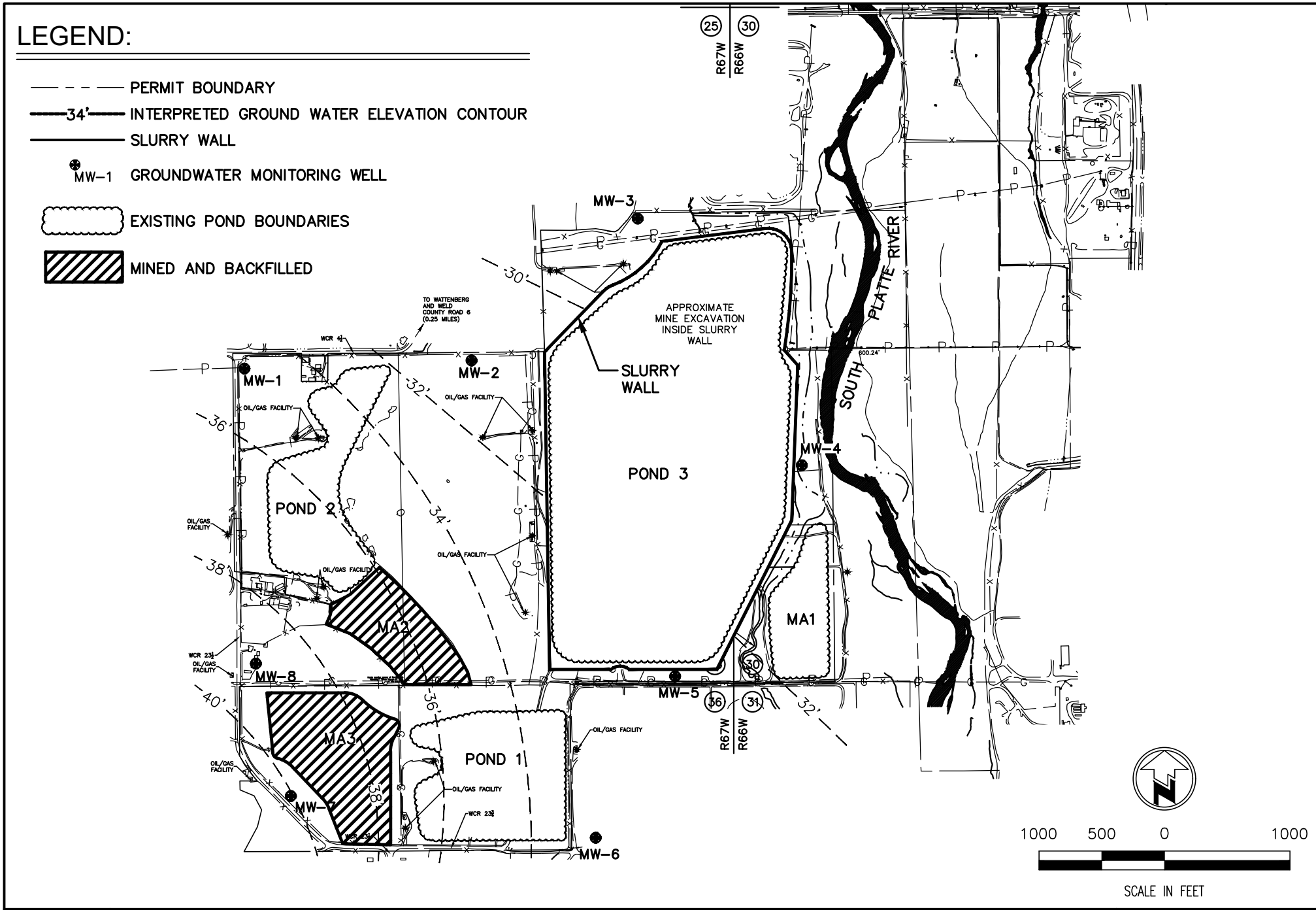
REFERENCES

Applegate Group, Inc. (AGI) 2006. Aggregate Industries – WCR, Inc. Wattenberg Lakes Site Hydrostratigraphic Evaluation, Department of the Army Permit No. 200080189. January 2006.

