DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL MANAGEMENT BUREAU
HARD ROCK PROGRAM
PO BOX 200901
HELENA MT 59620-0901
(406) 444-4953

Operating Permit Number: 00030
Project Name: Continental Mine
Report Due date: 6/13/21

(Enclose Required $100.00 Annual Fee)

ANNUAL PROGRESS REPORT FOR OPERATING PERMITS

Issued Pursuant to Title 82, Chapter 4, Part 3, MCA
And Administrative Rules Adopted Thereunder
(See 82-4-339, MCA and 17.24.118 for specific guidance.)

Name and Address of Permittee:	Location, and Legal Description of Permitted Area
Montana Resources, LLP 600 Shields Avenue Butte, Montana	Miles: 1-2 Direction From: East Nearest Town: Butte
	Section(s): T____ N R____ E County: ____
Contact Person(s): Mark Thompson Phone Number(s): (406) 496-3211 E-Mail Address: mthompson@montanaresources.com	See Attached Description in Section 1.0

Operation Status is currently: Active ☒ Inactive ☐ Abandoned ☐.
If the operation is currently inactive (operation is not extracting ore for future use or processing), indicate the provision of ARM 17.24.150(2) or (3) relied on to rebut the assumption that the operation has not been abandoned or completed. (Supporting documentation must be attached to this annual report.) N/A

Acreage & Bond
Acreage within permit area Acreage permitted for disturbance Acreage Currently Disturbed Acreage currently bonded Amount of bond Amount of Obligated Bond
See Attachments.

A. Annual report information required under Section 82-4-339, MCA

1. Pursuant to Section 82-4-339(1)(e), MCA, if the permittee is a corporation or other business entity, **ATTACH** a list of names and addresses of current officers, directors, owners of 10% or more of any class of voting stock, partners and the like and its resident agent for service of process. See Attached in Section 1.0.

2. Average number of payroll employees and on-site contracted employees who worked during the previous permit year: January to March 380; April to June 395; July to September 395; October to December 380

3. Average number of anticipated payroll employees and on-site contracted employees who ***will work*** during the next permit year: January to March 380; April to June 395; July to September 395; October to December 380

4. **ATTACH** two (2) copies of an updated map showing permit area, land disturbed during the last twelve (12) months, land to be disturbed in the next twelve (12) months. See Appendix No. 1 and Section 6.0 Disturbance and Bonding.

5. Estimate of acreage to be newly disturbed by the operation in the next 12-month period: 25

6. The date of beginning, amount, and current status of reclamation performed during the previous twelve months. This information should be provided in the responses of **B**. 2, **B**. 3, and **B**. 4 below.
See Section 2.0 Reclamation Summary and Appendix 2.

7. If the operation is completed, indicate date of completion of operations: N/A

B. Annual report information required under 17.24.118, ARM

1. The number of acres of land affected by the operation during the preceding year and cumulatively: **See Attachments**

2. The extent of backfilling and grading performed during the preceding year and cumulatively:
See Attachments

3. Two copies of maps showing the information required in **B.** 1 and **B.** 2 above. This information may be included on the maps submitted in response to **A.** 4. **Answered in A.4.**

4. Each annual report must include a status report on revegetation, pursuant to 82-4-339(1)(f)(iv) and (vi), MCA which includes the extent of reclamation (seeding or planting) performed during the preceding year (in narrative and map form), including: (a) the area of land planted; (b) the type of planting or seeding; (c) the mixtures and amounts seeded; (d) the species, location, and method of planting for site or species specific plantings; (e) the date of seeding or planting; (f) cumulative acres reseeded to date; and (g) cumulative acres of completed reclamation and the date each increment was completed. Please respond to (a) through (g) in the space provided below. **Attach** additional pages as necessary.

See Section 2.0 Reclamation Summary and Appendix 2.

5. Each annual report must include an inventory of soils volumes which includes: (a) cubic yards salvaged in the preceding year and cumulatively; (b) cubic yards to be salvaged in the coming year; (c) cumulative volume of soils contained in stockpiles; and (d) replaced soil depths and volumes. Please respond to (a) through (d) in the space provided below. **Attach** additional pages as necessary.
See Section 5.0 Materials Inventory.

6. Each annual report for those operations using cyanide or other metal leaching solvents or reagents or having the potential to generate acid must provide a narrative summary of water balance conditions during the preceding year and identify excess water holding capacity at the time of the annual report.
N/A

7. When incremental bond has been approved, additional bond must be submitted, in the amount required, with the annual report and the status of incremental bonding must be described.
N/A

8. If changes in facilities have occurred in the preceding year, the annual report must update the permit map required under Section 82-4-335(5)(e), MCA and ARM 17.24.115(k). The updated map must depict all approved surface features, as required by the department, in or associated with the permit area, reproduced at a scale applicable for field use. (This information can be included on the map required above under **A.**4.)
See Attachments.

9. If cultural resource mitigations identified in the permit will be ongoing through the life of the operation, the annual report must include an updated cultural resource management table, including a list of sites mitigated and disturbed in the preceding year and sites to be mitigated and disturbed in the coming year.
N/A

10. If comprehensive water monitoring is required by the permit, each annual report must include an evaluation of water monitoring reports submitted during the preceding year. The evaluation must include trend analyses for those key site-specific parameters required by the department in the permit.
See Section 4.0 Water Quality & Monitoring and Appendix 3.

11. If site-specific geologic conditions identified in the permit indicate the need for geologic monitoring, each annual report must include monitoring results and must report materials balances as required in the permit.
N/A

12. If site-specific closure requirements identified in the permit include monitoring for cyanide neutralization, acid rock drainage development, or similar occurrences, the annual report must include an evaluation of monitoring and testing data required in the permit for closure.
N/A

13. Each annual report must include the names of key personnel for maintenance and monitoring, if the operation is shut down.
See Attached in Section 1.0.

14. Each annual report must include any other relevant information required by the permit or stipulations.
See Attached.

I CERTIFY THAT THE ABOVE STATEMENTS AND ATTACHED INFORMATION ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Signature: _____, Date: June 10, 2021

Title: Vice President of Environmental Affairs

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Date Received: _____ Annual Fee Received: Yes ☐ No ☐ Map Updated? Yes ☐ No ☐

If applicable, information required by ARM 17.24.150(2) or (3) provided with the appropriate attachments? (OP Status) Yes ☐ No ☐

Information Required by 82-4-339(1)(e), MCA Attached? (A 1-3) Yes ☐ No ☐

Will Permittee Expand Scope of Operation During Next Permit Year? Yes ☐ No ☐

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL MANAGEMENT BUREAU
HARD ROCK PROGRAM
PO BOX 200901
HELENA MT 59620-0901
(406) 444-4953

Operating Permit Number: 00030A
Project Name: Continental Mine
Report Due date: 6/13/2021

(Enclose Required $100.00 Annual Fee)

ANNUAL PROGRESS REPORT FOR OPERATING PERMITS

Issued Pursuant to Title 82, Chapter 4, Part 3, MCA
And Administrative Rules Adopted Thereunder
(See 82-4-339, MCA and 17.24.118 for specific guidance.)

Name and Address of Permittee:	Location, and Legal Description of Permitted Area
Montana Resources, LLP 600 Shields Avenue Butte, Montana	Miles: 1-2 Direction From: East Nearest Town: Butte
	Section(s): T____ N R____ E County: ____
Contact Person(s): Mark Thompson Phone Number(s): (406) 496-3211 E-Mail Address: mthompson@montanaresources.com	See Attached Description in Section 1.0

Operation Status is currently: Active ☒ Inactive ☐ Abandoned ☐.
If the operation is currently inactive (operation is not extracting ore for future use or processing), indicate the provision of ARM 17.24.150(2) or (3) relied on to rebut the assumption that the operation has not been abandoned or completed. (Supporting documentation must be attached to this annual report.) N/A

Acreage & Bond
Acreage within permit area Acreage permitted for disturbance Acreage Currently Disturbed Acreage currently bonded Amount of bond Amount of Obligated Bond
See Attachments.

A. Annual report information required under Section 82-4-339, MCA

1. Pursuant to Section 82-4-339(1)(e), MCA, if the permittee is a corporation or other business entity, **ATTACH** a list of names and addresses of current officers, directors, owners of 10% or more of any class of voting stock, partners and the like and its resident agent for service of process. See Attached in Section 1.0.

2. Average number of payroll employees and on-site contracted employees who worked during the previous permit year: January to March 380 April to June 395 July to September 395 October to December 380

3. Average number of anticipated payroll employees and on-site contracted employees who ***will work*** during the next permit year: January to March 380 April to June 395 July to September 395 October to December 380

4. **ATTACH** two (2) copies of an updated map showing permit area, land disturbed during the last twelve (12) months, land to be disturbed in the next twelve (12) months. See Appendix No. 1 and Section 6.0 Disturbance and Bonding.

5. Estimate of acreage to be newly disturbed by the operation in the next 12-month period: 25

6. The date of beginning, amount, and current status of reclamation performed during the previous twelve months. This information should be provided in the responses of **B**. 2, **B**. 3, and **B**. 4 below.
See Section 2.0 Reclamation Summary and Appendix 2.

7. If the operation is completed, indicate date of completion of operations: N/A

B. Annual report information required under 17.24.118, ARM

1. The number of acres of land affected by the operation during the preceding year and cumulatively: **See Attachments**

2. The extent of backfilling and grading performed during the preceding year and cumulatively:
See Attachments

3. Two copies of maps showing the information required in **B**. 1 and **B**. 2 above. This information may be included on the maps submitted in response to **A**. 4. **Answered in A.4.**

4. Each annual report must include a status report on revegetation, pursuant to 82-4-339(1)(f)(iv) and (vi), MCA which includes the extent of reclamation (seeding or planting) performed during the preceding year (in narrative and map form), including: (a) the area of land planted; (b) the type of planting or seeding; (c) the mixtures and amounts seeded; (d) the species, location, and method of planting for site or species specific plantings; (e) the date of seeding or planting; (f) cumulative acres reseeded to date; and (g) cumulative acres of completed reclamation and the date each increment was completed. Please respond to (a) through (g) in the space provided below. **Attach** additional pages as necessary.

See Section 2.0 Reclamation Summary and Appendix 2.

5. Each annual report must include an inventory of soils volumes which includes: (a) cubic yards salvaged in the preceding year and cumulatively; (b) cubic yards to be salvaged in the coming year; (c) cumulative volume of soils contained in stockpiles; and (d) replaced soil depths and volumes. Please respond to (a) through (d) in the space provided below. **Attach** additional pages as necessary.
See Section 5.0 Materials Inventory.

6. Each annual report for those operations using cyanide or other metal leaching solvents or reagents or having the potential to generate acid must provide a narrative summary of water balance conditions during the preceding year and identify excess water holding capacity at the time of the annual report.
N/A

7. When incremental bond has been approved, additional bond must be submitted, in the amount required, with the annual report and the status of incremental bonding must be described.
N/A

8. If changes in facilities have occurred in the preceding year, the annual report must update the permit map required under Section 82-4-335(5)(e), MCA and ARM 17.24.115(k). The updated map must depict all approved surface features, as required by the department, in or associated with the permit area, reproduced at a scale applicable for field use. (This information can be included on the map required above under **A.**4.)
See Attachments.

9. If cultural resource mitigations identified in the permit will be ongoing through the life of the operation, the annual report must include an updated cultural resource management table, including a list of sites mitigated and disturbed in the preceding year and sites to be mitigated and disturbed in the coming year.
N/A

10. If comprehensive water monitoring is required by the permit, each annual report must include an evaluation of water monitoring reports submitted during the preceding year. The evaluation must include trend analyses for those key site-specific parameters required by the department in the permit.
See Section 4.0 Water Quality & Monitoring and Appendix 3.

11. If site-specific geologic conditions identified in the permit indicate the need for geologic monitoring, each annual report must include monitoring results and must report materials balances as required in the permit.
N/A

12. If site-specific closure requirements identified in the permit include monitoring for cyanide neutralization, acid rock drainage development, or similar occurrences, the annual report must include an evaluation of monitoring and testing data required in the permit for closure.
N/A

13. Each annual report must include the names of key personnel for maintenance and monitoring, if the operation is shut down.
See Attached in Section 1.0.

14. Each annual report must include any other relevant information required by the permit or stipulations.
See Attached.

I CERTIFY THAT THE ABOVE STATEMENTS AND ATTACHED INFORMATION ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Signature: _____, Date: June 10, 2021

Title: Vice President of Environmental Affairs

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Date Received: _____ Annual Fee Received: Yes ☐ No ☐ Map Updated? Yes ☐ No ☐

If applicable, information required by ARM 17.24.150(2) or (3) provided with the appropriate attachments? (OP Status) Yes ☐ No ☐

Information Required by 82-4-339(1)(e), MCA Attached? (A 1-3) Yes ☐ No ☐

Will Permittee Expand Scope of Operation During Next Permit Year? Yes ☐ No ☐

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL MANAGEMENT BUREAU
HARD ROCK PROGRAM
PO BOX 200901
HELENA MT 59620-0901
(406) 444-4953

Operating Permit Number: 041
Project Name: Continental Mine
Report Due date: 6/13/2021

(Enclose Required $100.00 Annual Fee)

ANNUAL PROGRESS REPORT FOR OPERATING PERMITS

Issued Pursuant to Title 82, Chapter 4, Part 3, MCA
And Administrative Rules Adopted Thereunder
(See 82-4-339, MCA and 17.24.118 for specific guidance.)

Name and Address of Permittee:	Location, and Legal Description of Permitted Area
Montana Resources, LLP 600 Shields Avenue Butte, Montana	Miles: 1-2 Direction From: East Nearest Town: Butte
	Section(s): T____ N R____ E County: ____
Contact Person(s): Mark Thompson Phone Number(s): (406) 496-3211 E-Mail Address: mthompson@montanaresources.com	See Attached Description in Section 1.0

Operation Status is currently: Active ☒ Inactive ☐ Abandoned ☐.
If the operation is currently inactive (operation is not extracting ore for future use or processing), indicate the provision of ARM 17.24.150(2) or (3) relied on to rebut the assumption that the operation has not been abandoned or completed. (Supporting documentation must be attached to this annual report.) N/A

Acreage & Bond
Acreage within permit area Acreage permitted for disturbance Acreage Currently Disturbed Acreage currently bonded Amount of bond Amount of Obligated Bond
See Attachments.

A. Annual report information required under Section 82-4-339, MCA

1. Pursuant to Section 82-4-339(1)(e), MCA, if the permittee is a corporation or other business entity, **ATTACH** a list of names and addresses of current officers, directors, owners of 10% or more of any class of voting stock, partners and the like and its resident agent for service of process. See Attached in Section 1.0.

2. Average number of payroll employees and on-site contracted employees who worked during the previous permit year: January to March 380; April to June 395; July to September 395; October to December 380

3. Average number of anticipated payroll employees and on-site contracted employees who ***will work*** during the next permit year: January to March 380; April to June 395; July to September 395; October to December 380

4. **ATTACH** two (2) copies of an updated map showing permit area, land disturbed during the last twelve (12) months, land to be disturbed in the next twelve (12) months. See Appendix No. 1 and Section 6.0 Disturbance and Bonding.

5. Estimate of acreage to be newly disturbed by the operation in the next 12-month period: 25

6. The date of beginning, amount, and current status of reclamation performed during the previous twelve months. This information should be provided in the responses of **B**. 2, **B**. 3, and **B**. 4 below.
See Section 2.0 Reclamation Summary and Appendix 2.

7. If the operation is completed, indicate date of completion of operations: N/A

B. Annual report information required under 17.24.118, ARM

1. The number of acres of land affected by the operation during the preceding year and cumulatively: **See Attachments**

2. The extent of backfilling and grading performed during the preceding year and cumulatively:
See Attachments

3. Two copies of maps showing the information required in **B**. 1 and **B**. 2 above. This information may be included on the maps submitted in response to **A**. 4. **Answered in A.4.**

4. Each annual report must include a status report on revegetation, pursuant to 82-4-339(1)(f)(iv) and (vi), MCA which includes the extent of reclamation (seeding or planting) performed during the preceding year (in narrative and map form), including: (a) the area of land planted; (b) the type of planting or seeding; (c) the mixtures and amounts seeded; (d) the species, location, and method of planting for site or species specific plantings; (e) the date of seeding or planting; (f) cumulative acres reseeded to date; and (g) cumulative acres of completed reclamation and the date each increment was completed. Please respond to (a) through (g) in the space provided below. **Attach** additional pages as necessary.

See Section 2.0 Reclamation Summary and Appendix 2.

5. Each annual report must include an inventory of soils volumes which includes: (a) cubic yards salvaged in the preceding year and cumulatively; (b) cubic yards to be salvaged in the coming year; (c) cumulative volume of soils contained in stockpiles; and (d) replaced soil depths and volumes. Please respond to (a) through (d) in the space provided below. **Attach** additional pages as necessary.
See Section 5.0 Materials Inventory.

6. Each annual report for those operations using cyanide or other metal leaching solvents or reagents or having the potential to generate acid must provide a narrative summary of water balance conditions during the preceding year and identify excess water holding capacity at the time of the annual report.
N/A

7. When incremental bond has been approved, additional bond must be submitted, in the amount required, with the annual report and the status of incremental bonding must be described.
N/A

8. If changes in facilities have occurred in the preceding year, the annual report must update the permit map required under Section 82-4-335(5)(e), MCA and ARM 17.24.115(k). The updated map must depict all approved surface features, as required by the department, in or associated with the permit area, reproduced at a scale applicable for field use. (This information can be included on the map required above under **A**.4.)
See Attachments.

9. If cultural resource mitigations identified in the permit will be ongoing through the life of the operation, the annual report must include an updated cultural resource management table, including a list of sites mitigated and disturbed in the preceding year and sites to be mitigated and disturbed in the coming year.
N/A

10. If comprehensive water monitoring is required by the permit, each annual report must include an evaluation of water monitoring reports submitted during the preceding year. The evaluation must include trend analyses for those key site-specific parameters required by the department in the permit.
See Section 4.0 Water Quality & Monitoring and Appendix 3.

11. If site-specific geologic conditions identified in the permit indicate the need for geologic monitoring, each annual report must include monitoring results and must report materials balances as required in the permit.
N/A

12. If site-specific closure requirements identified in the permit include monitoring for cyanide neutralization, acid rock drainage development, or similar occurrences, the annual report must include an evaluation of monitoring and testing data required in the permit for closure.
N/A

13. Each annual report must include the names of key personnel for maintenance and monitoring, if the operation is shut down.
See Attached in Section 1.0.

14. Each annual report must include any other relevant information required by the permit or stipulations.
See Attached.

I CERTIFY THAT THE ABOVE STATEMENTS AND ATTACHED INFORMATION ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Signature: _____, Date: June 10, 2021

Title: Vice President of Environmental Affairs

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Date Received: _____ Annual Fee Received: Yes ☐ No ☐ Map Updated? Yes ☐ No ☐

If applicable, information required by ARM 17.24.150(2) or (3) provided with the appropriate attachments? (OP Status) Yes ☐ No ☐

Information Required by 82-4-339(1)(e), MCA Attached? (A 1-3) Yes ☐ No ☐

Will Permittee Expand Scope of Operation During Next Permit Year? Yes ☐ No ☐

DEPARTMENT OF ENVIRONMENTAL QUALITY
ENVIRONMENTAL MANAGEMENT BUREAU
HARD ROCK PROGRAM
PO BOX 200901
HELENA MT 59620-0901
(406) 444-4953

Operating Permit Number: 108
Project Name: Continental Mine
Report Due date: 6/13/2021

(Enclose Required $100.00 Annual Fee)

ANNUAL PROGRESS REPORT FOR OPERATING PERMITS

Issued Pursuant to Title 82, Chapter 4, Part 3, MCA
And Administrative Rules Adopted Thereunder
(See 82-4-339, MCA and 17.24.118 for specific guidance.)

Name and Address of Permittee:	Location, and Legal Description of Permitted Area
Montana Resources, LLP 600 Shields Avenue Butte, Montana	Miles: 1-2 Direction From: East Nearest Town: Butte
	Section(s): T____ N R____ E County: ____
Contact Person(s): Mark Thompson Phone Number(s): (406) 496-3211 E-Mail Address: mthompson@montanaresources.com	See Attached Description in Section 1.0

Operation Status is currently: Active ☒ Inactive ☐ Abandoned ☐.
If the operation is currently inactive (operation is not extracting ore for future use or processing), indicate the provision of ARM 17.24.150(2) or (3) relied on to rebut the assumption that the operation has not been abandoned or completed. (Supporting documentation must be attached to this annual report.) N/A

Acreage & Bond
Acreage within permit area Acreage permitted for disturbance Acreage Currently Disturbed Acreage currently bonded Amount of bond Amount of Obligated Bond
See Attachments.

A. Annual report information required under Section 82-4-339, MCA

1. Pursuant to Section 82-4-339(1)(e), MCA, if the permittee is a corporation or other business entity, **ATTACH** a list of names and addresses of current officers, directors, owners of 10% or more of any class of voting stock, partners and the like and its resident agent for service of process. See Attached in Section 1.0.

2. Average number of payroll employees and on-site contracted employees who worked during the previous permit year: January to March 380; April to June 395; July to September 395; October to December 380

3. Average number of anticipated payroll employees and on-site contracted employees who ***will work*** during the next permit year: January to March 380; April to June 395; July to September 395; October to December 380

4. **ATTACH** two (2) copies of an updated map showing permit area, land disturbed during the last twelve (12) months, land to be disturbed in the next twelve (12) months. See Appendix No. 1 and Section 6.0 Disturbance and Bonding.

5. Estimate of acreage to be newly disturbed by the operation in the next 12-month period: 25

6. The date of beginning, amount, and current status of reclamation performed during the previous twelve months. This information should be provided in the responses of **B**. 2, **B**. 3, and **B**. 4 below.
See Section 2.0 Reclamation Summary and Appendix 2.

7. If the operation is completed, indicate date of completion of operations: N/A

B. Annual report information required under 17.24.118, ARM

1. The number of acres of land affected by the operation during the preceding year and cumulatively: **See Attachments**

2. The extent of backfilling and grading performed during the preceding year and cumulatively:
See Attachments

3. Two copies of maps showing the information required in **B**. 1 and **B**. 2 above. This information may be included on the maps submitted in response to **A**. 4. **Answered in A.4.**

4. Each annual report must include a status report on revegetation, pursuant to 82-4-339(1)(f)(iv) and (vi), MCA which includes the extent of reclamation (seeding or planting) performed during the preceding year (in narrative and map form), including: (a) the area of land planted; (b) the type of planting or seeding; (c) the mixtures and amounts seeded; (d) the species, location, and method of planting for site or species specific plantings; (e) the date of seeding or planting; (f) cumulative acres reseeded to date; and (g) cumulative acres of completed reclamation and the date each increment was completed. Please respond to (a) through (g) in the space provided below. **Attach** additional pages as necessary.

See Section 2.0 Reclamation Summary and Appendix 2.

5. Each annual report must include an inventory of soils volumes which includes: (a) cubic yards salvaged in the preceding year and cumulatively; (b) cubic yards to be salvaged in the coming year; (c) cumulative volume of soils contained in stockpiles; and (d) replaced soil depths and volumes. Please respond to (a) through (d) in the space provided below. **Attach** additional pages as necessary.
See Section 5.0 Materials Inventory.

6. Each annual report for those operations using cyanide or other metal leaching solvents or reagents or having the potential to generate acid must provide a narrative summary of water balance conditions during the preceding year and identify excess water holding capacity at the time of the annual report.
N/A

7. When incremental bond has been approved, additional bond must be submitted, in the amount required, with the annual report and the status of incremental bonding must be described.
N/A

8. If changes in facilities have occurred in the preceding year, the annual report must update the permit map required under Section 82-4-335(5)(e), MCA and ARM 17.24.115(k). The updated map must depict all approved surface features, as required by the department, in or associated with the permit area, reproduced at a scale applicable for field use. (This information can be included on the map required above under **A**.4.)
See Attachments.

9. If cultural resource mitigations identified in the permit will be ongoing through the life of the operation, the annual report must include an updated cultural resource management table, including a list of sites mitigated and disturbed in the preceding year and sites to be mitigated and disturbed in the coming year.
N/A

10. If comprehensive water monitoring is required by the permit, each annual report must include an evaluation of water monitoring reports submitted during the preceding year. The evaluation must include trend analyses for those key site-specific parameters required by the department in the permit.
See Section 4.0 Water Quality & Monitoring and Appendix 3.

11. If site-specific geologic conditions identified in the permit indicate the need for geologic monitoring, each annual report must include monitoring results and must report materials balances as required in the permit.
N/A

12. If site-specific closure requirements identified in the permit include monitoring for cyanide neutralization, acid rock drainage development, or similar occurrences, the annual report must include an evaluation of monitoring and testing data required in the permit for closure.
N/A

13. Each annual report must include the names of key personnel for maintenance and monitoring, if the operation is shut down.
See Attached in Section 1.0.

14. Each annual report must include any other relevant information required by the permit or stipulations.
See Attached.

I CERTIFY THAT THE ABOVE STATEMENTS AND ATTACHED INFORMATION ARE TRUE TO THE BEST OF MY KNOWLEDGE.

Signature: _____, Date: June 10, 2021

Title: Vice President of Environmental Affairs

FOR DEPARTMENT OF ENVIRONMENTAL QUALITY USE ONLY

Date Received: _____ Annual Fee Received: Yes ☐ No ☐ Map Updated? Yes ☐ No ☐

If applicable, information required by ARM 17.24.150(2) or (3) provided with the appropriate attachments? (OP Status) Yes ☐ No ☐

Information Required by 82-4-339(1)(e), MCA Attached? (A 1-3) Yes ☐ No ☐

Will Permittee Expand Scope of Operation During Next Permit Year? Yes ☐ No ☐

Montana Resources

Montana Resources, LLP
600 Shields Ave.
Butte, Montana
USA 59701

(406) 496-3200
(406) 723-9542 Fax
www.montanaresources.com

Continental Mine
Butte-Silver Bow County

Legal Description:

PERMIT # 00030, 00030A, 041, and 108; General Legal Description:

All or Portions of Sections 4, 5, 6, 7, 8, 9, 10, 15, 16, 17, 18, 20, 21, and 22 T3N, R7W

All or Portions of Sections 28, 29, 30, 31, 32, and 33, T4N, R7W

All or Portions of Section 13, T3N, R8W

All or Portions of Section 36, T4N, R8W

Montana Resources

Montana Resources, LLP
600 Shields Ave.
Butte, Montana
USA 59701

(406) 496-3200
(406) 723-9542 Fax
www.montanaresources.com

Montana Resources, LLP
(a Montana Limited Liability Partnership)
600 Shields Avenue
Butte, Montana 59701
Federal Tax ID: 81 0458545

Officers:

Jack Standa, President
Travis Chiotti, Vice President, Operations
Robert Sanderson, Vice President, Maintenance
Mike McGivern, Vice President, Human Resources
Mark Thompson, Vice President, Environmental Affairs

Partners are:

Montana Resources, Inc.
P.O. Box 16630
101 International Way
Missoula, Montana 59808

&

Montana Resources Holding, LLC
P.O. Box 16630
101 International Way
Missoula, Montana 59808

Service of Process:

Montana Resources, Inc.
P.O. Box 16630
101 International Way
Missoula, Montana 59808

Montana Resources

Montana Resources, LLP
600 Shields Ave.
Butte, Montana
USA 59701

(406) 496-3200
(406) 723-9542 Fax
www.montanaresources.com

ANNUAL PROGRESS REPORT
MINE OPERATING PERMITS

Key Personnel for Maintenance and Monitoring in case of mine shutdown as required by 82-4-338 (5).

Mark Thompson, Vice President of Environmental Affairs

Jeremy Fleege, Environmental Engineer

Travis Chiotti, Vice President of Operations

Attachment to Annual Progress Report for Operating Permits.

"Acreage and Bond"

To compare bonded acreage to actual disturbance, MR, in consultation with MDEQ, is reporting total disturbance for all permits. A more detailed table of facility acreages is contained in Section 6.0.

For all Operating Permit Numbers: 00030, 00030A, 041, and 108:

- Total Permit Area 6136 Acres
- Total Acreage Currently Disturbed 5533 Acres
- Amount of Bond $114,602,575
- Amount of Obligated Bond $114,602,575

Montana Resources

Montana Resources, LLP
600 Shields Ave.
Butte, Montana
USA 59701

(406) 496-3200
(406) 723-9542 Fax
www.montanaresources.com

Total Bond Status for all Permits
(No.: 00030, 00030A, 00041, and 00108)

Total Bond as of December 31, 2019	**$57,577,902**
Total Bond as of December 31, 2020	**$114,602,575**

The Record of Decision for Amendment 003 for Permit Area 00030 and Amendment 10 for Permit Area 00030A was issued in 2019. A preliminary Bond Determination was provided by DEQ in 2019, and the bond was posted, and the final Permit issued in 2020.

A 5-year bond review was initiated in 2020 but a final determination was not made before year end.

2.0 Reclamation Summary

2.1 Reclamation Activities

Approximately 4,200 cubic yards of topsoil was hauled from the Bunker Soil Stockpile to topsoil approximately 5.2 acres of the East Dump Complex in 2020. Six inches of topsoil was applied over the previously placed alluvium.

In addition to the 5.2 acres topsoiled in 2020, the approximately 20.5 acres capped and topsoiled in 2019 were seeded in the spring of 2020. For a total of approximately 25.7 acres seeded in 2020.

Table 2.1 contains the cumulative acres reseeded and completed reclamation to date. Plate IV is an illustration of the cumulative completed reclamation.

2.2 Reclamation Maintenance

2.2.1 Weed Control

In June 2020, approximately 12.7 acres were treated with sterilant herbicide. These areas included electrical substations, railroad tracks, concentrator facilities, main office, explosive bunkers and around the HsB water treatment plant and reservoir. The locations covered are identified in this section.

In October 2020, noxious weeds were treated on approximately 86.5 acres. The areas treated, herbicides used, and application rates are identified in this section. The spraying targeted Spotted Knapweed, Dalmatian Toadflax, and Elk Horn Thistle.

2.2.2 Vegetation Monitoring

No vegetation monitoring studies were contracted during 2020.

2.2.3 Seed Mix

The seed mix used in 2020 (for the approximately 25.7 acres described in Section 2.1) retains elements of the 2017 mix, incorporates components of the Amendment RDS mix, and is in line with the 1998 Reclamation Plan. The Hillcrest Dump and East Dump Complex seed mixture is included in this section.

2.3 Soil Salvage

Soil was salvaged in advance of the rising tailings pond water level. Soil salvaged into temporary stockpiles in 2019 was hauled to the new Bumtown 2 Soil Stockpile as well as other

soil salvaged on the northeast side of the YDTI. Approximately 37,420 cubic yards of topsoil was placed in the Bumtown 2 Soil Stockpile.

2.4 Recontouring Waste Dump Areas

No waste rock dump slopes were re-contoured in 2020.

2.5 Fencing

Fence maintenance was conducted on the fence line along Moulton Reservoir Road.

2.6 Planned Activities for 2021

Topsoil will continue to be salvaged near the tailings pond waterline as needed.

During the 2021 season, reclamation maintenance will continue on previously reclaimed areas. Spot spraying is necessary in many areas because of the presence of broad leaf plant species such as clover and alfalfa in the reclamation seed mix. Maintenance items may include fertilizing, vegetation monitoring, and continued spraying to control noxious weeds.

Table 2-1 Completed Reclamation

Years	**Area (acres)**
1991, 1993	6.6
1992, 1996, 2005	11.2
1993, 2006, 2012	4.7
1996, 1996, 2012	47.8
1992	18.6
1995	1.3
2002	90.4
2004	3.1
2007	10.3
2011	7.3
2012	1.8
2014	6.3
2015	1.1
2017	-37.2
2018	37.4
2019	28.1
2020	25.7
Total:	**264.5**

MR East Dump Complex Seed Mixture Spring 2020

Species		Recommended Variety	Broadcast Seeding Rate[1]
Grasses:			
*Agropyron intermedium**	Intermediate wheatgrass	Oahe	5.00 / 10
Agropyron smithii	Western wheatgrass	Rosana	6.00 / 15
Agropyron spicatum	Bluebunch wheatgrass	Goldar	4.00 / 12
Agropyron trachycaulum	Slender wheatgrass	Copperhead, Pryor	3.00 / 10
Bromus marginatus	Mountain brome	Bromar, Garnet	6.00 / 12
Elymus cinereus	Basin wildrye	Washoe, Trailhead	3.00 / 12
Elymus elymoides	Bottlebrush squirreltail	Sand Hollow	2.00 / 8
Festuca idahoensis	Idaho fescue	Nezpurs, Joseph	2.50 / 26
*Triticum aestivum x Secale cereale**	Quickguard Sterile triticale	Quickguard	10.00 / 3
Oryzopsis hymenoides	Indian ricegrass	Rimrock	4.00 / 13
*Poa compressa**	Canada bluegrass	Reubens	0.25 / 14
		Grand Total	**45.75 / 135**

[1] Pounds PLS/PLS per sq. ft. Application rates are based on broadcast seeding; rates will be halved for drill seeding.

*Non-native species

NOTE: Scientific nomenclature follows Lesica (2012).

Pioneer Weed Control
2020 MR Steriland

Pioneer Weed Control/
MR Sterilant 2020

Pioneer Weed Control, Inc. RR2 Box 220 Butte, MT 59701

Date: 10/6/2020 Applicator: Nathan Taylor License: 105807-12 Job #: 2068

County: Silver Bow Landowner: Montana Resources Reference:

Site: Range Land Start Time: 7:30 AM

Location (TRS): Finish Time: 2:30 PM

Other Landmarks: Moulten Reservoir Rd. Travel Time:

Area Treated: 8.5 Acres

Method: Spot Spray

Weeds Treated
Canada Thistle
Spotted Knapweed

Chemicals Applied			
Trade Name	App. Rate	Total	EPA Reg. No.
Foam Marker Soap	Pints/Acre	1 Pints	N/A
Transline	1 Pints/Acre	8.5 Pints	62719-73

Weather Conditions			
Time	Temp	Wind Dir	Speed
7:30 AM	35	Calm	
9:00 AM	55	Calm	
12:45 PM	72	West	2-4
2:30 PM	75	Northwest	10-12

Equipment/Labor	
Resource	Qty
Truck #21	7 Hours

Comments:
GPS # 5 start at 001 end at 019.

Pioneer Weed Control, Inc. RR2 Box 220 Butte, MT 59701

Date: 10/6/2020 Applicator: Steve Bell License: 105137-12 Job #: 2068

County: Silver Bow Landowner: Montana Resources Reference:

Site: Industrial Start Time: 7:30 AM

Location (TRS): Finish Time: 2:30 PM

Other Landmarks: North West of viewing stand and hillside facing I-15. Travel Time:

Area Treated: 16 Acres

Method: Spot Spray

Weeds Treated
Dalmation Toadflax
Spotted Knapweed

Chemicals Applied			
Trade Name	App. Rate	Total	EPA Reg. No.
Foam Marker Soap	Pints/Acre	6 Pints	N/A
Tordon 22K*	2 Pints/Acre	32 Pints	62719-6

Weather Conditions			
Time	Temp	Wind Dir	Speed
7:30 AM	36	Calm	
10:00 AM	51	Northwest	0-1
11:30 AM	62	East	1-2
1:00 PM	73	East	2-3
1:45 PM	75	West	4-5
2:30 PM	75	West	8-10

Equipment/Labor	
Resource	Qty
Truck #23	7 Hours

Comments:
GPS # 10 start at 001 end at 080.

Pioneer Weed Control, Inc. RR2 Box 220 Butte, MT 59701

Date: 10/7/2020 Applicator: Nathan Taylor License: 105807-12 Job #: 2068

County: Silver Bow Landowner: Montana Resources Reference:

Site: Range Land Start Time: 7:30 AM

Location (TRS): Finish Time: 2:45 PM

Other Landmarks: Moulton Reservoir Road & tree line West of I-15. Travel Time:

Area Treated: 11.5 Acres

Method: Spot Spray

Weeds Treated

Canada Thistle
Spotted Knapweed

Chemicals Applied

Trade Name	App. Rate	Total	EPA Reg. No.
Marker Dye - Blue	Pkt/100 Gal	2 Pkts	N/A
Transline	1 Pints/Acre	11.5 Pints	62719-73

Weather Conditions

Time	Temp	Wind Dir	Speed
7:30 AM	36	Calm	
10:30 AM	54	Calm	
12:15 PM	68	West	0-2
2:45 PM	74	West	2-3

Equipment/Labor

Resource	Qty
Truck #21	7.25 Hours

Comments:
GPS # 5 start at 020 end at 060.

Pioneer Weed Control, Inc. RR2 Box 220 Butte, MT 59701

Date: 10/7/2020 Applicator: Steve Bell License: 105137-12 Job #: 2068

County: Silver Bow Landowner: Montana Resources Reference:

Site: Industrial Start Time: 7:30 AM

Location (TRS): Finish Time: 2:45 PM

Other Landmarks: East facing slopes at I-15. Travel Time:

Area Treated: 20.5 Acres

Method: Spot Spray

Weeds Treated
Dalmation Toadflax
Elk Horn Thistle
Spotted Knapweed

Chemicals Applied

Trade Name	App. Rate	Total	EPA Reg. No.
Foam Marker Soap	Pints/Acre	10 Pints	N/A
Tordon 22K*	2 Pints/Acre	41 Pints	62719-6

Weather Conditions

Time	Temp	Wind Dir	Speed
7:30 AM	38	Calm	
8:45 AM	40	Calm	
10:00 AM	50	Calm	
12:45 PM	70	West	0-1
2:00 PM	73	Southwest	2-3
2:45 PM	74	West	2-3

Equipment/Labor

Resource	Qty
Truck #23	7.25 Hours

Comments:
GPS # 10 start at 081 end at 103.

Pioneer Weed Control, Inc. RR2 Box 220 Butte, MT 59701

Date: 10/8/2020 Applicator: Larry Burton License: 2-01-12772-12 Job #: 2068

County: Silver Bow Landowner: Montana Resources Reference:

Site: Industrial Start Time: 7:45 AM

Location (TRS): Finish Time: 1:00 PM

Other Landmarks: Hillcrest Area Travel Time:

Area Treated: 15 Acres

Method: Spot Spray

Weeds Treated

Dalmation Toadflax
Spotted Knapweed

Chemicals Applied

Trade Name	App. Rate	Total	EPA Reg. No.
Foam Marker Soap	Pints/Acre	3 Pints	N/A
Tordon 22K*	2 Pints/Acre	30 Pints	62719-6

Weather Conditions

Time	Temp	Wind Dir	Speed
7:45 AM	36	Calm	
9:00 AM	43	Calm	
10:10 AM	52	Calm	
12:00 PM	64	Calm	
1:00 PM	70	Southwest	5-7

Equipment/Labor

Resource	Qty
Truck #21	5.25 Hours

Comments:
GPS # 5 start at 061 end at 065

Pioneer Weed Control, Inc. RR2 Box 220 Butte, MT 59701

Date: 10/8/2020 Applicator: Steve Bell License: 105137-12 Job #: 2068

County: Silver Bow Landowner: Montana Resources Reference:

Site: Industrial Start Time: 7:45 AM

Location (TRS): Finish Time: 1:00 PM

Other Landmarks: Hillcrest Area. Travel Time:

Area Treated: 15 Acres

Method: Spot Spray

Weeds Treated

Dalmation Toadflax
Spotted Knapweed

Chemicals Applied

Trade Name	App. Rate	Total	EPA Reg. No.
Foam Marker Soap	Pints/Acre	3 Pints	N/A
Tordon 22K*	2 Pints/Acre	30 Pints	62719-6

Weather Conditions

Time	Temp	Wind Dir	Speed
7:45 AM	36	Calm	
9:15 AM	44	Calm	
10:00 AM	52	Calm	
12:00 PM	67	North	0-1
1:00 PM	70	Southwest	5-7

Equipment/Labor

Resource	Qty
Truck #23	5.25 Hours

Comments:
GPS # 10 start at 104 end at 157.


MR Weed
Spray 2020
pg 1 of 2


MR Weed
Spray 2020
Pg 2 of 2

3.0 Material Characterization

3.1 Alluvium

No alluvium was stockpiled in 2020.

3.2 Leached Capping

No leached capping material was stockpiled in 2020.

3.3 Material Characterization Program

During construction of the 6450 lift to the YDTI, an ABA sample is collected every 40,000 cubic yards of zone D1 material, every 400,000 cubic yards of zone U material and every 10,000 cubic yards of zone UA material. Results from these samples analyzed in 2020 are contained in the construction reports prepared per the Construction Management Plan.

None of the leached capping from the D East pushback will be used as reclamation material. All leached capping material was used for tailings embankment construction. The purpose of sampling this material used for construction is to segregate the material relatively so that when the material balance allows, the higher quality leached capping can be placed in the downstream side of the embankment and the material of lesser quality can be placed to the center or to the upstream side of the embankment.

Quarterly tailing composite samples were collected in 2020 but results from ABA and whole rock analysis were not available for this report. The results will be provided in the 2021 Annual Report. Results from analysis of 2019 quarterly tailings samples are attached.

Results from sampling of topsoil used in reclamation in 2020 (see Section 2.1) are contained in Table 3.1. The topsoil from the Bunker Stockpile was amended with compost prior to seeding in 2020.

Table 3.1

East Dump Complex Topsoil Sampling, Bunker Topsoil Stockpile				
Sample Parameter	Average	Min	Max	n
Organic Matter, WB (%)	1.1	0.8	1.4	25

Tailings Geochemistry

	2019			
Sample Site Sample No.	1st Qtr M.T.P.H. 19Q1	2nd Qtr M.T.P.H. 19Q2	3rd Qtr M.T.P.H. 19Q3	4th Qtr M.T.P.H. 19Q4
ppm Cu	458	431	392	465
ppm Mo	71	62	71	62
% Fe	2.39	2.42	2.12	2.06
% Al	1.29	1.15	1.19	1.08
ppm Sb	<1	<1	<1	<1
ppm As	5	6	6	6
ppm Ba	77	72	70	65
ppm Bi	1	2	2	2
ppm Cd	<1	<1	<1	<1
% Ca	0.840	0.900	1.030	0.813
ppm Cr	10	10	11	10
ppm Co	11	11	9	9
ppm Pb	16	24	25	22
% Mg	0.706	0.645	0.674	0.556
ppm Mn	446	391	407	397
ppm Ni	7	7	7	6
ppm P	497	491	492	427
% K	0.677	0.604	0.631	0.526
% Si	0.0352	0.0350	0.0348	0.0303
% Na	<0.02	<0.02	<0.02	<0.02
ppm Sr	21	27	28	19
ppm Sn	<7	<7	<7	<7
ppm Ti	845	707	727	640
ppm V	49	43	45	38
ppm Zn	188	182	183	188
ppm Se	<1	<1	<1	<1
pH	8.8	8.8	8.9	9.0
ABP T/THO	-39	-45	-29	-37
% S-N-EX	1.5	1.7	1.5	1.5
% S-PYR	0.14	0.11	0.09	0.11
% $S\text{-}SO_4$	0.06	0.08	<0.01	0.15
% S-Tot.	1.9	2.1	1.8	1.9
AGP T/THO	60	66	55	58
ANP T/THO	20	21	26	21

4.0 Water Quality

During 2020, MR continued the water quality sampling program. Attached is a report produced by Hydrometrics summarizing the water sampling conducted in 2020.

Water Quantity:

The average freshwater make-up flow from the Silver Lake Water System (SLWS) in 2020 was 1.12 million gallons per day (MGD). Tailings are pumped as a slurry to the YDTI at an average rate of approximately 18,000 gpm. The tailings slurry is approximately 35% solids by mass. Water was returned from the YDTI to the mill at an average rate of approximately 21.2 MGD[1] in 2020. The average flow in the Clear Water Ditch as measured by MBMG at a flume near the guard shack was 295 gpm in 2020. Flow from the Continental Pit is not monitored but is estimated to be approximately 0.5 MGD. Approximately 1.2 billion gallons were treated at the Horseshoe Bend Water Treatment Plant; 1.1 billion gallons of Berkeley Pit water was extracted and treated; and, 2.0 billion gallons were discharged to Silver Bow Creek by the BMFOU Pilot Project in 2020. Also, approximately 7.3 million gallons of water were pumped to the MR Dredge Pond from the Parrot Tailings Removal Project in 2020.

[1] This includes water delivered to the Polishing Plant for discharge to Silver Bow Creek.

MONTANA RESOURCES
2020 BASELINE AND OPERATIONAL
WATER RESOURCES MONITORING REPORT

Prepared for:

Montana Resources, LLP
600 Shields Avenue
Butte, MT 59701

Prepared by:

Hydrometrics, Inc.
3020 Bozeman Avenue
Helena, MT 59601

May 2021

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ACRONYMS

As	Arsenic
B	Boron
Cd	Cadmium
Cr	Chromium
DI	Deionized water
DO	Dissolved Oxygen
Fe	Iron
FSAP	Field Sampling and Analysis Plan
Hg	Mercury
Mn	Manganese
MR	Montana Resources, LLP
N+N as N	Nitrate plus Nitrite as Nitrogen
Pb	Lead
PRDL	Project Required Detection Limit
QC	Quality Control
Rb	Rubidium
RPD	Relative Percent Difference
SC	Specific Conductance
Si	Silicon
SOP	Standard Operating Procedure
SWL	Static Water Level
TDS	Total Dissolved Solids
VWP	Vibrating Wire Piezometer
W	Tungsten
WED	West Embankment Drain
YDTI	Yankee Doodle Tailings Impoundment
Zn	Zinc

MONTANA RESOURCES
2020 BASELINE AND OPERATIONAL
WATER RESOURCES MONITORING REPORT

1.0 INTRODUCTION

At the request of Montana Resources, LLP (MR), Hydrometrics conducted hydrologic monitoring in the vicinity of the Continental Mine in 2020. The 2020 monitoring program included semi-annual (spring and fall) groundwater and surface water sampling. Monitoring activities were focused on the Yankee Doodle Tailings Impoundment (YDTI) and Moulton Reservoir Road area, with additional monitoring sites located throughout the active mine site. The 2020 monitoring program is a continuation of the water resources monitoring implemented the past several years and contributes to establishment of an extensive water quality database for the YDTI and Continental Mine area, and satisfies certain Continental Mine operating permit requirements. Objectives of the monitoring program include:

1. Continue baseline surface water and groundwater quality monitoring as initiated under MR's recent mine permitting program; and
2. Provide operational water quality data as required by the Continental Mine operating permit(s).

This report documents the scope and results of 2020 water resources monitoring activities conducted by Hydrometrics at the Continental Mine. Also included is an analysis of water quality trends for the monitoring period of record. Besides documenting current water quality conditions and trends, information provided in this report will be used in design and planning of future water resources monitoring programs.

2.0 MONITORING PROGRAM SCOPE

This section describes the scope and details of the 2020 water resources monitoring program including monitoring locations, schedules and analytical parameters. The sampling methodology is also summarized below with additional detail provided in the 2020 Field Sampling and Analysis Plan (FSAP; Hydrometrics, 2020).

2.1 SURFACE WATER MONITORING

The 2020 surface water monitoring program included a total of 20 sites (Table 2-1). Eleven of these sites are included in MR's operational monitoring program designated for seasonal sampling in the current mine operating permit (MR, 2019). Six sites are considered baseline monitoring sites established during 2012 to 2016 to document surface water quality west of the YDTI as part of the recently completed YDTI permit amendment activities. Water quality data from these sites documents current hydrologic conditions around the YDTI for comparison to future water quality data. Three sites are neither operational nor baseline and were sampled at MR's request for general interest and operations planning. Table 2-1 provides a description of each site by program with site locations shown in Figure 2-1.

Two sampling events were conducted in 2020, one in June during high flow conditions, and the second in October during the relatively low flow season. The two sampling events are meant to document surface water quality conditions under the varying flow regimes.

Monitoring at each surface water site included field measurements of streamflow (where conditions allowed), pH, specific conductance (SC), dissolved oxygen (DO) and water temperature. Water samples were also collected at each site for laboratory analyses of an extensive suite of major constituent, nutrient and trace metal concentrations at Energy Laboratories in Helena (Table 2-2). With the exception of aluminum, all metals were analyzed for the total recoverable fraction. Aluminum samples were filtered through a 0.45 µm disposable filter in the field prior to preservation for dissolved fraction analysis. Details of surface water sampling procedures, sample handling and preservation, and analytical methods are included in the 2020 FSAP (Hydrometrics, 2020).