Figure 1

Wattenberg Groundwater Monitoring Data





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HOLCIM - WCR, INC.

WATTENBERG LAKES 2023 ANNUAL REPORT

JANUARY 2023 GROUNDWATER TABLE TOPOGRAPHY

Applegate Group, Inc.
Water Resource Advisors for the West
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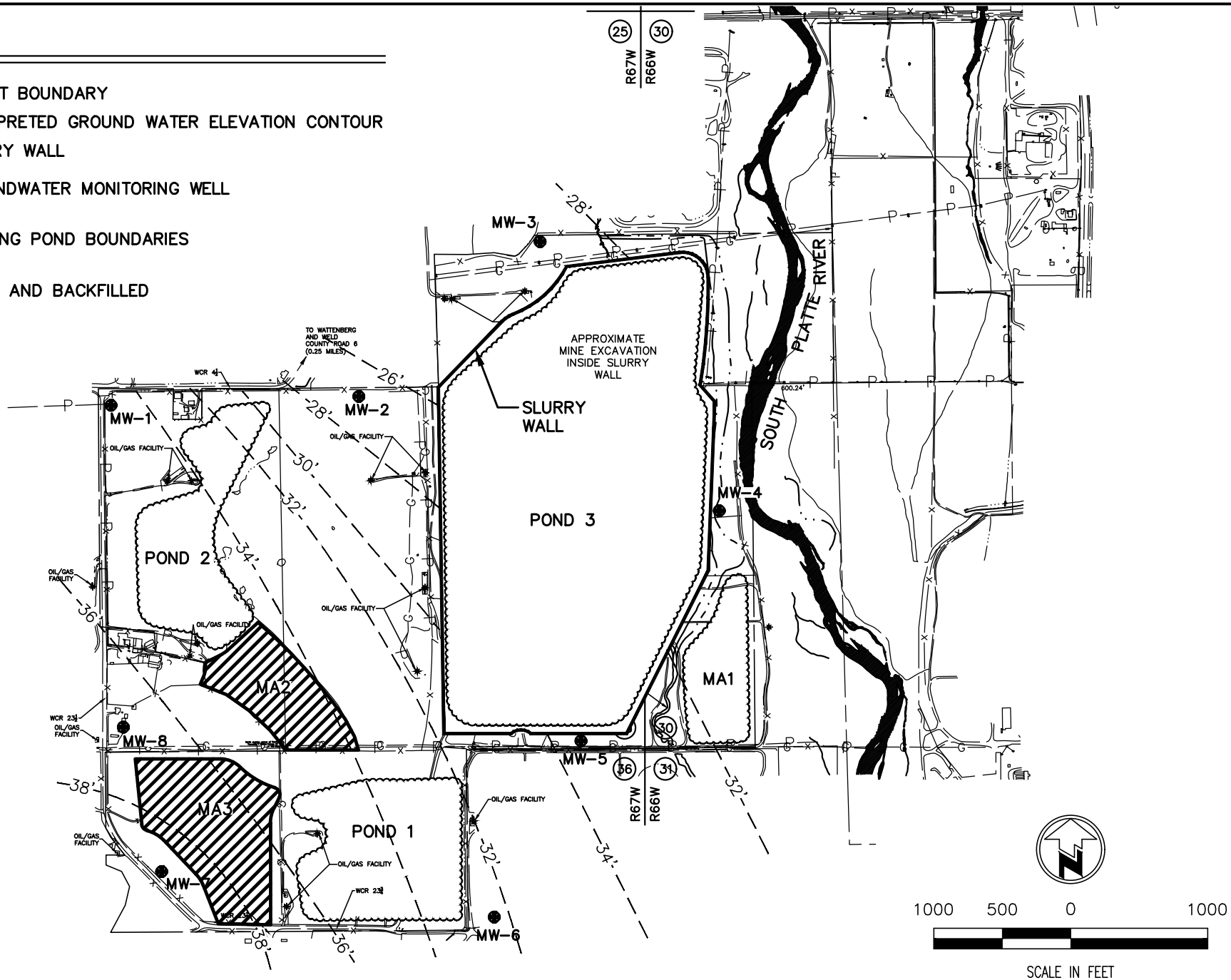
Denver, CO 80234-2728
(303) 452-6611
Fax: (303) 452-2759
email: info@applegategroup.com Website: www.applegategroup.com