2.2 GROUNDWATER MONITORING

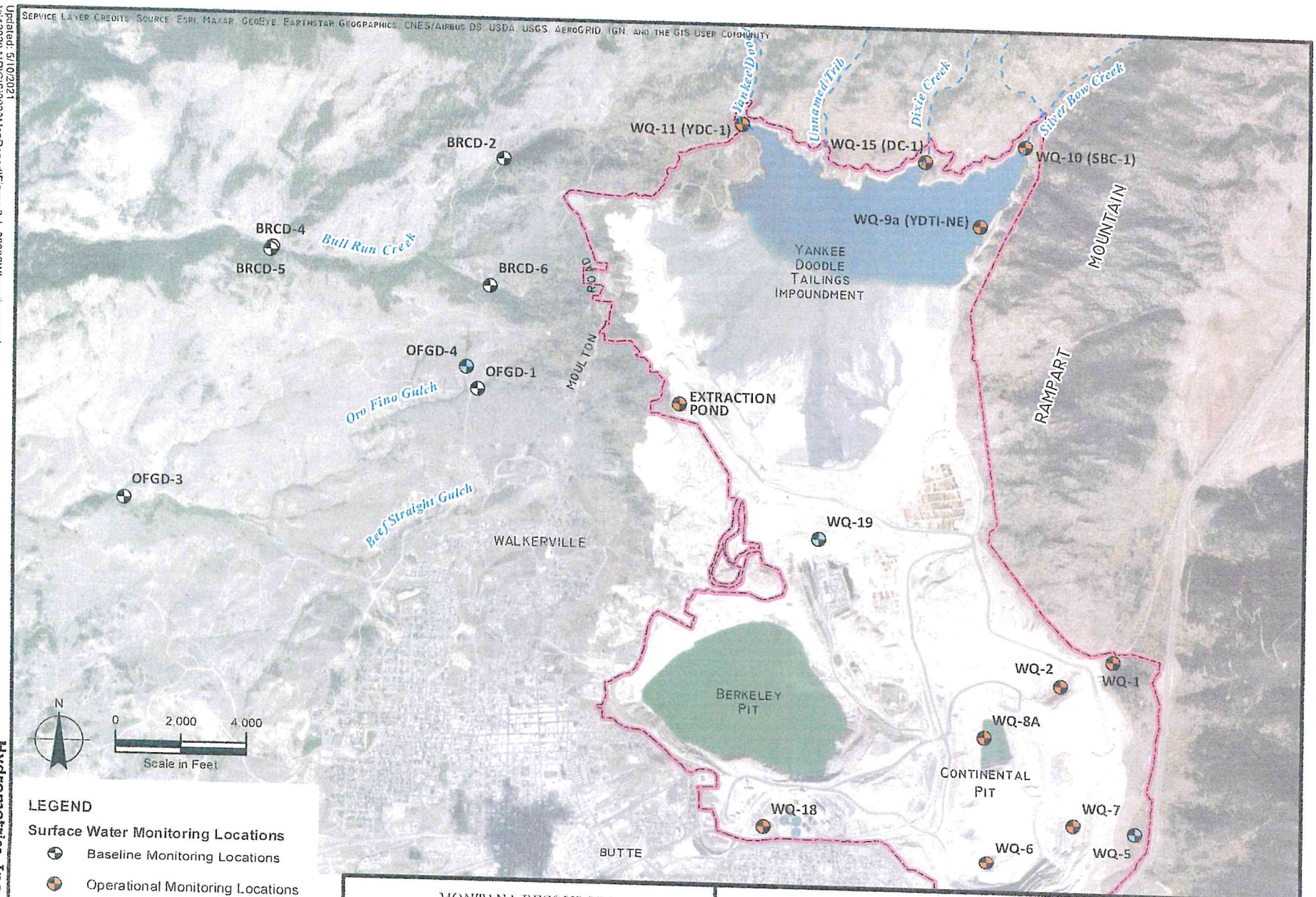
The 2020 groundwater monitoring program included water quality sampling at 24 monitoring wells according to the monitoring schedule in Table 2-3. The majority of sites (22) are part of the operational monitoring program (MR, 2018) with the remaining two sites monitored to further document baseline water quality conditions. All wells were monitored during spring (June) and fall (October) to document groundwater characteristics under variable hydrologic conditions. Monitoring well locations are shown on Figure 2-2.

Groundwater monitoring included field measurements of static water level (SWL), pH, SC, DO, and water temperature. Groundwater samples were collected at each well for laboratory analyses of major constituent, nutrient, and trace metal concentrations at Energy Laboratories in Helena (Table 2-2). Samples for metals analyses were filtered through a disposable 0.45 µm filter prior to preservation for

TABLE 2-1. 2020 MONTANA RESOURCES SURFACE WATER MONITORING SCHEDULE

Site ID	Latitude (°N)	Longitude (°W)	Description	Sampling Schedule	
				June	October
BRCD-2[1]	46.0608	-112.5433	Upper Bull Run Creek drainage downstream of BRCD-1 at Poorman Rd crossing.	X	X
BRCD-4[1]	46.0523	-112.5705	Bull Run Creek at end of Frog Pond Rd, downstream of BRCD-3.	X	X
BRCD-5[1]	46.0520	-112.5707	Tributary to Bull Run Creek entering from the south immediately downstream of BRCD-4.	X	X
BRCD-6[1]	46.0501	-112.5442	South Fork of BRC upstream of Bull Run Road crossing. Very little flow; light brown slime in pooled areas.	X	X
OFGD-1[1]	46.0414	-112.5451	Head of Frog Pond at junction of Bull Run Creek Rd and Frog Pond Rd (east of Bull Run Creek road).	X	X
OFGD-3[1]	46.0306	-112.5869	Downstream Oro Fino Gulch in Section 10.	X	X
OFGD-4[3]	46.0433	-112.5467	Spring tributary to Oro Fino Gulch entering from the north near OFGD-1. Sampled upgradient of house.	X	X
DC-1 (WQ-15)[2]	46.0627	-112.4929	Lower Dixie Creek at impoundment immediately upstream of metal culvert.	X	X
SBC-1 (WQ-10)[2]	46.0645	-112.4811	Silver Bow Creek immediately upstream of tailings pond.	X	X
YDC-1 (WQ-11)[2]	46.0650	-112.5150	Yankee Doodle Creek immediately upstream of tailings pond.	X	X
YDTI-NE (WQ-9a)[2]	46.0617	-112.4869	Northeast portion of tailings pond.	X	X
Extraction Pond[2]	46.0414	-112.5207	West Embankment Drain extraction pond	X	X
WQ-1[2]	Woodville East: upstream of the previously reclaimed Woodville waste rock dump.			X	X
WQ-2[2]	Woodville West: southwest side of the Woodville waste rock dump.			X	X
WQ-6[2]	Continental Pit South: southern end of the active Continental Pit.			X	X
WQ-7[2]	Pavilion Seep: on the 5840 bench of the Continental Pit below the old Columbia Gardens Pavilion.			X	X
WQ-8A[2]	Continental Pit North: northern end of the Continental Pit.			X	X
WQ-18[2]	Emergency/Ecology Pond: Southwest corner of the property north of Texas Avenue.			X	X
WQ-5[3]	Clear Water Ditch near southeastern property boundary, upstream of waste rock facilities.			X	X
WQ-19[3]	No. 10 Seep on East-West Embankment at weir.			X	X
			# Samples	**20**	**20**

(1) Baseline Monitoring Sites
(2) Operational Monitoring Site
(3) Other monitoring site.



Updated: 5/10/2021
V:\2020 MRGIS\2020MonReport\Figure 2-1_2020SWLocations.mxd

Hydrometrics, Inc.
Consulting Scientists and Engineers

MONTANA RESOURCES
YANKEE DOODLE TAILINGS IMPOUNDMENT
2020 MONITORING REPORT

2020 SURFACE WATER MONITORING LOCATIONS

FIGURE
2-1

TABLE 2-2. 2020 SURFACE WATER AND GROUNDWATER ANALYTICAL PARAMETER LIST

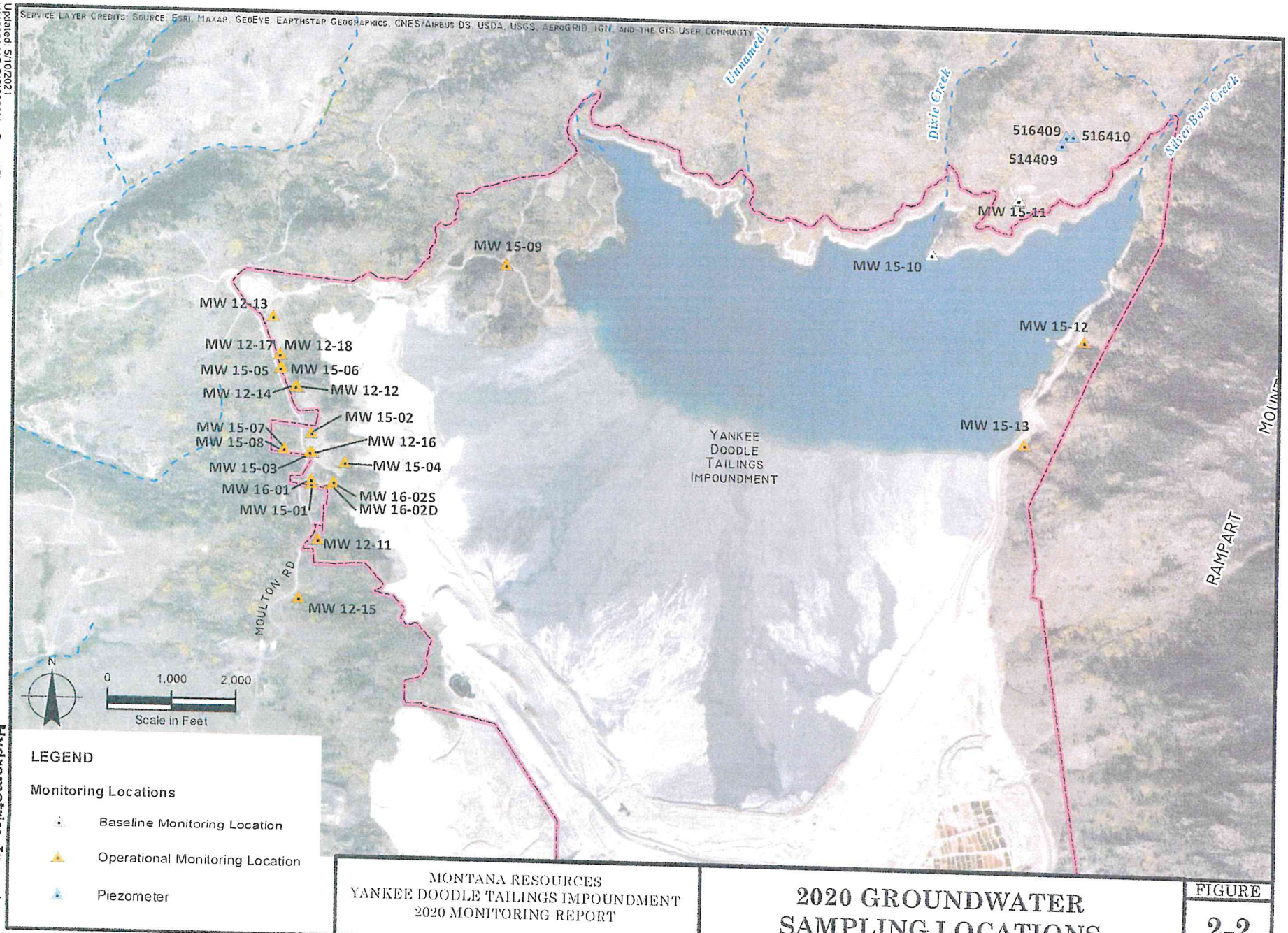
Parameter	Analytical Method [1]	Project Required Detection Limit (mg/L)
Physical Parameters		
pH	150.2/SM 4500H-B	0.1 s.u.
Specific Conductance	120.1/SM 2510B	1 µmhos/cm
TDS	SM 2540C	10
TSS	SM 2540D	10
Common Ions		
Alkalinity	SM 2320B	1
Acidity as CaCO3 (if pH<5)	A2310B	1
Bicarbonate	SM 2320B	1
Carbonate	SM 2320B	1
Sulfate	300	1
Chloride	300.0/SM 4500CL-B	1
Fluoride	A 4500 F-C	0.1
Nutrients - Operational Surface Water Samples Only		
Nitrate + Nitrite as N	E353.2	0.03
Total Phosphorous as P	E365.1	0.05
Metals: Surface Water-Total Recoverable (except dissolved for aluminum); Groundwater - Dissolved		
Aluminum (Al) (dissolved)	200.7/200.8	0.005
Antimony	200.8/200.9	0.0005
Arsenic (As)	200.8/SM 3114B	0.001
Boron (B)	200.7/200.8	0.1
Cadmium (Cd)	200.7/200.8	0.00003
Calcium	215.1/200.7	5
Chromium (Cr)	200.7/200.8	0.001
Copper (Cu)	200.7/200.8	0.001
Iron (Fe)	200.7/200.8	0.02
Lead (Pb)	200.7/200.8	0.0003
Lithium (Li)	200.8/200.9	0.1
Magnesium	242.1/200.7	5
Manganese (Mn)	200.7/200.8	0.01
Mercury (Hg)	245.2/245.1/200.8/SM 3112B	0.000005
Molybdenum (Mo)	E246.2/200.7/200.8	0.0001
Nickel (Ni)	200.7/200.8/200.9	0.002
Potassium	258.1/200.7	5
Rubidium (Rb)	200.8/200.9	0.0001
Selenium (Se)	200.7/200.8/SM 3114B	0.001
Silicon (Si)	200.7/200.8	0.1
Silver (Ag)	200.7/200.8	0.0002
Sodium	273.1/200.7	5
Strontium (Sr)	200.7/200.8	0.02
Tungsten (W)	200.7/200.8	0.0001
Thallium (Tl)	200.8/200.9	0.0002
Uranium	200.8	0.0002
Vanadium (V)	E286.2200.7/200.8	0.1
Zinc (Zn)	200.7/200.8	0.008
Field Parameters		
Water Temperature	HF-SOP-20	0.1 °C
Dissolved Oxygen (DO)	HF-SOP-22	0.01 mg/L
pH	HF-SOP-20	0.01 pH standard unit
Specific Conductance (SC)	HF-SOP-79	1 µmhos/cm

(1) Analytical methods are from *Standard Methods for the Examination of Water and Wastewater* (SM) or EPA's *Methods for Chemical Analysis of Water and Waste* (1983). Equivalent methods may be substituted.

TABLE 2-3. 2020 MONITORING WELL SAMPLING SCHEDULE
MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT

Monitor Well	MP Elevation	Well Casing	Total Depth feet bgs	Screen Interval feet bgs	Purge Method	SWL MP Description	Sampling Schedule	
							Spring	Fall
MW 12-11	6521.41	4" Sch 40 PVC	200	145-195	Grundfos Pump	4" PVC	X	X
MW 12-12	6475.87	4" Sch 40 PVC	200	165-200	Grundfos Pump	Cap on 4" PVC	X	X
MW 12-13	6490.28	4" Sch 40 PVC	200	150-200	Grundfos Pump	4" PVC	X	X
MW 12-14	6476.47	4" Sch 40 PVC	150	100-150	Grundfos Pump	4" PVC	X	X
MW 12-15	6518.90	4" Sch 40 PVC	200	150-200	*Dedicated Pump*	1" PVC	X	X
MW 12-16	6487.58	4" Sch 40 PVC	191	141-191	Grundfos Pump	4" PVC	X	X
MW 12-17	6472.97	4" Sch 40 PVC	195	155-195	Grundfos Pump	4" PVC	X	X
MW 12-18	6472.65	4" Sch 40 PVC	115	80-115	*Dedicated Pump*	1" PVC	X	X
MW 15-01	6504.13	4" Sch 40 PVC	230	182-222	*Dedicated Pump*	4" PVC	X	X
MW 15-02	6483.34	4" Sch 40 PVC	197	147-197	*Dedicated Pump*	1" PVC	X	X
MW 15-03	6487.41	4" Sch 40 PVC	386	345-385	*Dedicated Pump*	1" PVC	X	X
MW 15-04	6435.98	4" Sch 40 PVC	220	170-220	*Dedicated Pump*	1" PVC	X	X
MW 15-05	6468.72	4" Sch 40 PVC	240	240-290	*Dedicated Pump*	1" PVC	X	X
MW 15-06	6468.97	2" Sch 40 PVC	400	350-400	Bladder Pump	2" PVC	X	X
MW 15-07	6464.65	4" Sch 40 PVC	203	162.5-202.5	Grundfos Pump	Cap on 4" PVC	X	X
MW 15-08	6464.57	4" Sch 40 PVC	102	81.5-101.5	Grundfos Pump	Cap on 4" PVC	X	X
MW 15-09	6455.25	4" Sch 40 PVC	142	92-142	Grundfos Pump	4" PVC	X	X
MW 15-10*	6369.00	2" Sch 40 PVC	100	84-99	Grundfos Pump	2" PVC	X	X
MW 15-11*	6536.30	4" Sch 40 PVC	201	161-201	Grundfos Pump	4" PVC	X	X
MW 15-12	6436.18	4" Sch 40 PVC	99	68.5-98.5	Grundfos Pump	4" PVC	X	X
MW 15-13	6420.83	4" Sch 40 PVC	101	81-101	Grundfos Pump	4" PVC	X	X
MW 16-01	6502.09	2" Sch 80 PVC	517	485-517	Bladder Pump	2" PVC	X	X
MW 16-02D	6499.41	6" Sch 80 PVC	552	489-549	Bladder Pump	2" PVC	X	X
MW 16-02S	6499.33	2" Sch 40 PVC	552	244-264	Grundfos Pump	2" PVC	X	X
						# Sites	**24**	**24**

* Denotes baseline monitoring sites; all other sites are operational monitoring sites.



Updated: 5/10/2021
V:\2020 MRGIS\2020MoniReport\Figure 2-2_2020GWLocations.mxd

Hydrometrics, Inc.
Consulting Scientists and Engineers

MONTANA RESOURCES
YANKEE DOODLE TAILINGS IMPOUNDMENT
2020 MONITORING REPORT

2020 GROUNDWATER SAMPLING LOCATIONS

FIGURE
2-2

analysis of the dissolved fraction. Details on groundwater sampling procedures, sample handling and preservation, and analytical methods are included in the 2020 FSAP (Hydrometrics, 2020).

In addition to seasonal water quality monitoring, SWLs were recorded monthly at most YDTI wells throughout 2020. Groundwater level monitoring, particularly along the ridge west of the impoundment (the West Ridge) is an important component of the YDTI monitoring program since the groundwater levels along the ridge are of interest in maintaining hydraulic containment along the west side of the YDTI (MR, 2018). Water levels were also monitored from April through September (when access allowed) in three exploration drill holes located north of the tailings impoundment in Silver Bow Creek drainage (sites 516409, 516410, and 514409, Figure 2-2). The monitoring wells are also instrumented with vibrating wire piezometers (VWPs) for continuous water level monitoring. All manual water level data is maintained in a spreadsheet database by Hydrometrics with the VWP data maintained by MR.

2.3 FIELD QUALITY CONTROL SAMPLES

In accordance with the 2020 FSAP, field quality control (QC) samples were collected during all sampling events to assess data quality and representativeness. QC samples were collected at a frequency of one set (one duplicate, one deionized water (DI) blank, one equipment rinsate blank for groundwater; one duplicate, one DI blank for surface water) per 20 field samples during each monitoring event. A total of 20 QC samples were collected in 2020 with the QC sample results utilized for data validation as described in Section 4.0.

3.0 MONITORING RESULTS

Results of the 2020 surface water and groundwater monitoring programs are discussed below. Water quality results from each program are evaluated with a focus on key parameters of interest based on their frequency of occurrence (arsenic, uranium), their relevance to the Continental Mine orebody or metal mines in general (i.e., copper, iron, manganese), and for their potential to serve as indicators of YDTI process water (molybdenum, tungsten, rubidium, fluoride, sulfate). Although concentrations of these five "indicator parameters" are not exceptionally high in the tailings pond (with the possible exception of molybdenum and sulfate), they are an order of magnitude or more greater than in the surrounding surface water and groundwater, supporting their use as indicators of potential mixing of surrounding groundwater and surface water with tailings impoundment water. It should be noted that the presence of these indicator parameters in area surface water and groundwater is not in itself an indication of mixing with tailings water. These parameters are elevated in the tailings pond due to their enrichment in the local bedrock, and therefore are expected to occur naturally in local surface water and groundwater as well. However, abnormally high concentrations or consistent trends of increasing concentrations can be used to identify areas that may warrant further evaluation.

3.1 SURFACE WATER MONITORING RESULTS

The 2020 surface water monitoring database is included in Appendix A with select 2020 results summarized in Table 3-1. Concentration trend plots for the five indicator parameters molybdenum, tungsten, rubidium, fluoride, and sulfate for Bull Run Creek, Oro Fino Gulch, and the Yankee Doodle Tailings Pond monitoring sites are included in Appendix B[1] The Table 3-1 summary includes average 2020 concentrations (average of the June and October results) for the select parameters noted above. Key points of interest in the 2020 surface water dataset are outlined below.

Upgradient Drainages

As described in previous reports (MR, 2018), surface water in upstream drainages Silver Bow, Dixie and Yankee Doodle Creeks is a calcium-bicarbonate type water with 2020 field-measured pH values ranging from 7.21 to 8.69 and averaging 7.82 (Table 3-1, Appendix A). Trace metal concentrations are generally low with antimony, boron, chromium, lithium, mercury nickel, selenium, silver, thallium, tungsten and vanadium at or less than the project required detection limits (PRDLs) in all 2020 samples. Concentrations of the YDTI indicator parameters fluoride, sulfate, molybdenum, rubidium and tungsten are all low as compared to the tailings pond water. The 2020 sample results for the upstream drainages are consistent with past sampling results dating back several years.

[1] When viewing the trend plots, note that a number of anomalous analytical results recorded in 2019 are believed to be due to the use of a different analytical laboratory; the 2020 and pre-2019 analyses have all been performed by Energy Laboratories

TABLE 3-1. 2020 SURFACE WATER AVERAGE PARAMETER CONCENTRATIONS

Drainage/Area	Flow	pH	Sulfate	Fluoride	Molybdenum	Tungsten	Rubidium	Arsenic	Uranium	Copper	Iron	Manganese
	gpm	*S.U.*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
West Ridge and Upstream Drainages												
Bull Run Ck	51	7.51	38	0.16	0.0023	0.00009	0.0018	0.0241	0.0015	0.005	0.32	0.064
Oro Fino Gulch	33	7.46	129	0.350	0.0059	0.00006	0.0010	0.0093	0.0028	0.002	0.36	0.988
Upstream Drainages	126	7.82	15	0.06	0.0014	0.00005	0.0009	0.0047	0.0030	0.003	0.24	0.021
Active Mine Site and Tailings Impoundment												
WQ-1-Woodville East	131	7.47	143	0.25	0.00085	0.00005	0.00165	0.0013	0.0016	0.068	0.265	0.1285
WQ-2-Woodville West	127	6.95	176	0.45	0.3010	0.00007	0.0035	0.0005	0.0004	0.079	0.001	0.011
WQ-5-Clearwater Ditch	8 [1]	8.22	39	0.075	0.0014	0.00013	0.0018	0.0023	0.0005	0.019	0.495	0.0865
WQ-6-Cont Pit South	Ponded	5.88	1410	2.6	0.6240	0.00008	0.03075	0.0018	0.0730	16.65	15.505	11.39
WQ-7-Pavillion Seep	151	3.09	1222	0.45	0.0073	0.00005	0.0312	0.0020	0.0754	61.9	25.4	15.95
WQ-8A-Cont Pit North	Ponded	4.58	1670	3.1	0.0491	0.00005	0.0278	0.0015	0.125	31.8	1.07	12.30
WQ-18-Ecology Pond	Ponded	11.18	1370	2.25	0.8615	0.01070	0.03345	0.0015	0.0098	7.40	1.55	2.25
WQ-19-No. 10 Seep	95 [1]	3.04	2130	0.25	0.0114	0.00008	0.0193	0.008	0.0941	18.3	19.8	25.6
Tailings Pond	Ponded	9.04	1600	2.87	1.17	0.02053	0.0333	0.0037	0.0018	0.002	0.03	0.061
Extraction Pond	Ponded	3.52	2000	0.15	0.0005	0.00005	0.0434	0.0020	0.0720	50.3	12.3	22.5

NM-Not Measured

Upstream Drainages include Silver Bow, Dixie, and Yankee Doodle Creeks; Individual sites described in Table 2-1 and shown on Figure 2-1.

(1) Flow measured during fall event only.

All metals concentrations for total recoverable fraction.

Concentrations are average of June and October 2020 results; Below detect values replaced with 1/2 DL.

Complete 2020 database in Appendix A.

West Ridge Drainages

The 2020 monitoring program included two mainstem sites (BRCD-2 and BRCD-4) and two spring sites (BRCD-5 and BRCD-6) in Bull Run Creek drainage, and two mainstem sites (OFGD-1 and OFGD-3) and one spring site (OFGD-4) in Oro Fino Gulch along the west flank of West Ridge (Figure 2-1). Similar to the upstream sites, surface water in these drainages is a calcium-bicarbonate type water with alkaline pH. Trace metal concentrations are generally low at these sites although some concentrations are higher than in the upstream drainages due to the increase in bedrock mineralization southward along the West Ridge. Boron, chromium, lithium, nickel, selenium, silver, thallium, vanadium and zinc concentrations were equal to or less than the PRDL in all samples from these drainages in 2020. As shown in Appendix B, concentrations of the YDTI indicator parameters show no consistent increasing trends for the period of record at all West Ridge surface water sites.

Yankee Doodle Tailings Pond

The tailings pond water (site WQ-9A) is a calcium-sulfate type water with a 2020 average filed-measured pH of 9.04 as measured from the decant barge. Compared to the upstream and West Ridge drainages, the tailings pond water is enriched in sulfate, fluoride, molybdenum, tungsten, and rubidium (Table 3-1), making these potential indicators of tailings pond-influenced waters. The 2020 tailings pond concentrations are similar to past sampling results for the indicator and other parameters with slight to moderate increases in fluoride and sulfate over the past few years (Appendix B), and a slight decrease in the tailings pond pH and alkalinity in 2020 (Figure 3-1).

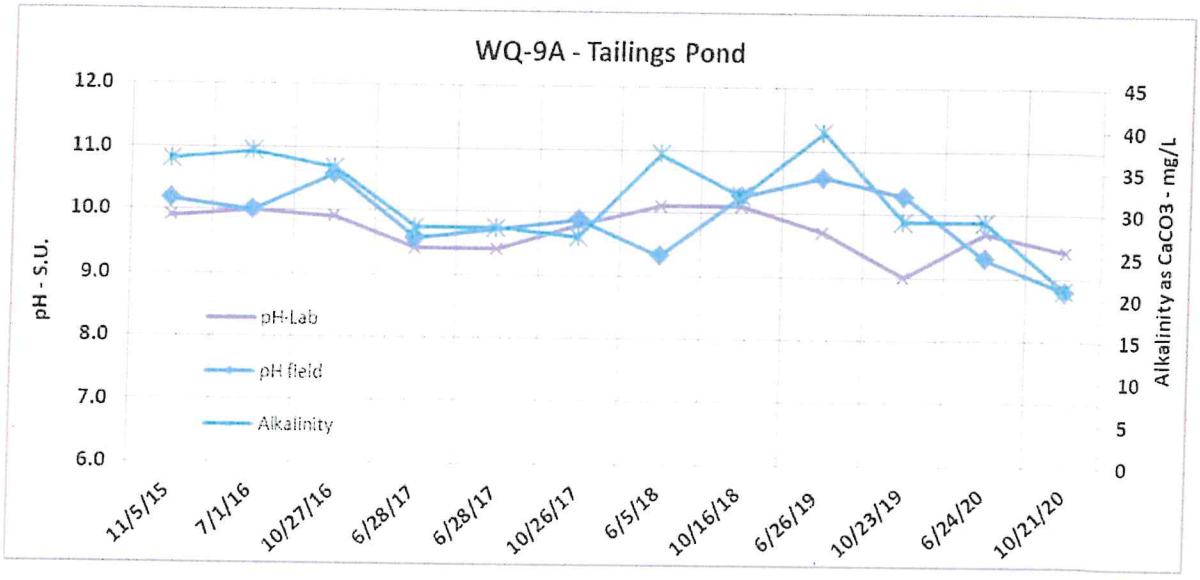


FIGURE 3-1. ALKALINITY AND PH TRENDS IN TAILINGS POND

Extraction Pond

The Extraction Pond receives drainage from the west embankment drain (WED) and was added to the operational monitoring program in 2020. Field-measured pH of the Extraction Pond water ranged from 3.97 to 3.06 and averaged 3.52 in 2020. Concentrations of some metals, including aluminum,

cadmium, copper, iron, lead, manganese, uranium and zinc, are enriched in the Extraction Pond as compared to the tailings pond. The Extraction Pond water also differs significantly from the tailings pond in general chemistry, with average 2020 magnesium concentrations in the extraction and tailings ponds 94 and 8.3 mg/L, respectively. The Extraction Pond is a lined facility with the captured water contained through pumping to the YDTI.

Active Mine Site

Water quality at the active mine site monitoring locations is variable with some sites exhibiting highly elevated metals concentrations, consistent with past sampling results from these sites. The affected waters at the mine site monitoring locations are all treated and/or contained within the Continental Mine process circuit.

3.2 GROUNDWATER MONITORING RESULTS

The 2020 groundwater monitoring results are summarized in Table 3-2 with the complete 2020 water quality database included in Appendix A. Concentration trend plots for the indicator parameters molybdenum, tungsten, rubidium, fluoride, and sulfate are included in Appendix B.

Table 3-2 includes average concentrations of select parameters from the June and October 2020 groundwater sampling events. Parameters presented in Table 3-2 are the same indicator and general interest parameters as presented in Section 3.1 for surface water plus groundwater elevations and nitrate plus nitrite as nitrogen concentrations. Also shown are the average 2020 concentrations for the tailings pond (site WQ-9A) for comparison to the groundwater concentrations. Key points of interest in the 2020 dataset include:

- As described in previous reports (MR, 2018), groundwater in the majority of the West Ridge area is a calcium-bicarbonate type water with some calcium-sulfate type waters in the south portion of the ridge, corresponding to an increase in bedrock mineralization.

- Concentrations of several trace metals were near or less than the analytical detection limits in most 2020 samples. Parameters with concentrations less than the laboratory reporting limits in all 2020 groundwater samples include boron, chromium, lead, lithium, mercury, nickel, silver, thallium and vanadium (Appendix A). Trace metals detected on the most frequent basis (>90% of samples) include molybdenum, rubidium, strontium, and uranium.

- Concentrations of potential indicator parameters fluoride, sulfate, tungsten, rubidium, and molybdenum are all one to four orders of magnitude lower in the groundwater samples than in the tailings pond water (Table 3-2). As shown in the Appendix B trend graphs, none of the monitoring wells exhibit overall consistent increasing concentration trends for these parameters. Although a couple of the wells, MW15-05 and MW16-02D exhibit an overall increase in sulfate (and in the case on MW16-02D molybdenum), concentrations over the period of record, the remaining indicator parameter concentrations remain relatively stable. This is consistent with the West Ridge groundwater levels being 40 feet or more higher than the tailings pond level, and suggests geochemical interactions with the local bedrock causing these localized concentration trends.

TABLE 3-2. 2020 MONITORING WELL AVERAGE PARAMETER CONCENTRATIONS

Monitoring Well	GWE	Field pH	N+N	Sulfate	Fluoride	Molybdenum	Tungsten	Rubidium	Arsenic	Uranium	Copper	Iron	Manganese
	feet	*S.U.*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*	*mg/L*
MW12-11	6472.51	7.06	0.485	27	0.1	0.0019	0.00010	0.00135	0.0085	0.0159	0.0010	0.020	0.0015
MW12-12	6436.50	8.305	0.02	41	0.20	0.0077	0.00013	0.00037	0.0083	0.0804	0.0010	0.020	0.012
MW12=13	6473.79	6.975	0.26	51	0.10	0.0023	0.00010	0.00110	0.0040	0.0077	0.0010	0.020	0.003
MW12-14	6445.75	7.35	0.75	4.0	0.10	0.0001	0.00010	0.00050	0.0020	0.0010	0.0010	0.020	0.001
MW12-15	6498.44	7.49	2.69	150	0.1	0.0034	0.00010	0.00160	0.0050	0.0211	0.0020	0.120	0.008
MW12-16	6403.30	7.59	1.45	70	0.1	0.0024	0.00010	0.00085	0.0030	0.0070	0.0010	0.020	0.001
MW12-17	6443.10	8.14	0.22	54	0.1	0.0060	0.00010	0.00093	0.0087	0.0236	0.0010	0.02	0.004
MW12-18	6444.20	6.89	1.42	20	0.10	0.0004	0.00010	0.00057	0.0017	0.0024	0.0010	0.02	0.001
MW15-01	6455.92	7.55	0.96	28	0.1	0.0005	0.00010	0.00045	0.0050	0.0013	0.0010	0.02	0.001
MW15-02	6429.34	7.39	0.53	10.0	0.1	0.0006	0.00010	0.00045	0.0040	0.0037	0.0010	0.02	0.001
MW15-03	6395.64	7.55	1.34	62.5	0.10	0.0059	0.00010	0.00060	0.0050	0.0186	0.0010	0.030	0.002
MW-15-04	6394.21	7.22	0.44	40	0.1	0.0009	0.00010	0.00100	0.0010	0.0022	0.0010	0.040	0.004
MW-15-05	6440.61	7.93	0.48	54	0.1	0.0121	0.00010	0.00075	0.0050	0.0327	0.0010	0.02	0.015
MW-15-06	6436.27	7.745	0.01	7.5	0.2	0.0096	0.00010	0.00095	0.0135	0.0228	0.0010	0.045	0.039
MW-15-07	6410.93	7.11	0.30	10	0.10	0.0003	0.00010	0.00035	0.0010	0.0010	0.0010	0.02	0.001
MW-15-08	6416.88	6.48	0.23	9.0	0.1	0.0004	0.00010	0.00100	0.0010	0.0002	0.0010	0.020	0.008
MW-15-09	6433.11	6.84	0.25	37	0.1	0.0015	0.00010	0.00080	0.0025	0.0009	0.0010	0.020	0.012
MW-15-10	6359.61	6.18	0.34	20	0.1	0.0002	0.00010	0.00053	0.0010	0.0011	0.0010	0.020	0.014
MW-15-11	6382.21	7.58	0.14	45	0.1	0.0024	0.00010	0.00103	0.0010	0.0177	0.0010	0.02	0.001
MW-15-12	6381.68	6.86	0.07	14	0.10	0.0035	0.00010	0.00065	0.0010	0.0029	0.0010	0.020	0.001
MW-15-13	6382.39	7.43	0.08	16	0.10	0.0026	0.00010	0.00035	0.0010	0.0046	0.0010	0.020	0.001
MW-16-01	6405.12	7.81	0.01	61	0.50	0.0150	0.00760	0.00145	0.0775	0.0121	0.0010	0.020	0.030
MW-16-02D	6407.46	7.51	0.01	61	0.20	0.0065	0.00160	0.00185	0.0140	0.0035	0.0010	0.030	0.086
MW-16-02S	6455.18	8.105	4.79	120	0.10	0.0042	0.00110	0.00110	0.0665	0.0099	0.0015	0.020	0.001
WQ-9A-Tailings Pond		*9.04*	*0.61*	1600	2.9	*1.17*	*0.0205*	*0.0333*	*0.00367*	*0.0018*	0.0023	0.030	*0.061*

Concentrations shown are average of June and October 2020 sample results.
N+N - Nitrate plus Nitrite as N
Individual sites described in Table 2-3 and shown on Figure 2-2.
All metals concentrations are dissolved fraction.
Below detect values replaced with DL.

With few exceptions, the 2020 groundwater samples represent high quality groundwater with low to non-detect concentrations of most trace metals and potential indicator parameters. The 2020 groundwater monitoring results are consistent with previous groundwater monitoring results dating back as far as 2012 for some wells.

3.3 GROUNDWATER ELEVATION DATA

Groundwater elevation monitoring is an important component of the tailings impoundment monitoring program since long-term hydrodynamic containment, particularly along the West Ridge, is dependent, in part, on the existing hydrologic divide beneath the ridge crest, as well as engineered controls and components of the YDTI operations and management program (MR, 2018). The 2020 monitoring program included monthly manual water level measurements and continuous monitoring with VWPs in the 24 monitoring wells shown in Figure 2-2. Table 3-3 includes the monthly manual data for each available well, and the corresponding tailings pond (site WQ-9A) elevations for comparison. Appendix C includes period-of-record hydrographs for each well based on the continuous water level data. Note that all elevations presented below are relative to the local Anaconda Mine Grid datum.

Water levels at most wells continued to increase in 2020, consistent with recent trends. For example, groundwater elevations at well MW12-16 (Figure 2-2), completed along the West Ridge crest in a localized area of lower groundwater elevations referred to as the groundwater potentiometric low (MR, 2018), has shown a steady net increase from about 6,378 feet in 2015 to over 6,400 feet in 2020. MW15-03, also completed within the potentiometric low area, increased from 6,378 to 6,395 feet during the same period. Monitoring wells MW16-01 and MW16-02D, completed near the West Ridge crest in a deep, localized fracture system, have exhibited the greatest water level increases over the past few years with water levels increasing from approximately 6,350 feet following completion in 2016, to over 6400 feet in 2020. In general, the 2020 groundwater levels show a slight decline since 2019 but are still near the highest on record at most wells. Consistent with past results, the highest groundwater elevations along the West Ridge crest occurred at southern-most well MW12-15 (average 6,498 in 2020), and the lowest groundwater elevations were observed at MW15-03 (average 6,395). For comparison, the tailings pond elevation ranged from about 6358 to 6360 feet in 2020 (Table 3-3).

In summary, the 2020 monitoring results show the West Ridge area groundwater and surface water to be of good quality with near neutral pH and generally low trace metal concentrations. The presence of arsenic and uranium in some wells at concentrations greater than the applicable human health standards is attributable to naturally occurring background conditions as opposed to the YDTI based on their occurrence in upgradient groundwater and the near or less than detect concentrations in the tailings impoundment water. The 2020 monitoring results are consistent with prior monitoring results dating back to 2012 for some sites, with no consistent increasing trends for the indicator parameters detected at any sites. A number of metals, including boron, chromium, lead, nickel, selenium, silver, thallium, and vanadium, have consistently been near or less than the analytical detection limits in all samples collected to date and may be considered for elimination from the monitoring program.

TABLE 3-3. 2020 MONITORING WELL MANUAL WATER LEVEL DATA

Well	Measuring Point Elevation	Depth to Water - feet										2020 Mean
		1/21/20	2/28/20	3/30/20	4/29/20	5/26/20	6/22/20	7/24/20	9/24/20	10/19/20	12/8/20	
West Ridge Crest												
MW 12-11	6521.41	48.36	49.34	49.99	50.57	50.07	49.27	46.88	47.97	48.53	49.56	49.05
MW 12-12	6475.87	41.01	41.97	42.51	41.22	40.24	38.26	36.91	39.91	40.71	42.00	40.47
MW 12-13	6490.28	22.37	23.80	24.66	19.08	17.57	13.30	13.27	18.25	19.69	22.05	19.40
MW 12-14	6476.47	35.03	36.25	36.94	32.47	32.19	27.86	27.68	32.27	33.55	35.36	32.96
MW 12-15	6518.91	21.09	21.90	22.43	21.44	20.59	19.05	18.23	21.44	22.05	23.05	21.13
MW 12-16	6487.58	84.10	85.38	86.23	86.45	85.04	84.35	82.99	83.13	83.76	85.29	84.67
MW 12-17	6472.97	30.41	31.64	32.31	31.40	30.80	29.65	27.63	29.28	30.34	32.10	30.56
MW 12-18	6472.65	30.56	31.83	32.12	28.85	29.15	27.27	26.61	29.73	30.88	32.55	29.96
MW 15-01	6504.13	45.69	47.23	48.29	48.67	48.68	47.81	46.63	47.89	48.68	50.02	47.96
MW 15-02	6483.34	56.90	58.20	59.08	56.64	55.68	52.04	51.85	54.94	56.10	57.80	55.92
MW 15-03	6487.41	91.29	92.34	92.85	93.10	92.13	91.46	90.12	90.74	91.09	92.05	91.72
MW 15-05	6468.72	28.38	29.2	29.72	29.33	28.59	26.95	25.7	27.53	28.25	29.45	28.31
MW 15-06	6468.97	33.39	34.24	34.68	34.35	33.55	32.35	30.69	32.95	33.58	34.63	33.44
MW 15-07	6464.65	56.18	57.15	57.7	55.94	55.33	52.24	51.13	54.35	55.19	56.56	55.18
MW 15-08	6464.57	50.75	51.75	52.38	49.67	49.4	45.31	44.29	48.91	50.07	51.65	49.42
MW 16-01	6501.53	96.23	96.88	97.04	98.32	97.37	96.53	95.93	96.20	96.45	96.77	96.77
MW 16-02S	6499.33	41.85	43.35	44.33	44.68	44.69	43.69	42.68	43.98	44.71	46.03	44.00
MW 16-02D	6499.41	92.04	92.65	92.85	94.18	93.05	92.23	91.65	91.95	92.13	92.45	92.52
West Ridge East Flank												
MW 15-04	6435.98	44.66	45.68	46.26	40.93	40.93	40.10	40.22	42.62	43.40	44.90	42.97
North of Impoundment												
MW 15-09	6455.25	27.26	NM	NM	25.83	22.50	18.95	19.70	24.13	25.51	27.78	23.96
East of Impoundment												
MW 15-12	6436.18	57.03	57.07	56.92	55.99	55.72	53.19	51.55	NM	NM	56.55	55.50
MW 15-13	6420.83	41.84	42.38	42.57	41.38	40.60	37.45	37.68	NM	NM	41.06	40.62

Well	Screened Interval feet bgs	Groundwater Elevation										2020 Mean
		1/21/20	2/28/20	3/30/20	4/29/20	5/26/20	6/22/20	7/24/20	9/24/20	10/19/20	12/8/20	
West Ridge Crest												
MW 12-11	145-195	6473.05	6472.07	6471.42	6470.84	6471.34	6472.14	6474.53	6473.44	6472.88	6471.85	6472.35
MW 12-12	160-195	6434.86	6433.90	6433.36	6434.65	6435.63	6437.61	6438.96	6435.96	6435.16	6433.87	6435.40
MW 12-13	145-195	6467.91	6466.48	6465.62	6471.20	6472.71	6476.98	6477.01	6472.03	6470.59	6468.23	6470.87
MW 12-14	100-150	6441.44	6440.22	6439.53	6444.00	6444.28	6448.61	6448.79	6444.20	6442.92	6441.11	6443.51
MW 12-15	150-200	6497.82	6497.01	6496.48	6497.47	6498.32	6499.86	6500.68	6497.47	6496.86	6495.86	6497.78
MW 12-16	140-190	6403.48	6402.20	6401.35	6401.13	6402.54	6403.23	6404.59	6404.45	6403.82	6402.29	6402.91
MW 12-17	155-195	6442.56	6441.33	6440.66	6441.57	6442.17	6443.32	6445.34	6443.69	6442.63	6440.87	6442.41
MW 12-18	80-115	6442.09	6440.82	6440.53	6443.80	6443.50	6445.38	6446.04	6442.92	6441.77	6440.10	6442.69
MW 15-01	182-222	6458.44	6456.90	6455.84	6455.46	6455.45	6456.32	6457.50	6456.24	6455.45	6454.11	6456.17
MW 15-02	147-197	6426.44	6425.14	6424.26	6426.70	6427.66	6431.30	6431.49	6428.40	6427.24	6425.54	6427.42
MW 15-03	345-385	6396.12	6395.07	6394.56	6394.31	6395.28	6395.95	6397.29	6396.67	6396.32	6395.36	6395.69
MW 15-05	240-290	6440.34	6439.52	6439.00	6439.39	6440.13	6441.77	6443.02	6441.19	6440.47	6439.27	6440.41
MW 15-06	350-400	6435.58	6434.73	6434.29	6434.62	6435.42	6436.62	6438.28	6436.02	6435.39	6434.34	6435.52
MW 15-07	162-202	6408.47	6407.50	6406.95	6408.71	6409.32	6412.41	6413.52	6410.30	6409.46	6408.09	6409.48
MW 15-08	81-101	6413.82	6412.82	6412.19	6414.90	6415.17	6419.26	6420.28	6415.66	6414.50	6412.92	6415.16
MW 16-01	485-517	6405.30	6404.65	6404.49	6403.21	6404.16	6405.00	6405.60	6405.33	6405.08	6404.76	6404.76
MW 16-02S	489-549	6457.48	6455.98	6455.00	6454.65	6454.64	6455.64	6456.65	6455.35	6454.62	6453.30	6455.33
MW 16-02D	244-264	6407.37	6406.76	6406.56	6405.23	6406.36	6407.18	6407.76	6407.46	6407.28	6406.96	6406.89
West Ridge East Flank												
MW 15-04	170-220	6391.32	6390.30	6389.72	6395.05	6395.05	6395.88	6395.76	6393.36	6392.58	6391.08	6393.01
North of Impoundment												
MW 15-09	92-142	6427.99	NM	NM	6429.42	6432.75	6436.30	6435.55	6431.12	6429.74	6427.47	6431.29
East of Impoundment												
MW 15-12	68-98	6379.15	6379.11	6379.26	6380.19	6380.46	6382.99	6384.63	NM	NM	6379.63	6380.68
MW 15-13	81-101	6378.99	6378.45	6378.26	6379.45	6380.23	6383.38	6383.15	NM	NM	6379.77	6380.21
WQ-9A	**Tailings Pond**	**6357.7**	**6358.4**	**6359.2**	**6359.6**	**6360.1**	**6360.5**	**6359.7**	**6358.5**	**6358.5**	**6359.0**	**6359.1**

NM - Not Measured

bgs - below ground surface

All elevations in feet, Anaconda Mine Grid Datum (USGS=ACM-58.00 ft).

Well locations shown on Figure 2-2.

4.0 2020 DATA VALIDATION RESULTS

All 2020 groundwater and surface water samples have been validated in accordance with the EPA's data validation guidelines (EPA, 2017) and the 2020 project FSAP (Hydrometrics, 2020). The data validation process includes a review of sampling procedures to ensure consistency with the project FSAP and Standard Operating Procedures (SOPs), and detailed review of all field measurement and laboratory analytical results. All field QC sample analytical results were reviewed for compliance with appropriate criteria (DI and rinsate blank results less than PRDLs; field duplicate results within +/-20% relative percent difference or RPD) and qualified with appropriate flagging if noncompliant. Laboratory QC samples (laboratory blanks, duplicates, spikes) were also reviewed with exceedances noted in the validation reports although no data flagging occurs for laboratory QC exceedances at the "Standard" level of validation. Following validation and flagging, the data were uploaded to the Montana Resources Project EnviroData database.

The number of field samples, QC samples, and validation results are summarized in Table 4-1. As shown, rubidium exceeded the QC criteria in the June surface water event duplicate sample with an RPD of 21% compared to the QC criteria of 20%. As a result, all of the rubidium results from the June surface water event were flagged with a "J". Nitrate plus nitrate as nitrogen was detected in one of the October groundwater event DI blanks resulting in three associated field samples being flagged "B". All other 2020 QC sample results were within the associated QC criteria. These few QC exceedances are all relatively minor in magnitude and do not adversely affect the usability of the data, which is to further document current water quality conditions and concentration trends in the YDTI West Ridge area groundwater and surface water.

TABLE 4-1. 2020 QC SAMPLE COLLECTION AND DATA VALIDATION SUMMARY

Monitoring Event	No. Field Samples	Field QC Samples			QC Exceedances
		DI Blanks	*Rinsate Blanks*	*Dupli-cates*	
June Surface Water	20	1	0	1	DI Blank: None Duplicate: Rb, 21% RPD, all samples flagged "J"
October Surface Water	18	2	0	2	DI Blanks: None Duplicates: None
June Groundwater	24	2	2	3	DI/Rinsate Blanks: None Duplicates: None
October Groundwater	24	2	2	3	DI Blanks: N+N as N exceedance, 3 associated field samples flagged "B" Rinsate Blanks: None Duplicates: None

5.0 REFERENCES

EPA, 2017. National Functional Guidelines for Inorganic Superfund Methods Data Review. EPA-540-R-2017-001. Office of Superfund Remediation and Technology Innovation. January 2017.

Hydrometrics, Inc., 2020. Montana Resources 2020 Field Sampling and Analysis Plan. Prepared for Montana Resources, LLP. June 2020.

Montana Resources, LLP (MR), 2018. Amendment to Operating Permits 00030 and 00030A to Continue Operations at the Continental Mine. May 2018.

Montana Resources, LLP (MR), 2019. Montana Resources Continental Mine Operations Plan. January 2019.