LEGEND:

- PERMIT BOUNDARY
- 34' INTERPRETED GROUND WATER ELEVATION CONTOUR
- SLURRY WALL
- MW-1 GROUNDWATER MONITORING WELL
- EXISTING POND BOUNDARIES
- MINED AND BACKFILLED



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MAY 2023 GROUNDWATER TABLE TOPOGRAPHY

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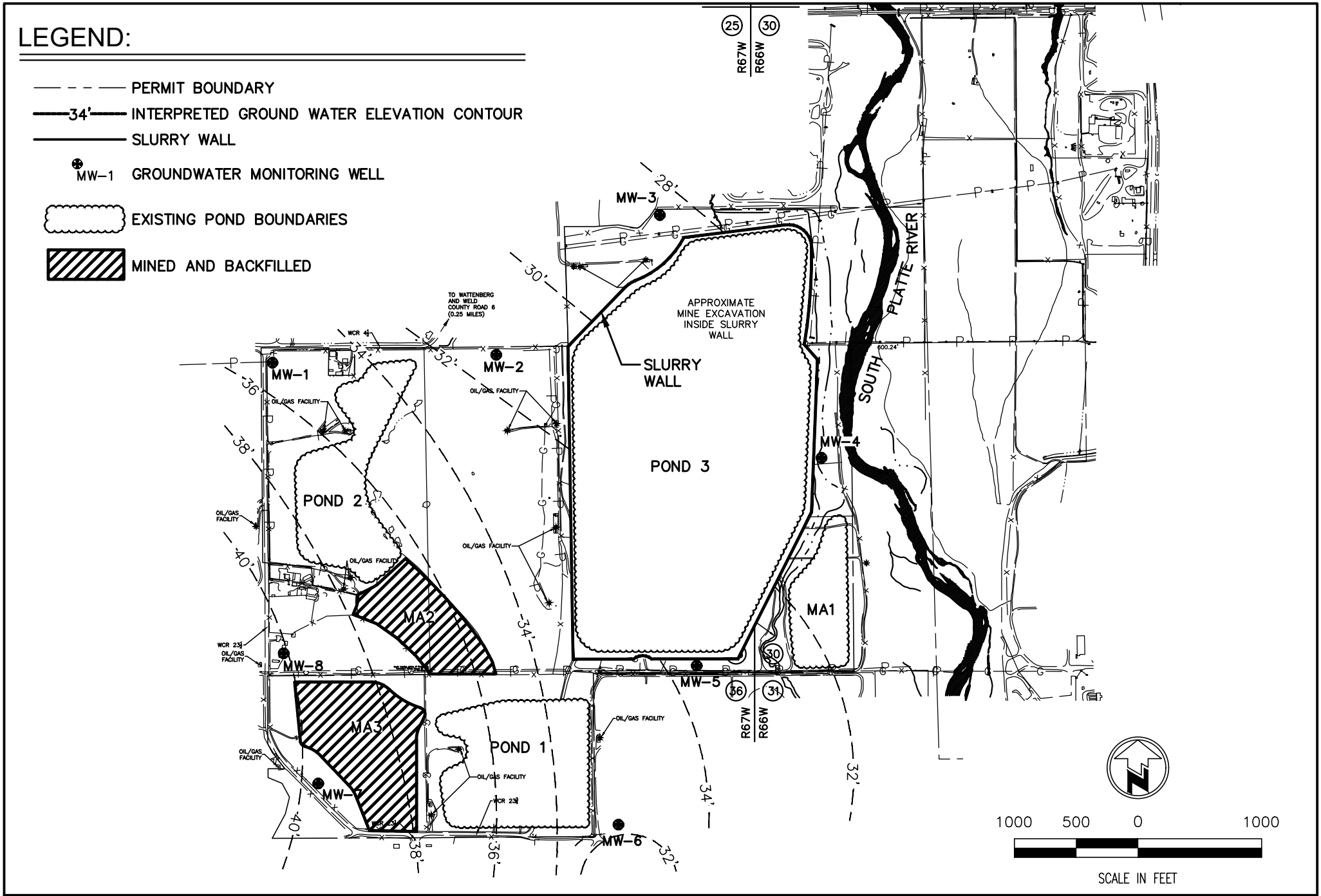