APPENDIX A

2020 BASELINE AND OPERATIONAL WATER RESOURCES MONITORING DATABASE

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT JUNE 2020 GROUNDWATER QUALITY DATA

Station Name	Reporting Units	MW-15-05	MW-12-18	MW-12-18	MW-15-02	MW-16-02S	MW-15-09	RINSATE BLANK	MW-12-13	MW-12-15	MW-12-17	MW-12-17	MW-15-01	MW-12-14	MW-15-03	MW-15-07	MW-15-08
Sample Date		6/22/20 14:10	6/22/20 15:25	6/22/20 16:00	6/22/20 16:55	6/22/20 17:50	6/23/20 09:45	6/23/20 12:15	6/23/20 10:40	6/23/20 10:55	6/23/20 11:40	6/23/20 12:05	6/23/20 12:55	6/23/20 12:55	6/23/20 15:55	6/23/20 14:10	6/23/20 14:45
Sample ID		MR-2006-200	MR-2006-201	MR-2006-202	MR-2006-203	MR-2006-204	MR-2006-205	MR-2006-206	MR-2006-207	MR-2006-208	MR-2006-209	MR-2006-210	MR-2006-211	MR-2006-212	MR-2006-213	MR-2006-214	MR-2006-215
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks				Duplicate				Blank				Duplicate					
Lab Sample ID		H20060728-015	H20060728-016	H20060728-017	H20060728-018	H20060728-019	H20060728-020	H20060728-021	H20060728-022	H20060728-023	H20060728-024	H20060728-025	H20060728-026	H20060728-027	H20060728-028	H20060728-001	H20060728-002
Field Parameters																	
Depth to Water	Feet	26.92	27.23	27.23	51.9	43.58	18.78		13.3	18.8	29.63	29.63	47.7	27.83	91.75	52.24	45.31
Dissolved Oxygen	mg/L	4.63	7.84	7.84	8.78	0.91	0.8		0.48	2.69	1.69	1.7	6.97	8.69	1.02	8.53	7.4
Field pH	s.u.	7.99	6.75	6.75	7.35	8.07	7		7.11	7.53	8.17	8.17	7.54	7.43	7.6	7.2	6.6
Field Specific Conductivity	umhos/cm	462	482	482	514	527	190		387	699	334	334	206	182	366	216	173
Water Temperature	Deg C	8.6	7.9	7.9	8.4	8.4	7.9		8.8	8.1	8.9	8.9	8.6	8.6	10.4	9.8	8.7
Physical Parameters																	
pH	s.u.	8 H	6.9 H	6.9 H	7.5 H	8.1 H	7 H	6.1 H	7.3 H	7.6 H	8.2 H	8.2 H	7.7 H	7.3 H	7.7 H	7.2 H	6.6 H
Specific Conductivity	umhos/cm	474	494	494	530	558	206	6	411	711	356	357	214	199	377	247	186
Total Dissolved Solids	mg/L	282	340	353	342	362	134	<10	254	468	221	213	141	125	228	151	130
Total Suspended Solids	mg/L	<10	<10	<10	<10	12	<10	<10	16	37	<10	<10	<10	<10	10	76	32
Major Constituents - Commons Ions																	
Alkalinity as CaCO3	mg/L	180 D	100 D	100 D	140 D	120 D	56 D	2 D	130 D	170 D	110 D	120 D	65 D	77 D	110 D	82 D	62 D
Bicarbonate as HCO3	mg/L	220 D	120 D	120 D	170 D	150 D	68 D	2 D	160 D	210 D	140 D	140 D	79 D	94 D	140 D	100 D	75 D
Carbonate as CO3	mg/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Chloride	mg/L	5	65	67	66	5	1	<1	12	17	4	4	2	8	4	13	10
Fluoride	mg/L	0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1
Sulfate	mg/L	52	19	20	9	117	36	<1	50	144	54	54	28	4	60	10	9
Nutrients																	
Nitrate + Nitrite as N	mg/L	0.46	1.47	1.47	0.52	4.78 D	0.24	<0.01	0.16	2.63 D	0.21	0.21	0.94	0.76	1.28	0.3	0.24
Phosphorus (TOT)	mg/L	0.04	0.06	0.07	0.04	0.44	0.03	<0.01	0.03	0.09	0.04	0.04	0.11	0.11	0.06	0.11	0.45
Metals - Trace Constituents																	
Aluminum (DIS)	mg/L	<0.005	<0.005	<0.005	<0.005	0.017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.008	0.007	0.036	<0.005
Antimony (DIS)	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	0.0007	<0.0005	<0.0005	0.0016	<0.0005	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (DIS)	mg/L	0.005	0.002	0.002	0.004	0.09	0.003	<0.001	0.004	0.005	0.009	0.009	0.005	0.002	0.005	<0.001	0.001
Boron (DIS)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (DIS)	mg/L	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.00011	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Calcium (DIS)	mg/L	63	55	55	68	52	18	<1	50	98	42	42	23	22	44	23	17
Chromium (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	0.002	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.001
Iron (DIS)	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	0.02	<0.02	<0.02
Lead (DIS)	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Lithium (DIS)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (DIS)	mg/L	13	14	14	13	13	8	<1	9	19	11	11	6	5	13	7	5
Manganese (DIS)	mg/L	0.016	<0.001	<0.001	<0.001	<0.001	0.014	<0.001	0.003	0.007	0.004	0.004	<0.001	<0.001	0.002	<0.001	0.009
Mercury (DIS)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum (DIS)	mg/L	0.0126	0.0004	0.0004	0.0006	0.0057	0.0015	<0.0001	0.0025	0.0034	0.0061	0.0062	0.0005	0.0001	0.0058	0.0003	0.0004
Nickel (DIS)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Potassium (DIS)	mg/L	5	5	5	4	6	3	<1	5	6	5	5	3	3	4	3	4
Rubidium (DIS)	mg/L	0.0008	0.0006	0.0006	0.0005	0.0011	0.0008	<0.0001	0.0013	0.0017	0.001	0.001	0.0005	0.0005	0.0006	0.0004	0.0011
Selenium (DIS)	mg/L	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon (DIS)	mg/L	6	13.7	13.8	10.8	11.9	11.2	<0.1	11	7.6	6.2	6.2	12.5	12.4	10.1	13	17.2
Silver (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (DIS)	mg/L	14	10	10	8	39	7	<1	14	13	9	9	6	6	8	7	6
Strontium (DIS)	mg/L	0.55	0.22	0.22	0.24	0.28	0.09	<0.01	0.29	0.44	0.2	0.21	0.11	0.11	0.32	0.16	0.13
Thallium (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tungsten (DIS)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	0.0012	<0.0001	<0.0001	<0.0001	<0.0001	0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (DIS)	mg/L	0.0342	0.0026	0.0025	0.0037	0.0135	0.0009	<0.0002	0.0093	0.0223	0.024	0.025	0.0014	0.0009	0.0216	0.001	<0.0002
Vanadium (DIS)	mg/L	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (DIS)	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT JUNE 2020 GROUNDWATER QUALITY DATA

Station Name	Reporting Units	MW-12-11	MW-15-04	MW-12-16	MW-16-02D	MW-15-06	MW-12-12	MW-16-01	DI BLANK	MW-15-12	RINSATE BLANK	MW-15-10	MW-15-11	MW-15-11	MW-15-13	DI BLANK
Sample Date		6/23/20 15:50	6/23/20 16:35	6/23/20 18:05	6/24/20 14:50	6/24/20 15:45	6/24/20 19:10	6/25/20 08:45	6/25/20 10:00	6/25/20 09:35	6/25/20 10:15	6/25/20 11:05	6/25/20 12:35	6/25/20 12:55	6/25/20 13:20	6/25/20 14:00
Sample ID		MR-2006-216	MR-2006-217	MR-2006-218	MR-2006-219	MR-2006-220	MR-2006-221	MR-2006-222	MR-2006-223	MR-2006-224	MR-2006-225	MR-2006-226	MR-2006-227	MR-2006-228	MR-2006-229	MR-2006-230
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks									Blank		Blank			Duplicate		Blank
Lab Sample ID		H20060728-003	H20060728-004	H20060728-005	H20060728-006	H20060728-007	H20060728-008	H20060728-009	H20060728-010	H20060728-011	H20060728-012	H20060728-013	H20060728-014	H20060728-029	H20060728-030	H20060728-031
Field Parameters																
Depth to Water	Feet	49.23	40.1	84.32	92.1	32.15	37.92	96.4		53.12		8.56	153.97	153.97	36.87	
Dissolved Oxygen	mg/L	4.69	2.98	7.64	5.96	0.49	0.06	1.76		4.19		8.63	3.4	3.4	8.37	
Field pH	s.u.	7.06	7.02	7.45	7.36	7.77	8.34	7.77		6.55		6.26	7.56	7.56	7.39	
Field Specific Conductivity	umhos/cm	310	236	345	275	320	276	251		156		125	298	298	192	
Water Temperature	Deg C	8.9	9.2	9	13.6	8.5	8.4	8.7		7.7		9.1	9.5	9.5	7.7	
Physical Parameters																
pH	s.u.	7.2 H	7.2 H	7.5 H	7.7 H	8.2 H	8.3 H	8.1 H	5.8 H	6.8 H	6 H	6.4 H	7.8 H	7.8 H	7.4 H	5.7 H
Specific Conductivity	umhos/cm	330	244	365	271	319	292	260	6	168	6	136	318	322	208	6
Total Dissolved Solids	mg/L	196	162	230	167	183	171	149	<10	110	<10	114	200	195	122	<10
Total Suspended Solids	mg/L	<10	<10	<10	<10	16	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Major Constituents - Commons Ions																
Alkalinity as CaCO3	mg/L	89 D	71 D	86 D	55 D	150 D	94 D	46 D	3 D	68 D	2 D	41 D	110 D	110 D	88 D	2 D
Bicarbonate as HCO3	mg/L	110 D	86 D	100 D	67 D	180 D	110 D	55 D	3 D	82 D	<2	49 D	140 D	140 D	110 D	2 D
Carbonate as CO3	mg/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Chloride	mg/L	28	1	9	5	4	5	6	<1	<1	<1	<1	1	1	<1	<1
Fluoride	mg/L	<0.1	<0.1	<0.1	0.2	0.2	0.2	0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Sulfate	mg/L	22	40	69	60	7	40	59	<1	14	<1	19	44	45	15	<1
Nutrients																
Nitrate + Nitrite as N	mg/L	0.48	0.47	1.45	<0.01	<0.01	0.01	<0.01	<0.01	0.07	<0.01	0.33	0.13	0.13	0.08	<0.01
Phosphorus (TOT)	mg/L	0.13	0.03	0.04	0.01	0.02	0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Metals - Trace Constituents																
Aluminum (DIS)	mg/L	<0.005	0.017	<0.005	<0.005	<0.005	<0.005	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Antimony (DIS)	mg/L	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	0.0019	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (DIS)	mg/L	0.009	<0.001	0.003	0.016	0.014	0.009	0.082	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron (DIS)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (DIS)	mg/L	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Calcium (DIS)	mg/L	36	23	37	31	46	37	29	<1	19	<1	11	42	42	27	<1
Chromium (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Iron (DIS)	mg/L	<0.02	0.03	<0.02	0.04	0.04	<0.02	0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead (DIS)	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Lithium (DIS)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (DIS)	mg/L	9	7	13	4	4	4	3	<1	4	<1	2	7	7	5	<1
Manganese (DIS)	mg/L	0.002	0.004	<0.001	0.088	0.04	0.011	0.032	<0.001	<0.001	<0.001	0.016	<0.001	<0.001	<0.001	<0.001
Mercury (DIS)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum (DIS)	mg/L	0.0019	0.0009	0.0024	0.0066	0.0096	0.0082	0.0153	<0.0001	0.0035	<0.0001	0.0002	0.0024	0.0024	0.0026	<0.0001
Nickel (DIS)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Potassium (DIS)	mg/L	3	4	5	3	4	4	4	<1	2	<1	2	2	2	2	<1
Rubidium (DIS)	mg/L	0.0013	0.0011	0.0009	0.002	0.001	0.0004	0.0015	<0.0001	0.0007	<0.0001	0.0006	0.0011	0.0011	0.0004	<0.0001
Selenium (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	0.007	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon (DIS)	mg/L	10.2	15.3	11.7	6.3	5.4	4.9	3.4	<0.1	10.3	<0.1	19.4	8.6	8.4	8.4	<0.1
Silver (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (DIS)	mg/L	9	10	9	11	12	13	12	<1	5	<1	11	10	9	5	<1
Strontium (DIS)	mg/L	0.14	0.15	0.23	0.44	0.48	0.33	0.53	<0.01	0.13	<0.01	0.08	0.15	0.15	0.17	<0.01
Thallium (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tungsten (DIS)	mg/L	<0.0001	<0.0001	<0.0001	0.0017	<0.0001	0.0002	0.0082	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (DIS)	mg/L	0.016	0.0023	0.0071	0.0037	0.0242	0.0879	0.0129	<0.0002	0.0033	<0.0002	0.0011	0.0181	0.0182	0.0047	<0.0002
Vanadium (DIS)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (DIS)	mg/L	<0.008	<0.008	<0.008	0.74	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT JUNE 2020 SURFACE WATER QUALITY DATA

Station Name	Reporting Units	WQ-15 (DC-1)	WQ-10 (SBC-1)	WQ-9A (YDTI-NE)	WQ-2	WQ-5	WQ-6	WQ-8A	WQ-7	WQ-18	WQ-19 (SEEP-10)	EXTRACTION POND	WQ-11 (YDC-1)	BRCD-2	BRCD-6
Sample Date		6/24/20 08:30	6/24/20 09:30	6/24/20 10:00	6/24/20 10:30	6/24/20 11:30	6/24/20 12:15	6/24/20 12:50	6/24/20 13:30	6/24/20 14:00	6/24/20 14:30	6/24/20 15:00	6/24/20 08:00	6/24/20 08:35	6/24/20 08:55
Sample ID		MR-2006-100	MR-2006-101	MR-2006-102	MR-2006-103	MR-2006-104	MR-2006-105	MR-2006-106	MR-2006-107	MR-2006-108	MR-2006-109	MR-2006-110	MR-2006-120	MR-2006-121	MR-2006-122
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks															
Lab Sample ID		H20060734-001	H20060734-002	H20060734-003	H20060734-004	H20060734-005	H20060734-006	H20060734-007	H20060734-008	H20060734-009	H20060734-010	H20060734-011	H20060734-012	H20060734-013	H20060734-014
Field Parameters															
Dissolved Oxygen	mg/L	9.29	9.02	8.14	9.45	9.31	1.73	8.07	8.23	6.96	6.54	6.07	9.13	8.51	4.12
Field pH	s.u.	7.63	7.87	9.3	8.58	8.13	4.41	4.31	3.23	11.09	3.04	3.97	7.21	7.42	7.16
Field Specific Conductivity	umhos/cm	192	202	2,539	404	86	2,692	2,374	1,856	2,809	3,419	3,107	114	221	388
Flow	Cubic Feet Sec												4.68	0.2	0.025
Flow	Gallons Per Min	123	251		200 E										
Water Temperature	Deg C	9.27	9.6	14.9	8.9	9.3	16.5	20.9	15.7	21.9	24.8	14	7.9	8.7	10.4
Physical Parameters															
pH	s.u.	8.1 H	8 H	9.7 H	6.8 H	7.2 H	4.7 H	4.2 H	3.2 H	6.2 H	3 H	3.3 H	7.7 H	7.7 H	7.4 H
Specific Conductivity	umhos/cm	210	214	2,610	420	93	2,580	2,440	1,910	2,140	3,490	3,120	115	225	465
Total Dissolved Solids	mg/L	144	133	2,390	293	73	2,580	2,360	1,640	1,910	3,320	3,180	126	166	321
Total Suspended Solids	mg/L	<10	<10	<10	<10	16	29	<10	<10	35	<10	<10	<10	<10	<10
Major Constituents - Commons Ions															
Alkalinity as CaCO3	mg/L	94 D	98 D	29 D	34 D	21 D	3 D	<2	<2	28 D	<2	<2	45 D	63 D	140 D
Bicarbonate as HCO3	mg/L	110 D	120 D	17 D	40 D	25 D	3 D	<2	<2	34 D	<2	<2	54 D	76 D	170 D
Carbonate as CO3	mg/L	<2	<2	9 D	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Chloride	mg/L	<1	<1	11	10	1	7	7	8	12	11	9	2	10	14
Fluoride	mg/L	<0.1	<0.1	2.6	0.5	<0.1	2.1	3.8	0.6	2	0.2	0.1	<0.1	<0.1	0.3
Sulfate	mg/L	11	11	1,380	131	17	1,550	1,480	995	1,130	2,060	1,970	7	24	66
Nutrients															
Nitrate + Nitrite as N	mg/L	<0.01	<0.01	0.54	0.19	<0.01	0.05	0.14	0.19	2.4 D	0.07	0.2	<0.01	0.51	<0.01
Phosphorus (TOT)	mg/L	0.02	0.02	0.01	0.04	0.04	0.04	0.02	0.07	0.02	0.06	0.05	0.06	0.33	0.27
Metals - Trace Constituents															
Aluminum (DIS)	mg/L	0.079	<0.005	0.052	0.013	0.128	22.8 D	10.6 D	19.2 D	0.95 D	39.3 D	49.6 D	0.368	0.021	0.005
Antimony (TRC)	mg/L	0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0008
Arsenic (TRC)	mg/L	0.008	0.004	0.003	<0.001	0.004	0.003	0.001	0.002	0.001	0.009	0.002	0.006	0.022	0.045
Boron (TRC)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (TRC)	mg/L	<0.00003	<0.00003	0.00013	0.00112	0.00043	0.0065	0.0919	0.162	0.0545	0.229	0.36	0.0001	0.00003	0.00006
Calcium (TRC)	mg/L	26	26	515	44	8	413	428	191	381	455	391	13	23	55
Chromium (TRC)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	0.001	<0.001	0.002	<0.001	0.005	0.004	0.001	<0.001	<0.001
Copper (TRC)	mg/L	0.007	0.003	0.003	0.068	0.031	30.8 D	22.5 L	50.4 L	14.2 L	20 L	52.7 L	0.007	0.004	0.009
Iron (TRC)	mg/L	0.28	0.23	<0.02	<0.02	0.69	30.9	1.2	14.7	2.2	19.2	15.8	0.74	0.21	0.29
Lead (TRC)	mg/L	0.0004	0.0004	<0.0003	<0.0003	0.0038	0.0059	0.0018	0.0187	0.01	0.0004	0.0083	0.0006	0.0004	0.0006
Lithium (TRC)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (TRC)	mg/L	5	5	8	12	2	66	61	65	23	71	100	3	7	12
Manganese (TRC)	mg/L	0.047	0.035	0.044	0.007	0.062	14.7 L	11.2 L	11.8 L	4.09 L	27 L	24.1 L	0.021	0.032	0.209
Mercury (TRC)	ug/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01
Molybdenum (TRC)	mg/L	0.0015	0.002	1.16 D	0.38	0.0016	0.248	0.0531	0.0094	0.573	0.0105	0.0007	0.0009	0.0008	0.0054
Nickel (TRC)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	0.101	0.092	0.093	0.031	0.112	0.149	<0.002	<0.002	<0.002
Potassium (TRC)	mg/L	2	3	36	3	1	5	6	5	24	19	16	2	4	7
Rubidium (TRC)	mg/L	0.0008 J	0.0012 J	0.0331 J	0.0031 J	0.0018 J	0.038 J	0.0274 J	0.0273 J	0.0323 J	0.0211 J	0.0453 J	0.0015 J	0.0013 J	0.0011 J
Selenium (TRC)	mg/L	<0.001	<0.001	0.004	<0.001	<0.001	0.001	0.001	0.002	0.004	<0.001	0.001	<0.001	<0.001	<0.001
Silicon (TRC)	mg/L	11.5	8.6	4.1	13.4	10.3	13	10.4	22.8	10.2	16.1	19.1	14.4	18.5	18.4
Silver (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	0.0002	<0.0002	<0.0002	0.0003	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (TRC)	mg/L	6	6	93	12	4	32	33	22	55	91	65	4	8	16
Strontium (TRC)	mg/L	0.15	0.19	2.62	0.26	0.06	2.08	2.52	0.73	2.86	1.33	1.4	0.07	0.16	0.39
Thallium (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	0.0002	<0.0002	0.0003	0.0005	<0.0002	<0.0002	<0.0002
Tungsten (TRC)	mg/L	<0.0001	<0.0001	0.0217	0.0001	0.0002	0.0001	<0.0001	<0.0001	0.0078	<0.0001	<0.0001	<0.0001	0.0001	0.0002
Uranium (TRC)	mg/L	0.0039	0.0026	0.0018	0.0004	0.0005	0.123	0.0996	0.0725	0.0184	0.117	0.083	0.0008	0.0013	0.0024
Vanadium (TRC)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (TRC)	mg/L	<0.008	<0.008	<0.008	0.288	0.099	8.69	12.1	18.1	6.17	67	48.1	0.009	<0.008	<0.008

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT JUNE 2020 SURFACE WATER QUALITY DATA

Station Name	Reporting Units	BRCD-4	BRCD-4	BRCD-5	OFGD-4	OFGD-1	OFGD-3	DI BLANK	WQ-1
Sample Date		6/24/20 09:30	6/24/20 09:45	6/24/20 10:00	6/24/20 10:35	6/24/20 10:45	6/24/20 11:15	6/24/20 11:45	6/24/20 12:45
Sample ID		MR-2006-123	MR-2006-124	MR-2006-125	MR-2006-126	MR-2006-127	MR-2006-128	MR-2006-129	MR-2006-130
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks			Duplicate					Blank	
Lab Sample ID		H20060734-015	H20060734-016	H20060734-017	H20060734-018	H20060734-019	H20060734-020	H20060734-021	H20060734-022
Field Parameters									
Dissolved Oxygen	mg/L	8.58		7.97	5.29	6.05	9.02		8.22
Field pH	s.u.	7.69		7.68	7.18	7.66	8.01		7.43
Field Specific Conductivity	umhos/cm	305		170	535	606	481		413
Flow	Cubic Feet Sec	0.43		0.007	0.0097	0.029	0.253		0.44
Flow	Gallons Per Min								
Water Temperature	Deg C	11.4		13.1	12.2	15	9.2		11
Physical Parameters									
pH	s.u.	7.9 H	8 H	7.9 H	7.5 H	7.7 H	8 H	5.9 H	7.5 H
Specific Conductivity	umhos/cm	306	305	169	524	603	552	6	407
Total Dissolved Solids	mg/L	215	209	137	321	385	362	<10	275
Total Suspended Solids	mg/L	11	<10	<10	<10	37	<10	<10	<10
Major Constituents - Commons Ions									
Alkalinity as CaCO3	mg/L	83 D	83 D	51 D	180 D	250 D	160 D	2 D	56 D
Bicarbonate as HCO3	mg/L	100 D	100 D	62 D	220 D	300 D	190 D	2 D	68 D
Carbonate as CO3	mg/L	<2	<2	<2	<2	<2	<2	<2	<2
Chloride	mg/L	9	9	5	22	8	16	<1	13
Fluoride	mg/L	0.2	0.2	0.2	0.3	0.3	0.5	<0.1	0.3
Sulfate	mg/L	45	44	16	38	52	91	<1	104
Nutrients									
Nitrate + Nitrite as N	mg/L	0.09	0.09	0.94	0.14	<0.01	<0.01	<0.01	0.03
Phosphorus (TOT)	mg/L	0.2	0.2	0.14	0.06	0.09	0.1	<0.01	0.02
Metals - Trace Constituents									
Aluminum (DIS)	mg/L	0.011	0.012	0.007	<0.005	<0.005	0.009	<0.005	0.119
Antimony (TRC)	mg/L	0.0006	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (TRC)	mg/L	0.037	0.038	0.006	0.011	0.008	0.012	<0.001	0.002
Boron (TRC)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (TRC)	mg/L	0.00004	0.00005	0.00006	<0.00003	<0.00003	<0.00003	<0.00003	0.00182
Calcium (TRC)	mg/L	34	35	16	65	78	68	<1	45
Chromium (TRC)	mg/L	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (TRC)	mg/L	0.006	0.006	0.003	0.002	0.001	0.001	<0.001	0.084
Iron (TRC)	mg/L	0.56	0.68	0.31	0.53	0.2	0.05	<0.02	0.44
Lead (TRC)	mg/L	0.0013	0.0013	0.0013	<0.0003	<0.0003	<0.0003	<0.0003	0.0019
Lithium (TRC)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (TRC)	mg/L	8	8	4	13	18	14	<1	11
Manganese (TRC)	mg/L	0.078	0.081	0.01	0.36	0.258	0.098	<0.001	0.206
Mercury (TRC)	ug/L	0.01	0.01	<0.01	0.02	0.02	<0.01	<0.01	<0.01
Molybdenum (TRC)	mg/L	0.003	0.003	0.0013	0.0057	0.0026	0.0054	<0.0001	0.0009
Nickel (TRC)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Potassium (TRC)	mg/L	5	5	4	4	7	5	<1	3
Rubidium (TRC)	mg/L	0.0021 J	0.0026	0.0029 J	0.0008 J	0.0012 J	0.0008 J	<0.0001	0.0019 J
Selenium (TRC)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon (TRC)	mg/L	17.4	18.2	26.2	14.6	15	13.9	<0.1	14.7
Silver (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (TRC)	mg/L	11	11	8	18	17	17	<1	11
Strontium (TRC)	mg/L	0.2	0.2	0.14	0.59	0.52	0.56	<0.01	0.31
Thallium (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tungsten (TRC)	mg/L	0.0001	<0.0001	0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001
Uranium (TRC)	mg/L	0.0021	0.0021	0.0005	0.0023	0.0014	0.0028	<0.0002	0.0016
Vanadium (TRC)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (TRC)	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.413

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT OCTOBER 2020 GROUNDWATER QUALITY DATA

Station Name	Reporting Units	RINSATE BLANK	DI BLANK	MW-15-05	MW-12-18	MW-15-02	MW-15-02	MW-16-01	MW-16-02S	MW-15-09	MW-15-03	MW-12-13	MW-12-17	MW-12-14	MW-15-01	MW-15-07	MW-15-08
Sample Date		10/19/20 13:05	10/19/20 13:55	10/19/20 13:15	10/19/20 14:25	10/19/20 16:00	10/19/20 16:30	10/19/20 17:05	10/19/20 18:05	10/20/20 09:10	10/20/20 10:20	10/20/20 10:00	10/20/20 11:00	10/20/20 11:45	10/20/20 12:10	10/20/20 12:55	10/20/20 13:30
Sample ID		MR-2010-200	MR-2010-201	MR-2010-202	MR-2010-203	MR-2010-204	MR-2010-205	MR-2010-206	MR-2010-207	MR-2010-208	MR-2010-209	MR-2010-210	MR-2010-211	MR-2010-212	MR-2010-213	MR-2010-214	MR-2010-215
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks		Blank	Blank				Duplciate										
Lab Sample ID		H20100681-001	H20100681-002	H20100681-003	H20100681-004	H20100681-005	H20100681-006	H20100681-007	H20100681-008	H20100681-009	H20100681-010	H20100681-011	H20100681-012	H20100681-013	H20100681-014	H20100681-015	H20100681-016
Field Parameters																	
Depth to Water	Feet			29.3	30.88	56.1		96.42	44.72	25.51	91.8	19.67	30.34	33.6	48.72	55.2	50.07
Dissolved Oxygen	mg/L			0.14	6.32	6.95		0.36	1.04	0.91	1.31	1.1	1.9	8.19	8.58	8.64	8.09
Field pH	s.u.			7.87	7.18	7.42		7.85	8.14	6.68	7.5	6.84	8.08	7.27	7.56	7.01	6.36
Field Specific Conductivity	umhos/cm			461	457	510		251	515	183	363	360	324	186	199	206	167
Water Temperature	Deg C			8.4	7.7	8.3		7.5	8	7.6	9.6	7.5	8.1	7.9	8.5	8.5	8.1
Physical Parameters																	
pH	s.u.	5.7 H	5.6 H	8.0 H	6.8 H	7.4 H	7.4 H	8.0 H	8.0 H	6.9 H	7.7 H	7.1 H	8.1 H	7.4 H	7.7 H	7.2 H	6.6 H
Specific Conductivity	umhos/cm	6	5	460	463	506	505	254	527	197	360	379	347	210	201	224	182
Total Dissolved Solids	mg/L	<10	<10	271	277	286	287	149	348	121	254	255	223	141 H	141 H	150 H	137 H
Total Suspended Solids	mg/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	13	<10	<10	<10	<10	58	47
Major Constituents - Commons Ions																	
Alkalinity as CaCO3	mg/L	<2	<2	180 D	97 D	140 D	140 D	45 D	120 D	55 D	120 D	120 D	110 D	84 D	66 D	80 D	61 D
Bicarbonate as HCO3	mg/L	<2	<2	220 D	120 D	170 D	170 D	55 D	140 D	67 D	140 D	140 D	100 D	80 D	80 D	97 D	74 D
Carbonate as CO3	mg/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Chloride	mg/L	<1	<1	5	70	66	67	6	6	1	4	17	5	9	2	15	11
Fluoride	mg/L	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	0.5	0.1	0.1	0.1	<0.1	0.1	<0.1	0.1	<0.1	<0.1
Sulfate	mg/L	<1	<1	56	21	11	10	62	123	37	65	51	55	4	28	10	9
Nutrients																	
Nitrate + Nitrite as N	mg/L	<0.01	<0.01	0.49	1.33 D	0.54	0.54	<0.01	4.8 D	0.25	1.39 D	0.35	0.25	0.74	0.98	0.29	0.22
Phosphorus (TOT)	mg/L	<0.01	<0.01	0.04	0.07	0.04	0.04	0.05	0.87	0.03	0.06	0.03	0.05	0.06	0.12	0.15	0.46
Metals - Trace Constituents																	
Aluminum (DIS)	mg/L	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.006	0.006	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.02	<0.005
Antimony (DIS)	mg/L	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0017	<0.0005	<0.0005	<0.0005	0.0013	0.0006	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (DIS)	mg/L	<0.001	<0.001	0.005	0.001	0.004	0.004	0.073	0.043	0.002	0.005	0.004	0.008	0.002	0.005	<0.001	0.001
Boron (DIS)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (DIS)	mg/L	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	0.00011	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Calcium (DIS)	mg/L	<1	<1	64	53	67	68	29	50	17	44	48	43	24	22	24	18
Chromium (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.001
Iron (DIS)	mg/L	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead (DIS)	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Lithium (DIS)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (DIS)	mg/L	<1	<1	13	14	14	14	3	14	8	13	9	11	6	6	7	6
Manganese (DIS)	mg/L	<0.001	<0.001	0.014	<0.001	<0.001	<0.001	0.028	<0.001	0.009	0.002	0.003	0.003	<0.001	<0.001	<0.001	0.006
Mercury (DIS)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum (DIS)	mg/L	<0.0001	<0.0001	0.0116	0.0004	0.0006	0.0006	0.0146	0.0027	0.0015	0.0059	0.0021	0.0058	0.0001	0.0005	0.0003	0.0004
Nickel (DIS)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Potassium (DIS)	mg/L	<1	<1	5	5	4	4	4	6	3	5	5	5	3	3	3	4
Rubidium (DIS)	mg/L	<0.0001	<0.0001	0.0007	0.0005	0.0004	0.0004	0.0014	0.0011	0.0008	0.0006	0.0009	0.0008	0.0005	0.0004	0.0003	0.0009
Selenium (DIS)	mg/L	<0.001	<0.001	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon (DIS)	mg/L	<0.1	<0.1	6.1	13.8	11.1	11.2	3.5	12.1	11.2	10.3	12.2	6.3	12	12.8	13.1	17.9
Silver (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (DIS)	mg/L	<1	<1	14	10	9	9	13	39	8	8	12	9	7	6	8	7
Strontium (DIS)	mg/L	<0.01	<0.01	0.57	0.21	0.24	0.24	0.53	0.28	0.1	0.32	0.28	0.21	0.12	0.11	0.17	0.13
Thallium (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tungsten (DIS)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.007	0.001	<0.0001	<0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (DIS)	mg/L	<0.0002	<0.0002	0.0312	0.0022	0.0036	0.0037	0.0113	0.0062	0.0009	0.0155	0.006	0.0217	0.001	0.0012	0.0009	<0.0002
Vanadium (DIS)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (DIS)	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT OCTOBER 2020 GROUNDWATER QUALITY DATA

Station Name	Reporting Units	MW-12-15	MW-12-11	MW-12-12	MW-15-04	MW-12-12	MW-15-06	MW-15-10	MW-15-10	MW-15-11	MW-16-02D	RINSATE BLANK	MW-15-12	MW-15-13	DI BLANK	MW-12-16
Sample Date		10/20/20 15:30	10/20/20 14:30	10/20/20 17:25	10/20/20 16:15	10/20/20 18:00	10/20/20 17:00	10/21/20 17:45	10/21/20 18:10	10/21/20 16:25	10/21/20 18:15	10/21/20 18:20	10/22/20 09:10	10/22/20 09:50	10/22/20 11:50	10/22/20 13:00
Sample ID		MR-2010-216	MR-2010-217	MR-2010-218	MR-2010-219	MR-2010-220	MR-2010-221	MR-2010-222	MR-2010-223	MR-2010-224	MR-2010-225	MR-2010-226	MR-2010-227	MR-2010-228	MR-2010-229	MR-2010-230
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks						Duplicate			Duplicate			Blank			Blank	
Lab Sample ID		H20100681-017	H20100681-018	H20100681-019	H20100681-020	H20100681-021	H20100681-022	H20100681-023	H20100681-024	H20100681-025	H20100681-026	H20100681-027	H20100681-028	H20100681-029	H20100681-030	H20100681-031
Field Parameters																
Depth to Water	Feet	22.15	48.56	40.82	43.45		33.24	10.21		154.32	91.8		55.88	40		84.23
Dissolved Oxygen	mg/L	3.71	4.96	0.06	4.52		0.39	7.73		3.69	4.3		4.88	8.68		8.65
Field pH	s.u.	7.45	7.06	8.27	7.42		7.72	6.1		7.63	7.65		7.16	7.47		7.72
Field Specific Conductivity	umhos/cm	669	334	261	228		308	128		302	254		140	186		337
Water Temperature	Deg C	7.9	8.3	8.1	8.3		6.7	8.1		8.8	5.6		7.2	6.5		8.5
Physical Parameters																
pH	s.u.	7.6 H	7.3 H	8.2 H	7.3 H	8.3 H	8.2 H	6.5 H	6.5 H	7.7 H	7.7 H	7.1 H	6.9 H	7.4 H	6.5 H	7.5 H
Specific Conductivity	umhos/cm	682	353	284	234	284	309	136	135	313	266	7	155	204	10	354
Total Dissolved Solids	mg/L	476	229	172	169	185	191	116	114	205	174	<10	107	124	<10	234
Total Suspended Solids	mg/L	18	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	13	<10	<10	<10
Major Constituents - Commons Ions																
Alkalinity as CaCO3	mg/L	170 D	93 D	93 D	71 D	94 D	150 D	41 D	41 D	110 D	55 D	<2	61 D	87 D	2	88 D
Bicarbonate as HCO3	mg/L	200 D	110 D	110 D	87 D	110 D	180 D	50 D	49 D	130 D	66 D	<2	74 D	110 D	2	110 D
Carbonate as CO3	mg/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Chloride	mg/L	18	32	5	2	6	4	<1	<1	1	5	<1	<1	<1	<1	9
Fluoride	mg/L	<0.1	<0.1	0.2	<0.1	0.2	0.2	<0.1	<0.1	<0.1	0.2	<0.1	0.1	0.1	<0.1	0.1
Sulfate	mg/L	156	31	41	40	42	8	21	21	47	62	<1	14	16	<1	71
Nutrients																
Nitrate + Nitrite as N	mg/L	2.74 D	0.49	0.02	0.41	0.02	<0.01	0.34	0.34	0.15	<0.01	<0.01	0.08 B	0.08 B	0.03	1.44 B D
Phosphorus (TOT)	mg/L	0.07	0.25	<0.01	0.03	<0.01	0.02	0.1	0.09	<0.01	0.01	<0.01	0.02	<0.01	<0.01	0.05
Metals - Trace Constituents																
Aluminum (DIS)	mg/L	<0.005	0.023	0.005	0.01	<0.005	<0.005	<0.005	0.005	<0.005	<0.005	<0.005	0.008	<0.005	<0.005	<0.005
Antimony (DIS)	mg/L	<0.0005	<0.0005	<0.0005	0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	0.0009	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (DIS)	mg/L	0.005	0.008	0.008	<0.001	0.008	0.013	<0.001	<0.001	<0.001	0.012	<0.001	0.001	<0.001	<0.001	0.003
Boron (DIS)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (DIS)	mg/L	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003	<0.00003
Calcium (DIS)	mg/L	101	42	38	24	39	45	11	11	43	31	<1	18	27	<1	38
Chromium (DIS)	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper (DIS)	mg/L	0.002	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Iron (DIS)	mg/L	0.19	<0.02	<0.02	0.05	<0.02	0.05	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Lead (DIS)	mg/L	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Lithium (DIS)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (DIS)	mg/L	20	10	4	7	4	4	2	2	8	4	<1	4	5	<1	13
Manganese (DIS)	mg/L	0.008	<0.001	0.012	0.004	0.012	0.037	0.013	0.013	<0.001	0.083	<0.001	<0.001	<0.001	<0.001	<0.001
Mercury (DIS)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Molybdenum (DIS)	mg/L	0.0033	0.0019	0.0074	0.0008	0.0075	0.0096	0.0002	0.0002	0.0023	0.0063	<0.0001	0.0034	0.0025	<0.0001	0.0023
Nickel (DIS)	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Potassium (DIS)	mg/L	6	4	4	4	4	4	2	2	2	4	<1	3	2	<1	5
Rubidium (DIS)	mg/L	0.0015	0.0014	0.0004	0.0009	0.0003	0.0009	0.0005	0.0005	0.0009	0.0017	<0.0001	0.0006	0.0003	<0.0001	0.0008
Selenium (DIS)	mg/L	<0.001	<0.001	0.006	<0.001	0.006	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Silicon (DIS)	mg/L	7.6	11.5	4.9	15.5	4.9	5.3	19.3	19.3	8.5	6.4	<0.1	10.2	8.3	<0.1	11.6
Silver (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (DIS)	mg/L	13	10	13	10	13	12	11	10	10	11	<1	5	5	<1	9
Strontium (DIS)	mg/L	0.46	0.17	0.35	0.15	0.35	0.47	0.08	0.08	0.15	0.44	<0.01	0.12	0.17	<0.01	0.23
Thallium (DIS)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tungsten (DIS)	mg/L	<0.0001	<0.0001	0.0001	<0.0001	0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0015	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (DIS)	mg/L	0.0198	0.0158	0.0781	0.002	0.0753	0.0213	0.001	0.0011	0.0167	0.0033	<0.0002	0.0024	0.0045	<0.0002	0.0068
Vanadium (DIS)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (DIS)	mg/L	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	<0.008	0.784	<0.008	<0.008	<0.008	<0.008	<0.008

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT OCTOBER 2020 SURFACE WATER QUALITY DATA

Station Name	Reporting Units	WQ-7	WQ-18	WQ-5	WQ-6	WQ-8A	WQ-2	WQ-15 (DC-1)	WQ-10 (SBC-1)	WQ-9A (YDTI-NE)	WQ-9A (YDTI-NE)	WQ-19 (SEEP-10)	EXTRACTION POND	DI BLANK	BRCD-4
Sample Date		10/21/20 08:40	10/21/20 09:10	10/21/20 10:00	10/21/20 10:30	10/21/20 11:15	10/21/20 11:45	10/21/20 13:00	10/21/20 13:30	10/21/20 14:00	10/21/20 14:15	10/21/20 14:40	10/21/20 15:10	10/21/20 15:45	10/21/20 08:10
Sample ID		MR-2010-100	MR-2010-101	MR-2010-102	MR-2010-103	MR-2010-104	MR-2010-105	MR-2010-106	MR-2010-107	MR-2010-108	MR-2010-109	MR-2010-110	MR-2010-111	MR-2010-112	MR-2010-120
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks											Duplicate			Blank	
Lab Sample ID		H20100682-001	H20100682-002	H20100682-003	H20100682-004	H20100682-005	H20100682-006	H20100682-007	H20100682-008	H20100682-009	H20100682-010	H20100682-011	H20100682-012	H20100682-013	H20100684-001
Field Parameters															
Dissolved Oxygen	mg/L	9.63	8.3	9.53	9.63	9.02	9.66	10.38	10.37	6.89		8.99	8.91		10.4
Field pH	s.u.	2.95	11.27	8.32	7.36	4.85	5.33	8.69	7.79	8.78		3.03	3.06		7.44
Field Specific Conductivity	umhos/cm	2,578	2,833	199	2,115	2,793	527	217	217	2,820		3,331	3,071		316
Flow	Cubic Feet Sec														0.012
Flow	Gallons Per Min	116	Ponded	8	Ponded	Ponded	55	61	70			95	Ponded		
Water Temperature	Deg C	6.61	11	5.3	7.22	9.28	8.52	4	3.74	10.6		9.03	6.34		2.4
Physical Parameters															
pH	s.u.	3.2 H	11.0 H	7.2 H	6.9 H	4.3 H	7.0 H	8.0 H	8.0 H	9.4 H	9.4 H	3.2 H	3.4 H	6.0 H	7.8 H
Specific Conductivity	umhos/cm	2,460	2,520	240	1,910	2,640	517	234	232	2,530	2,520	3,120	2,870	7	313
Total Dissolved Solids	mg/L	2,380 D	2,370 D	176	1,890 D	2,740 D	384	154	149	2,620 D	2,530 D	3,180 D	2,900 D	<10	220
Total Suspended Solids	mg/L	<10	32	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Major Constituents - Commons Ions															
Alkalinity as CaCO3	mg/L	<2	92 D	34 D	37 D	<2	28 D	98 D	110 D	21 D	20 D	<2	<2	<2	88 D
Bicarbonate as HCO3	mg/L	<2	<2	41 D	44 D	<2	34 D	120 D	130 D	16 D	17 D	<2	<2	<2	110 D
Carbonate as CO3	mg/L	<2	39 D	<2	<2	<2	<2	<2	<2	5 D	4 D	<2	<2	<2	<2
Chloride	mg/L	7	13	11	9	8	9	1	<1	13	13	12	12	<1	8
Fluoride	mg/L	0.3	2.5	0.1	3.1	2.4	0.4	0.1	0.1	3	3	0.3	0.2	<0.1	0.1
Sulfate	mg/L	1,450	1,610	61	1,270	1,860	221	21	16	1,690	1,730	2,200	2,030	<1	59
Total Acidity	mg/L	470				210						410	410		
Nutrients															
Nitrate + Nitrite as N	mg/L	0.03	0.84	<0.01	0.12	0.09	0.15	<0.01	<0.01	0.64	0.65	0.08	0.15	<0.01	<0.01
Phosphorus (TOT)	mg/L	0.06	0.05	0.01	<0.01	0.03	0.04	0.01	0.01	<0.01	<0.01	0.05	0.03	<0.01	0.12
Metals - Trace Constituents															
Aluminum (DIS)	mg/L	32.9 D	0.089	<0.005	0.133	19.8 D	0.025	<0.005	<0.005	0.041	0.042	33.7 D	38.2 D	<0.005	<0.005
Antimony (TRC)	mg/L	<0.0005	<0.0005	<0.0005	0.0006	<0.0005	<0.0005	<0.0005	<0.0005	0.0006	0.0007	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (TRC)	mg/L	0.002	0.002	<0.001	<0.001	0.002	<0.001	0.005	0.002	0.004	0.004	0.007	0.002	<0.001	0.024
Boron (TRC)	mg/L	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (TRC)	mg/L	0.258	0.00326	0.00044	0.0242	0.134	0.00167	<0.00003	<0.00003	0.00016	0.00016	0.186	0.282	<0.00003	<0.00003
Calcium (TRC)	mg/L	252	625	28	445	473	60	30	29	575	586	462	404	<1	38
Chromium (TRC)	mg/L	0.004	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	0.002	<0.001	0.004	0.003	<0.001	<0.001
Copper (TRC)	mg/L	73.4 L	0.59 L	0.007	2.49 L	41 L	0.09	0.001	0.001	0.002	0.002	16.6 L	47.9 L	<0.001	0.002
Iron (TRC)	mg/L	36	0.91	0.3	0.11	0.94	<0.02	0.05	0.09	0.05	0.03	20.4	8.77	<0.02	0.16
Lead (TRC)	mg/L	0.0259	0.0042	0.0011	<0.0003	0.0017	<0.0003	<0.0003	<0.0003	<0.0003	<0.0003	0.0004	0.0069	<0.0003	<0.0003
Lithium (TRC)	mg/L	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (TRC)	mg/L	92	5	6	41	72	16	6	6	8	9	61	88	<1	9
Manganese (TRC)	mg/L	20.1 L	0.401 L	0.111	8.07 L	13.4 L	0.014	0.013	0.018	0.07	0.069	24.2 L	20.9 L	<0.001	0.062
Mercury	ug/L	<0.01	0.03	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum (TRC)	mg/L	0.0052	1.15 L	0.0011	1	0.045	0.223	0.0015	0.0017	1.16 L	1.2 L	0.0122	0.0002	<0.0001	0.0028
Nickel (TRC)	mg/L	0.126	<0.002	<0.002	0.038	0.109	0.002	<0.002	<0.002	<0.002	<0.002	0.087	0.115	<0.002	<0.002
Potassium (TRC)	mg/L	6	37	3	6	7	4	3	3	42	42	21	17	<1	5
Rubidium (TRC)	mg/L	0.0351	0.0346	0.0017	0.0235	0.0281	0.0039	0.0006	0.0012	0.0333	0.0336	0.0175	0.0415	<0.0001	0.0014
Selenium (TRC)	mg/L	0.003	0.003	<0.001	<0.001	0.001	<0.001	<0.001	<0.001	0.003	0.003	<0.001	0.001	<0.001	<0.001
Silicon (TRC)	mg/L	28.1	5.9	14.6	8.7	12.8	15.3	11.4	8.3	4.6	4.9	16.6	19.7	<0.1	16.1
Silver (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (TRC)	mg/L	30	84	8	36	38	14	8	6	107	107	99	73	<1	10
Strontium (TRC)	mg/L	0.9	2.96	0.16	1.87	2.92	0.36	0.19	0.21	3.11	3.12	1.43	1.4	<0.01	0.21
Thallium (TRC)	mg/L	0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	0.0004	<0.0002	<0.0002
Tungsten (TRC)	mg/L	<0.0001	0.0136	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	0.0202	0.0197	0.0001	<0.0001	<0.0001	<0.0001
Uranium (TRC)	mg/L	0.0783	0.0011	<0.0002	0.023	0.15	0.0004	0.0064	0.0037	0.0019	0.0018	0.0712	0.0602	<0.0002	0.0022
Vanadium (TRC)	mg/L	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (TRC)	mg/L	31.5	0.586	0.181	3.75	18.2	0.402	<0.008	<0.008	<0.008	<0.008	38.4	38.8	<0.008	<0.008