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AUGUST 2023 GROUNDWATER TABLE TOPOGRAPHY

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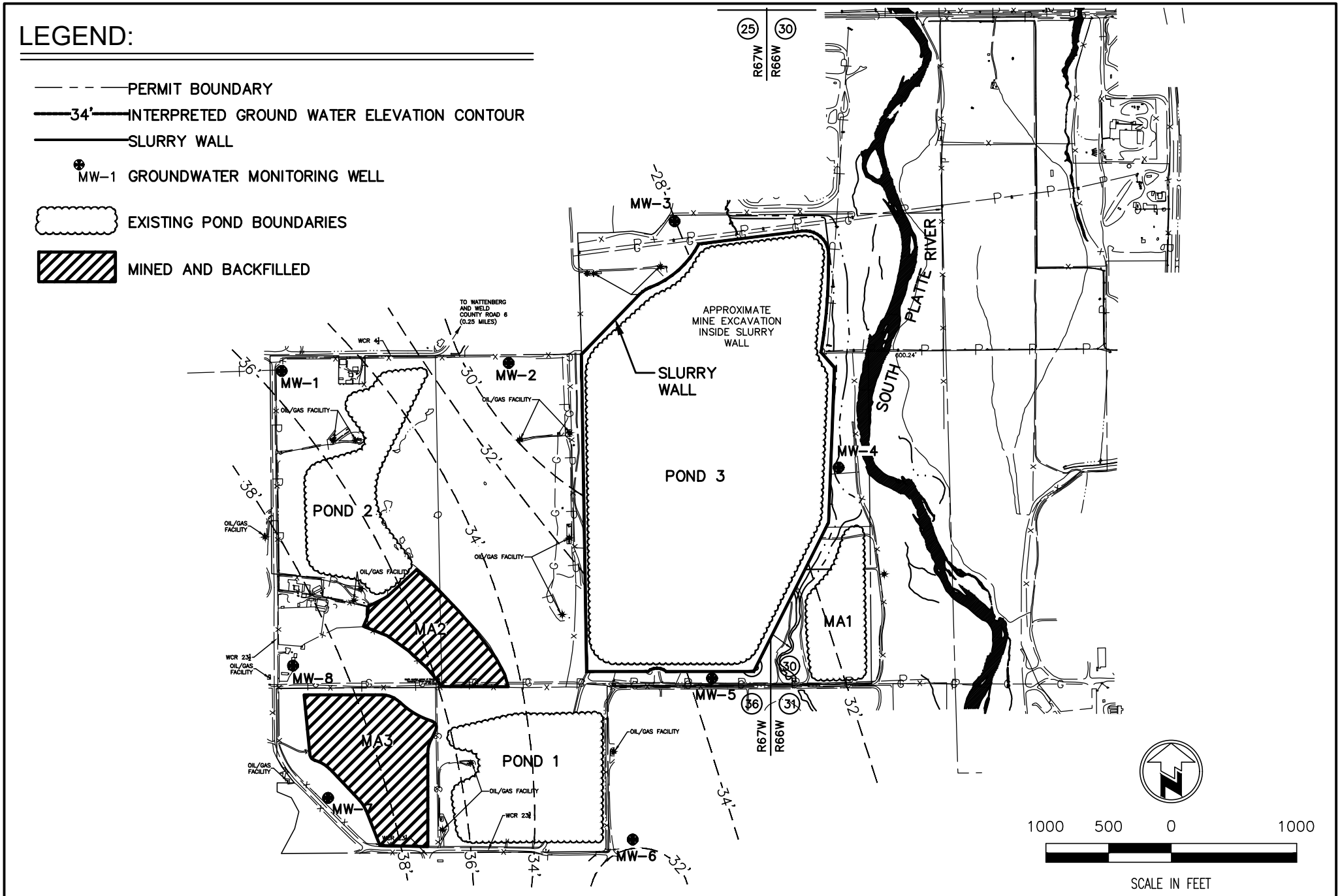

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OCTOBER 2023 GROUNDWATER TABLE TOPOGRAPHY

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