MONTANA RESOURCES YANKEE DOODLE TAILINGS IMPOUNDMENT OCTOBER 2020 SURFACE WATER QUALITY DATA

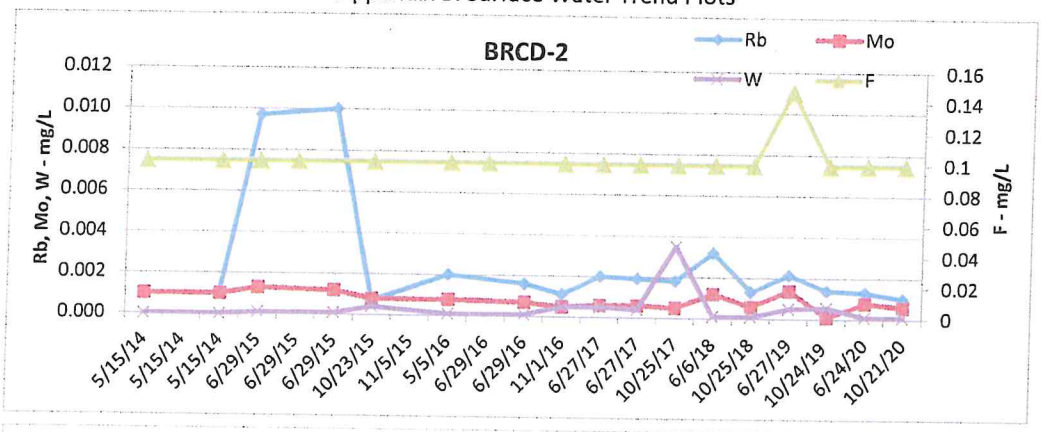
Station Name	Reporting Units	BRCD-5	OFGD-1	OFGD-4	OFGD-3	BRCD-6	BRCD-2	WQ-11 (YDC-1)	WQ-11 (YDC-1)	WQ-1	DI BLANK
Sample Date		10/21/20 08:25	10/21/20 08:55	10/21/20 09:10	10/21/20 09:40	10/21/2020 10:05	10/21/20 10:20	10/21/20 11:30	10/21/20 12:00	10/21/20 13:40	10/21/20 14:50
Sample ID		MR-2010-121	MR-2010-122	MR-2010-123	MR-2010-124	MR-2010-125	MR-2010-126	MR-2010-127	MR-2010-128	MR-2010-129	MR-2010-130
Lab Name		Energy Labs	Energy Labs	Energy Labs	Energy Labs	Hydro	Energy Labs	Energy Labs	Energy Labs	Energy Labs	Energy Labs
Remarks						No Sample			Duplicate		Blank
Lab Sample ID		H20100684-002	H20100684-003	H20100684-004	H20100684-005		H20100684-006	H20100684-007	H20100684-008	H20100684-009	H20100684-010
Field Parameters											
Dissolved Oxygen	mg/L	10.01	5.99	5.46	9.28		10.03	10.43		9.65	
Field pH	s.u.	7.55	7.3	7.2	7.43		7.63	7.77		7.51	
Field Specific Conductivity	umhos/cm	165	533	1,081	598		229	186		511	
Flow	Cubic Feet Sec	0.01	0.00013		0.08			0.071		0.144	
Flow	Gallons Per Min			<0.5		Dry	15				
Water Temperature	Deg C	4.5	4.7	5.9	4		2.3	2.6		5.3	
Physical Parameters											
pH	s.u.	7.7 H	7.2 H	7.0 H	7.9 H		7.7 H	7.8 H	7.8 H	7.5 H	5.9 H
Specific Conductivity	umhos/cm	168	538	1,060	583		231	190	191	501	6
Total Dissolved Solids	mg/L	138	394 H	828 H	411 H		174 H	140 H	136	380	<10
Total Suspended Solids	mg/L	16	<10	12	<10		<10	<10	<10	<10	<10
Major Constituents - Commons Ions											
Alkalinity as CaCO3	mg/L	52 D	130 D	160 D	190 D		67 D	69 D	70 D	60 D	<2
Bicarbonate as HCO3	mg/L	63 D	160 D	200 D	230 D		81 D	83 D	85 D	72 D	<2
Carbonate as CO3	mg/L	<2	<2	<2	<2		<2	<2	<2	<2	<2
Chloride	mg/L	5	8	61	22		8	6	6	10	<1
Fluoride	mg/L	0.2	0.2	0.3	0.5		<0.1	<0.1	<0.1	0.2	<0.1
Sulfate	mg/L	18	147	344	104		34	18	18	182	<1
Total Acidity	mg/L										
Nutrients											
Nitrate + Nitrite as N	mg/L	1.16 D	<0.01	0.41	<0.01		0.39	<0.01	<0.01	0.03	<0.01
Phosphorus (TOT)	mg/L	0.14	0.12	0.06	0.11		0.3	0.04	0.04	0.01	<0.01
Metals - Trace Constituents											
Aluminum (DIS)	mg/L	0.016	<0.005	0.013	<0.005		0.01	<0.005	<0.005	0.051	<0.005
Antimony (TRC)	mg/L	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (TRC)	mg/L	0.005	0.003	0.011	0.011		0.016	0.004	0.004	<0.001	<0.001
Boron (TRC)	mg/L	<0.05	<0.05	<0.05	<0.05		<0.05	<0.05	<0.05	<0.05	<0.05
Cadmium (TRC)	mg/L	0.00006	<0.00003	0.00006	<0.00003		<0.00003	<0.00003	<0.00003	0.0015	<0.00003
Calcium (TRC)	mg/L	16	78	167	81		25	24	24	68	<1
Chromium (TRC)	mg/L	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Copper (TRC)	mg/L	0.008	0.004	0.002	0.003		0.003	0.002	0.002	0.052	<0.001
Iron (TRC)	mg/L	0.21	0.32	1.01	0.05		0.12	0.13	0.13	0.09	<0.02
Lead (TRC)	mg/L	0.0008	<0.0003	0.0008	<0.0003		<0.0003	<0.0003	<0.0003	<0.0003	<0.0003
Lithium (TRC)	mg/L	<0.1	<0.1	<0.1	<0.1		<0.1	<0.1	<0.1	<0.1	<0.1
Magnesium (TRC)	mg/L	4	17	30	17		7	5	4	16	<1
Manganese (TRC)	mg/L	0.011	0.362	4.76 L	0.088		0.025	0.007	0.007	0.051	<0.001
Mercury	ug/L	<0.01	<0.01	0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01
Molybdenum (TRC)	mg/L	0.0011	0.0008	0.0164	0.0045		0.0006	0.001	0.001	0.0008	<0.0001
Nickel (TRC)	mg/L	<0.002	<0.002	0.002	<0.002		<0.002	<0.002	<0.002	<0.002	<0.002
Potassium (TRC)	mg/L	4	6	8	6		5	2	2	3	<1
Rubidium (TRC)	mg/L	0.0022	0.0006	0.0017	0.001		0.001	0.0004	0.0004	0.0014	<0.0001
Selenium (TRC)	mg/L	<0.001	<0.001	<0.001	<0.001		<0.001	<0.001	<0.001	<0.001	<0.001
Silicon (TRC)	mg/L	25.6	9.9	13.6	15.8		16.5	12.1	11.8	14.7	<0.1
Silver (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Sodium (TRC)	mg/L	8	15	24	21		8	8	7	12	<1
Strontium (TRC)	mg/L	0.14	0.45	1.46	0.74		0.16	0.13	0.13	0.45	<0.01
Thallium (TRC)	mg/L	<0.0002	<0.0002	<0.0002	<0.0002		<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
Tungsten (TRC)	mg/L	<0.0001	<0.0001	<0.0001	<0.0001		<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (TRC)	mg/L	0.0005	0.0016	0.0059	0.0027		0.0011	0.0019	0.0018	0.0016	<0.0002
Vanadium (TRC)	mg/L	<0.01	<0.01	<0.01	<0.01		<0.01	<0.01	<0.01	<0.01	<0.01
Zinc (TRC)	mg/L	<0.008	<0.008	0.015	<0.008		<0.008	<0.008	<0.008	0.362	<0.008

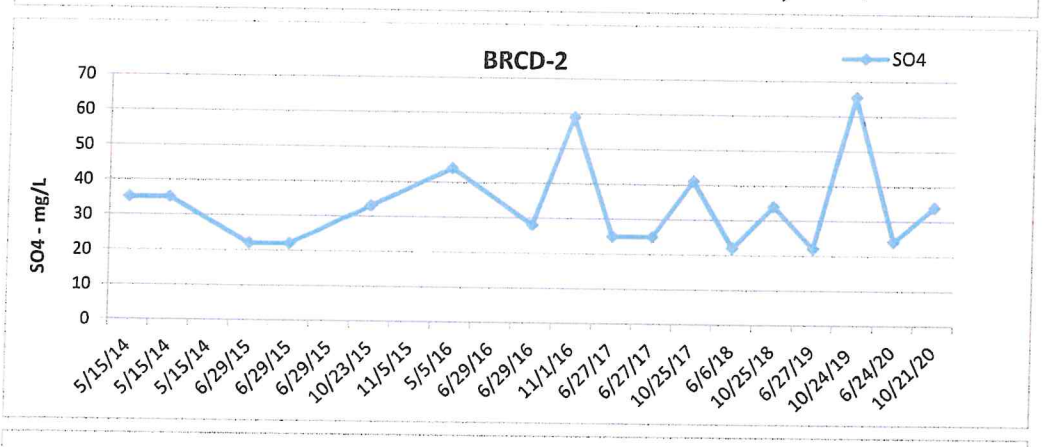
APPENDIX B

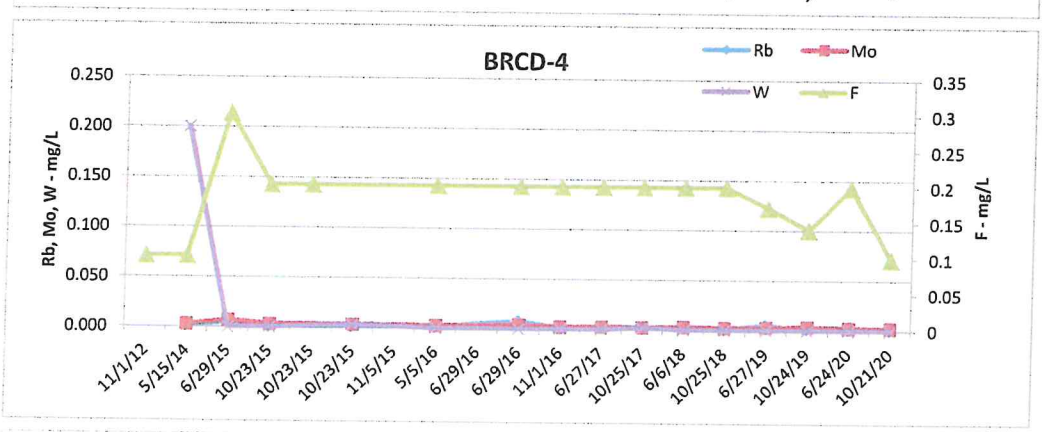
GROUNDWATER AND SURFACE WATER CONCENTRATION TREND PLOTS FOR SELECT PARAMETERS

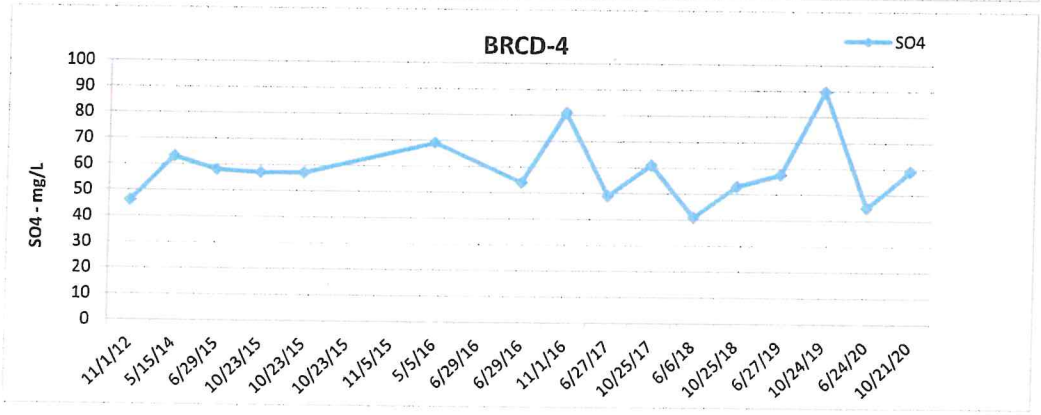
B-1 SURFACE WATER TREND PLOTS

Appendix B. Surface Water Trend Plots

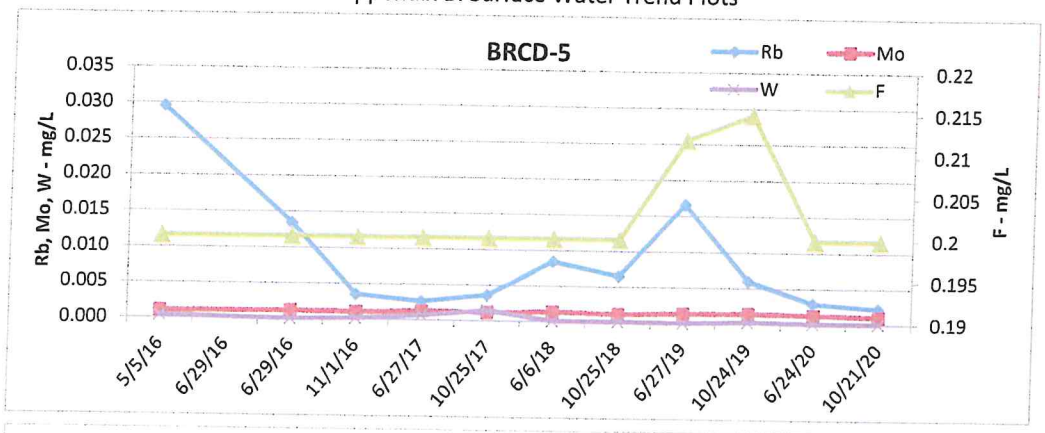


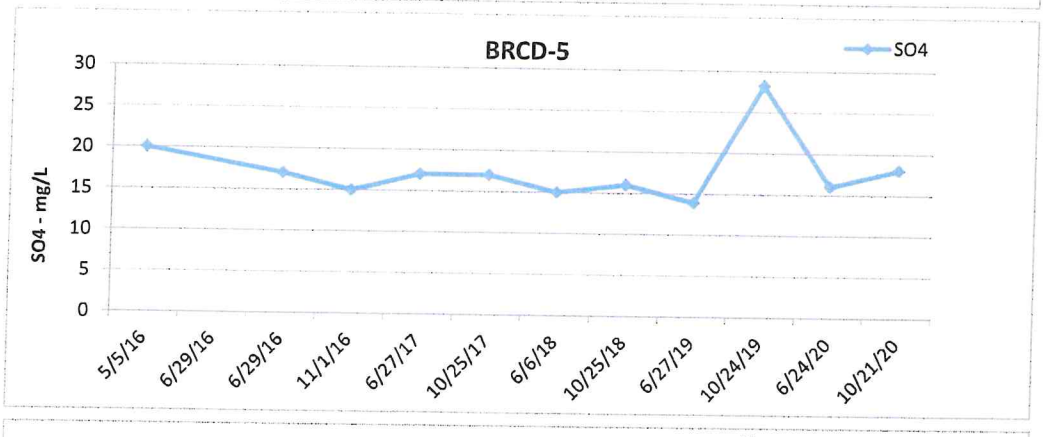


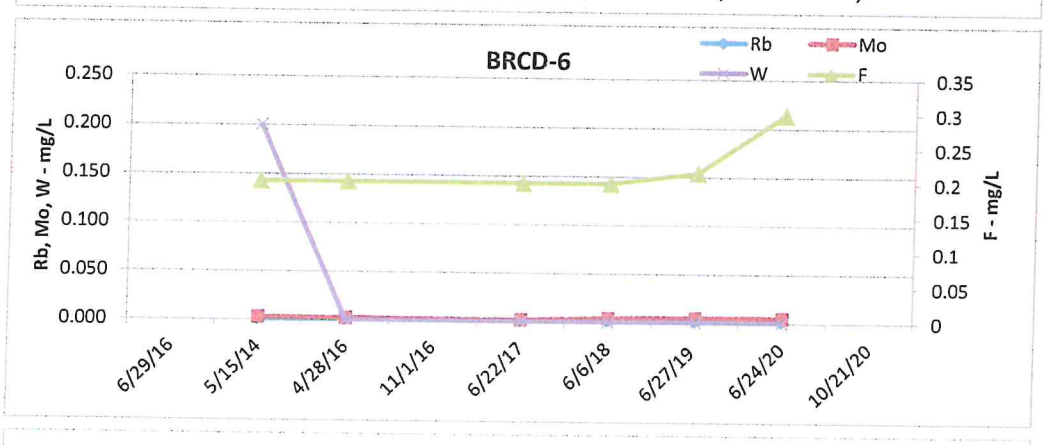


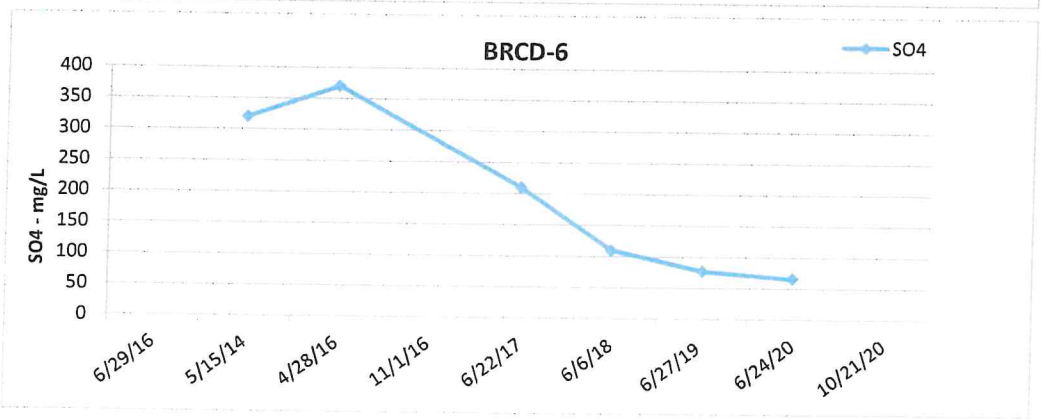


Appendix B. Surface Water Trend Plots

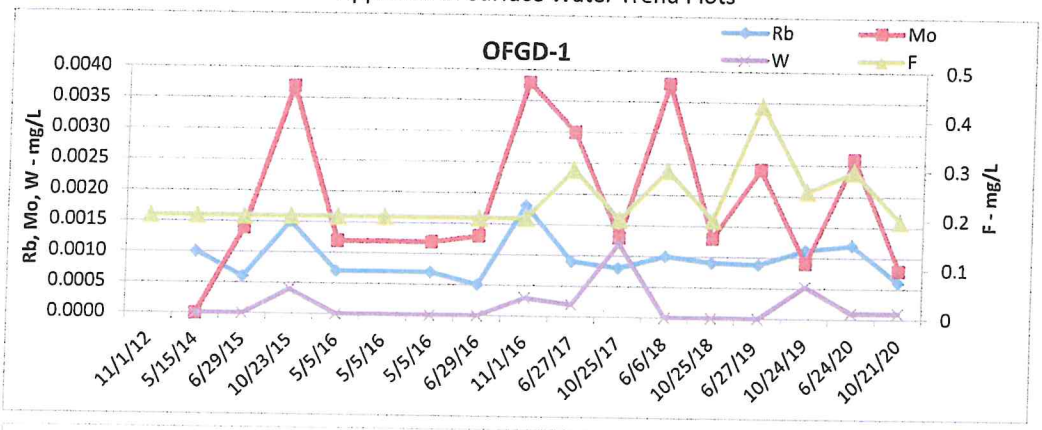


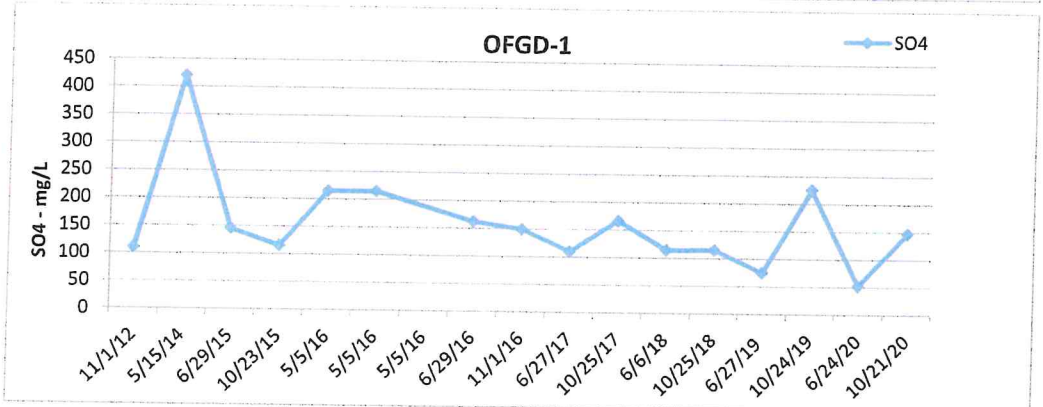


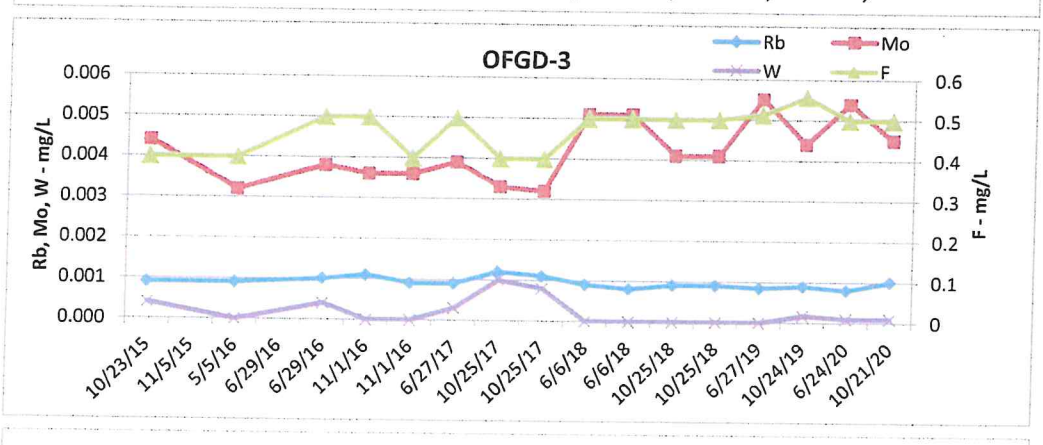


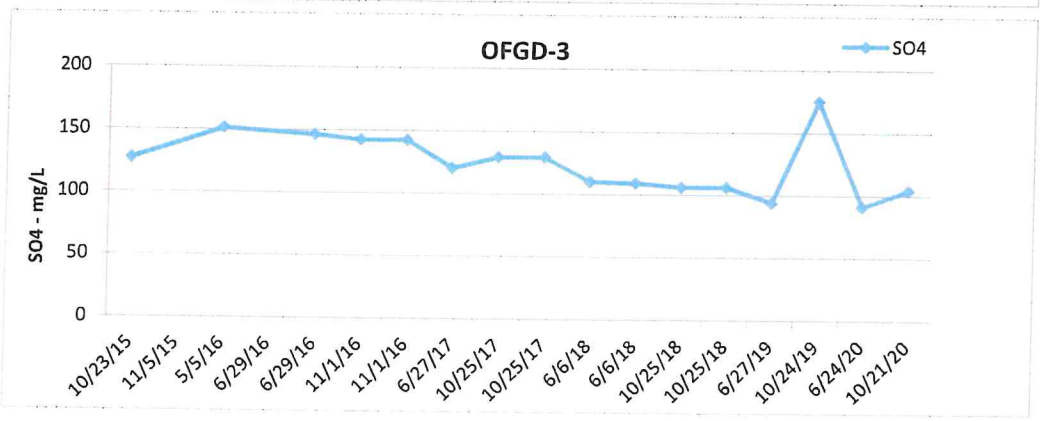


Appendix B. Surface Water Trend Plots

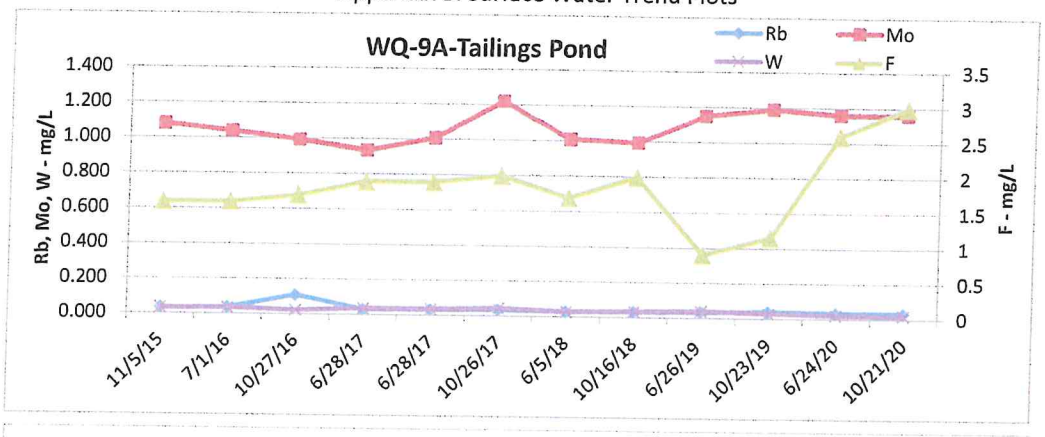


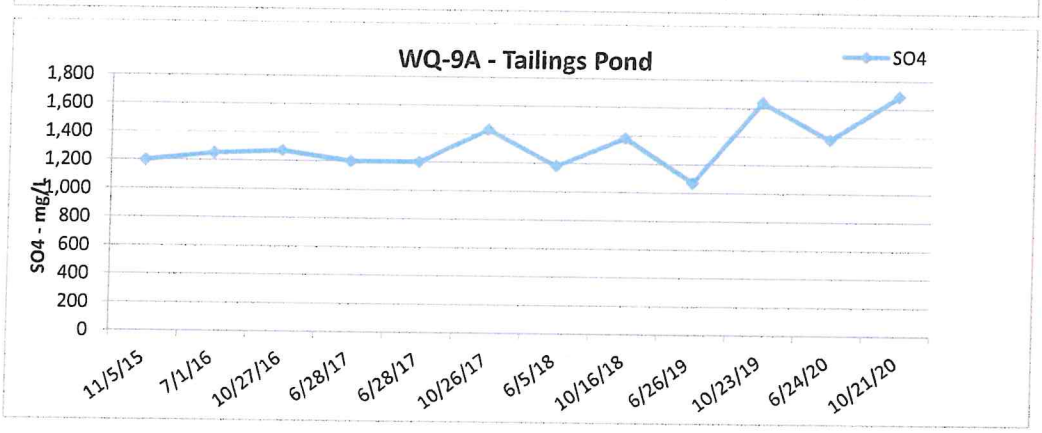






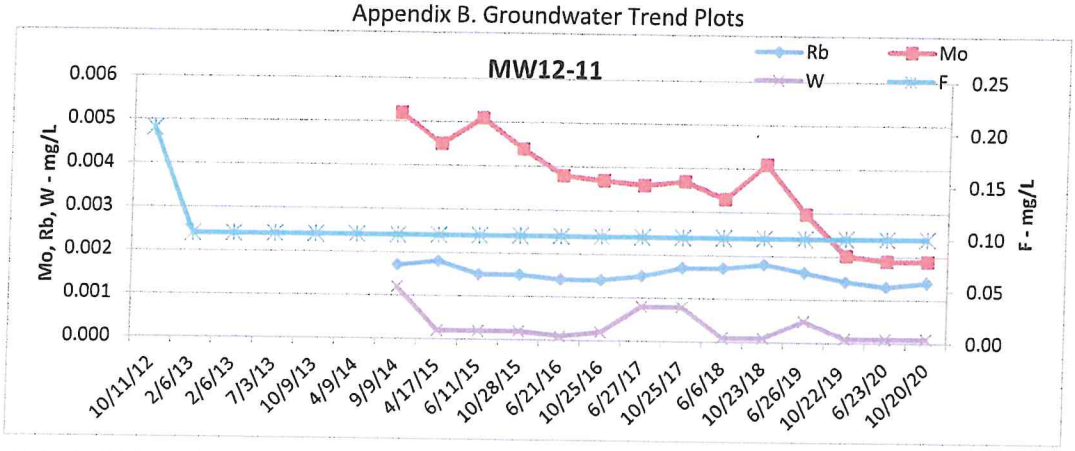
Appendix B. Surface Water Trend Plots

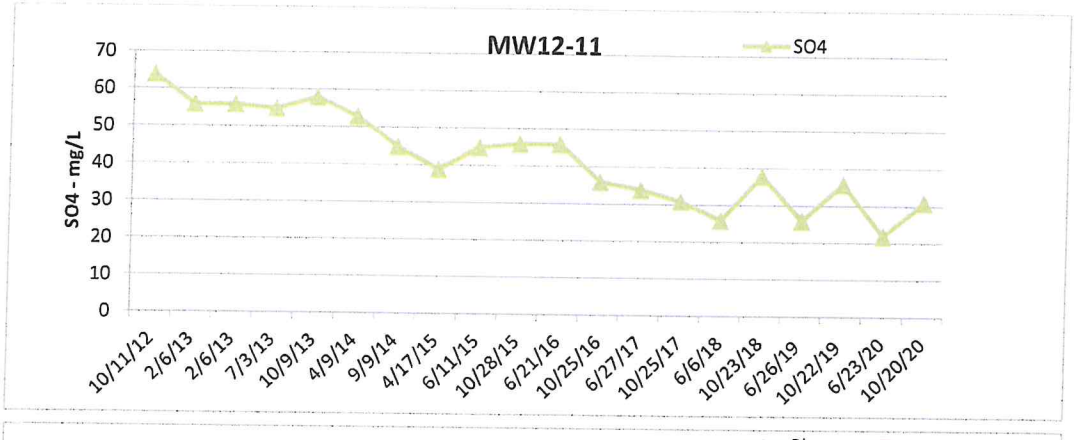


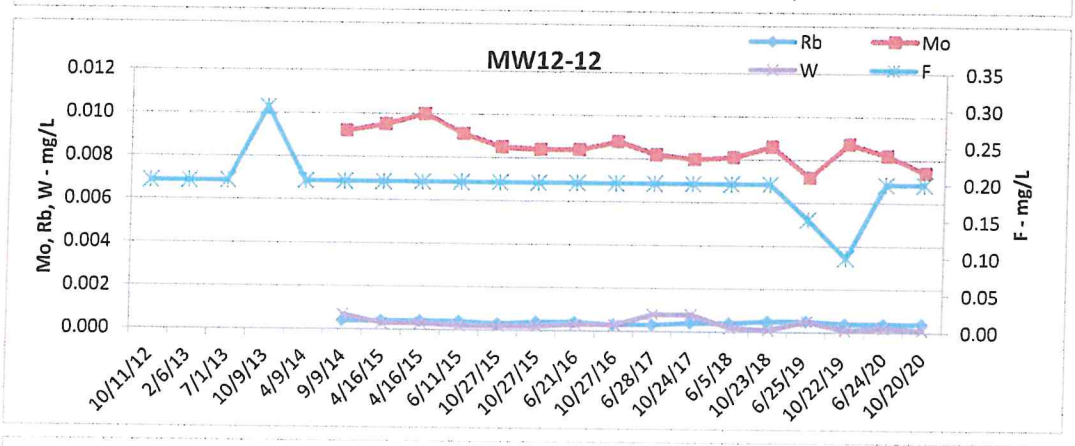


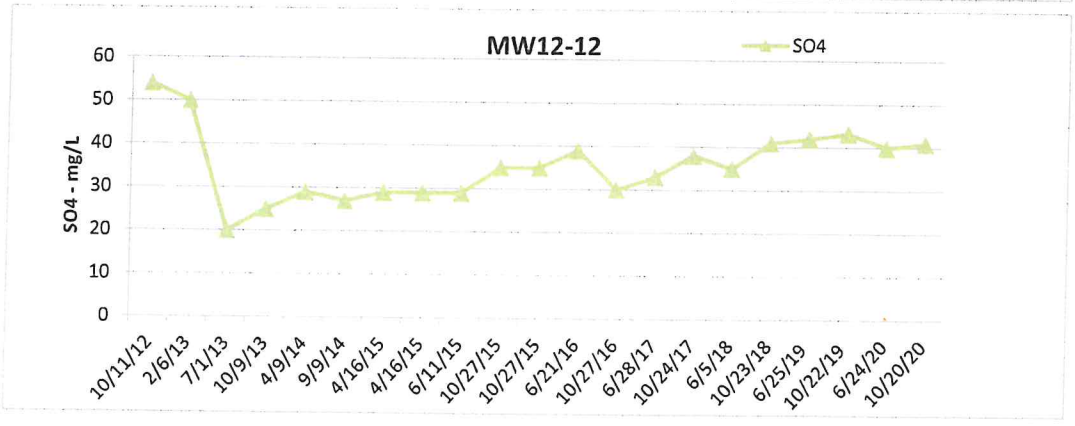
B-2 GROUNDWATER TREND PLOTS

Appendix B. Groundwater Trend Plots

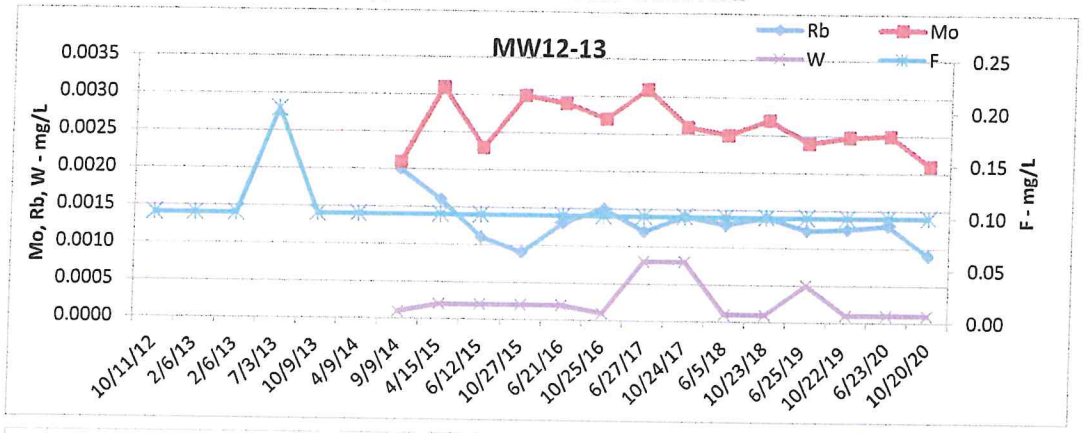


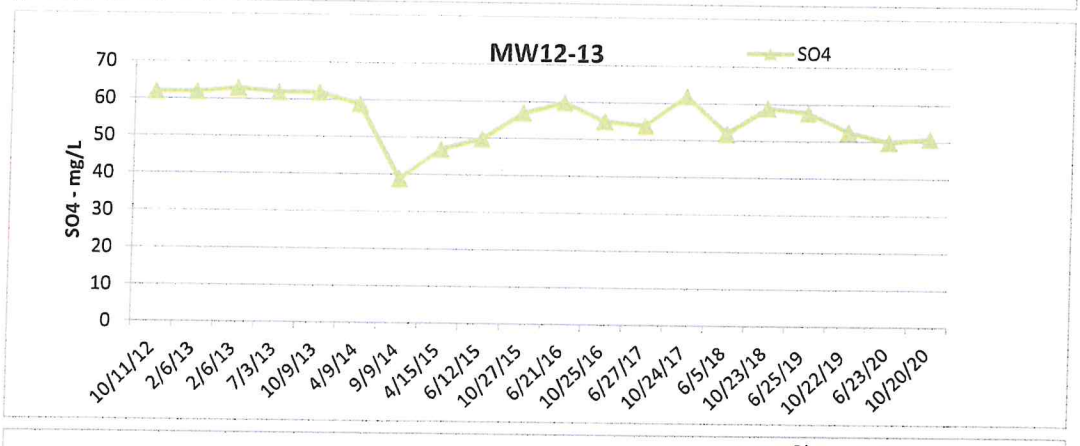


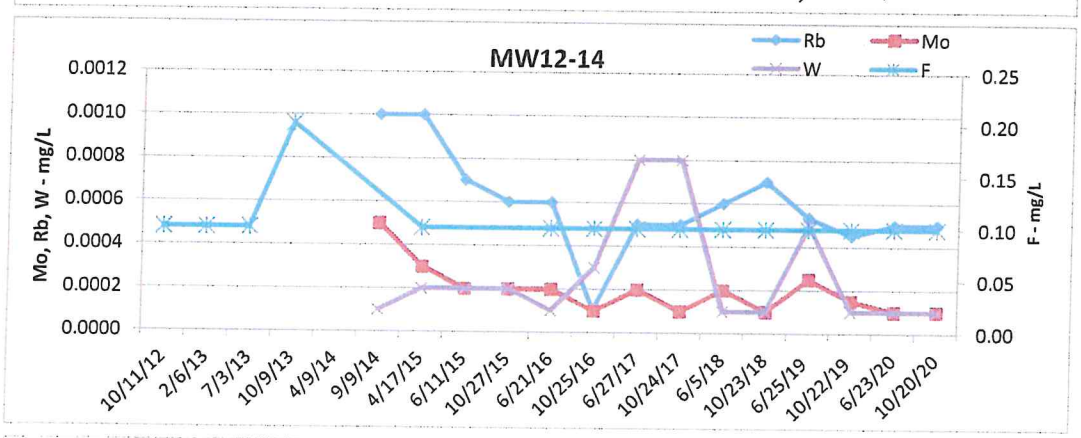


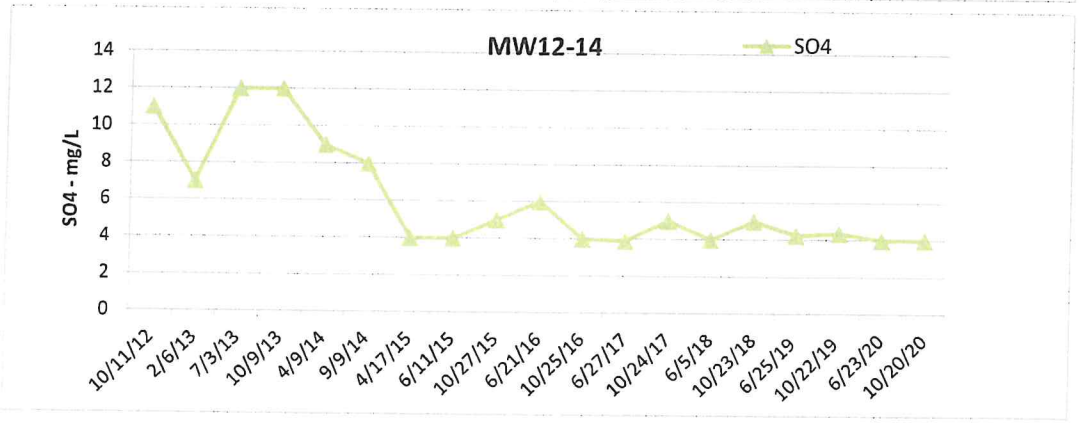


Appendix B. Groundwater Trend Plots

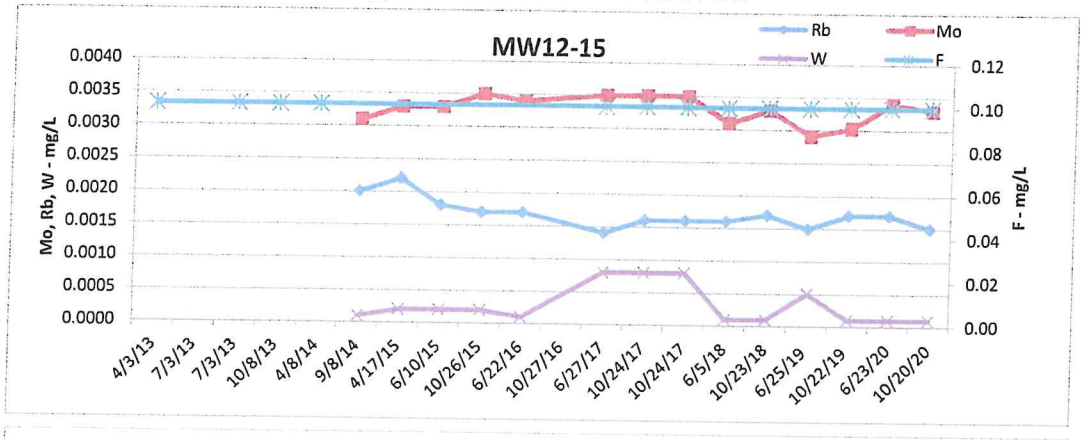


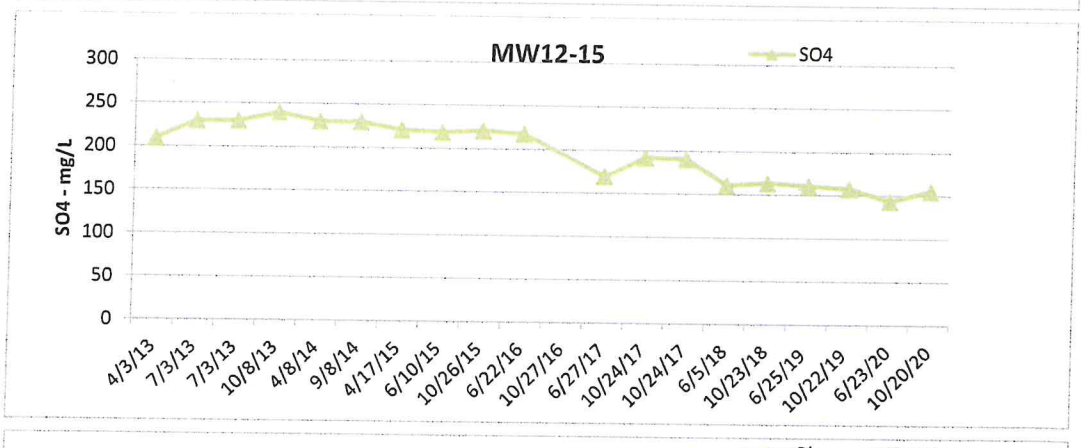


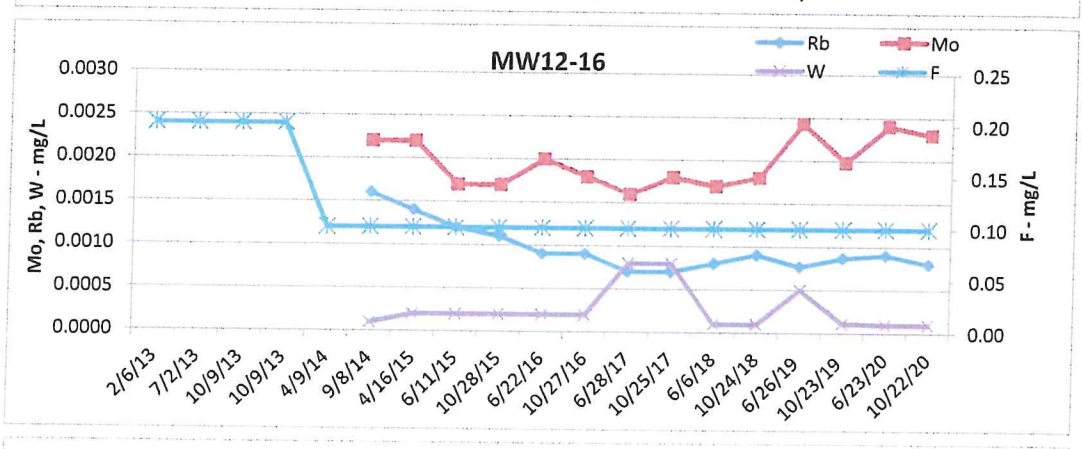


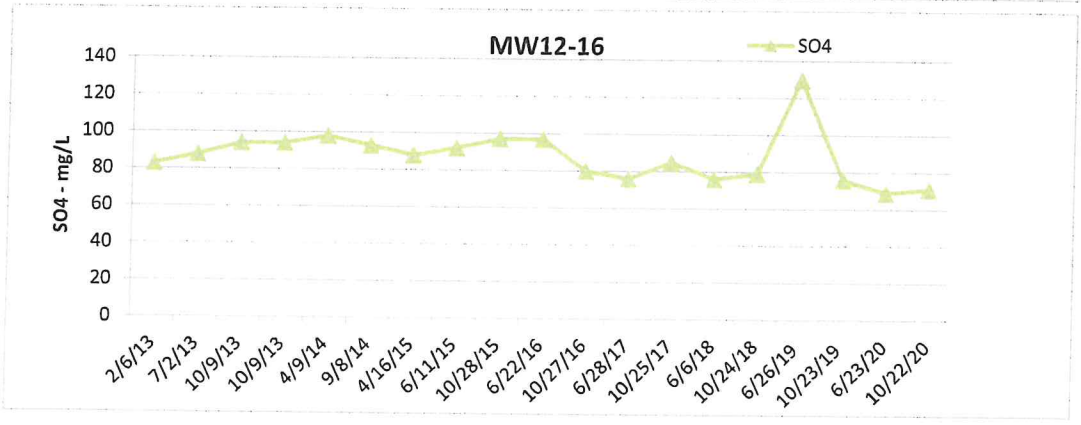


Appendix B. Groundwater Trend Plots

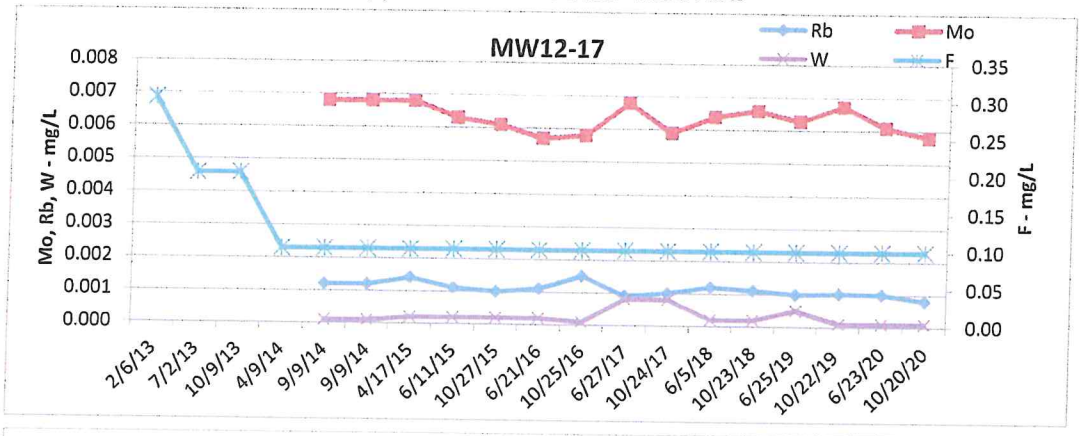


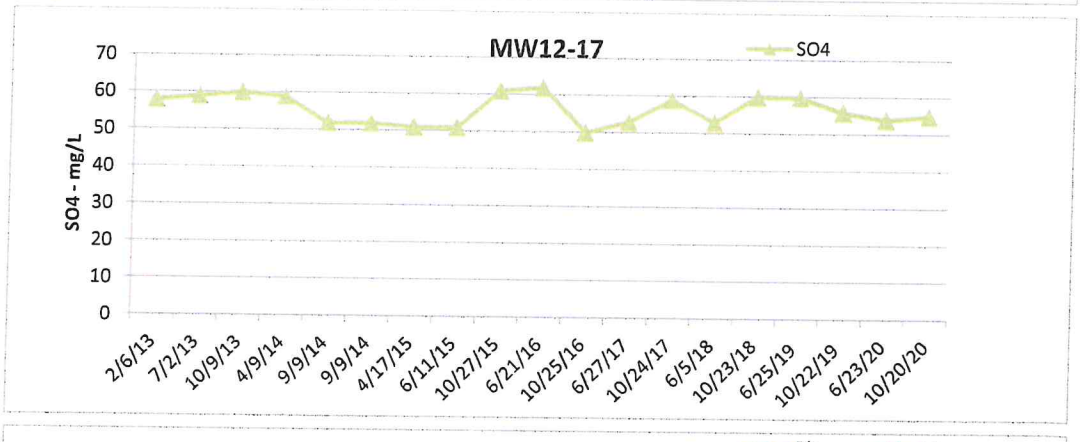


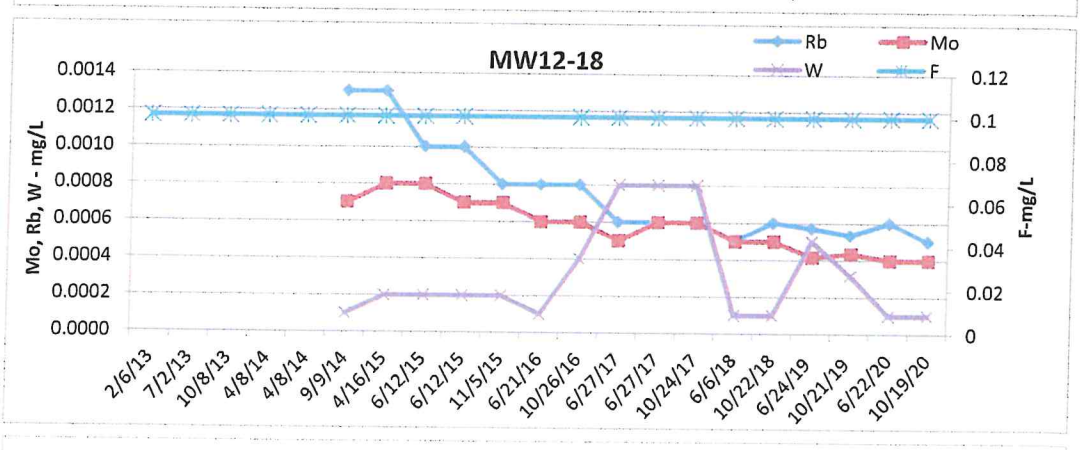


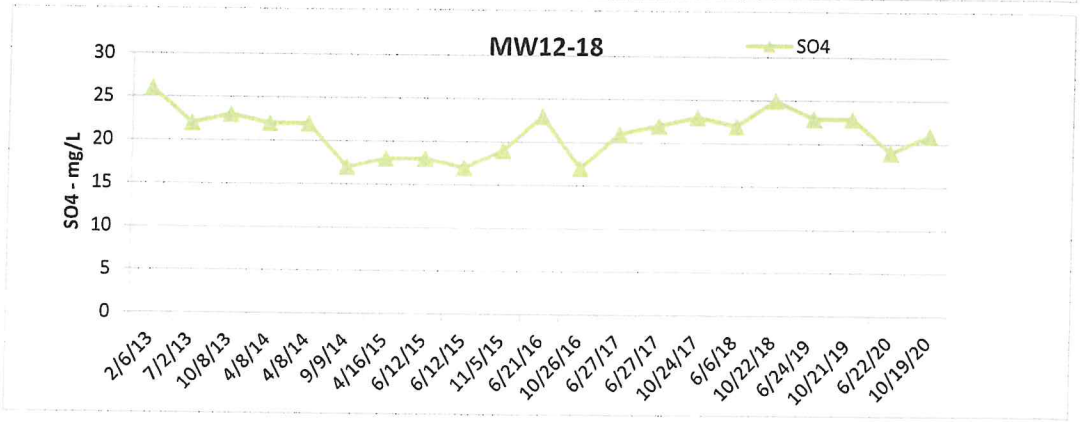


Appendix B. Groundwater Trend Plots

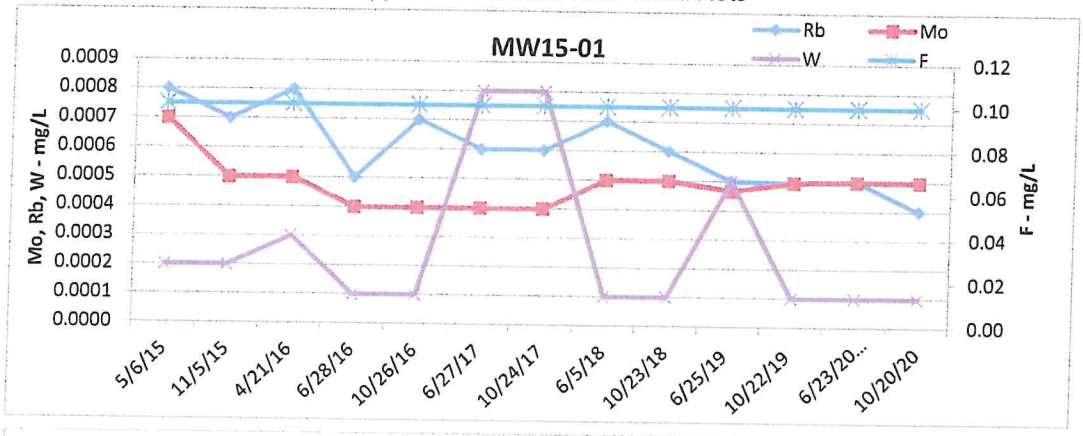


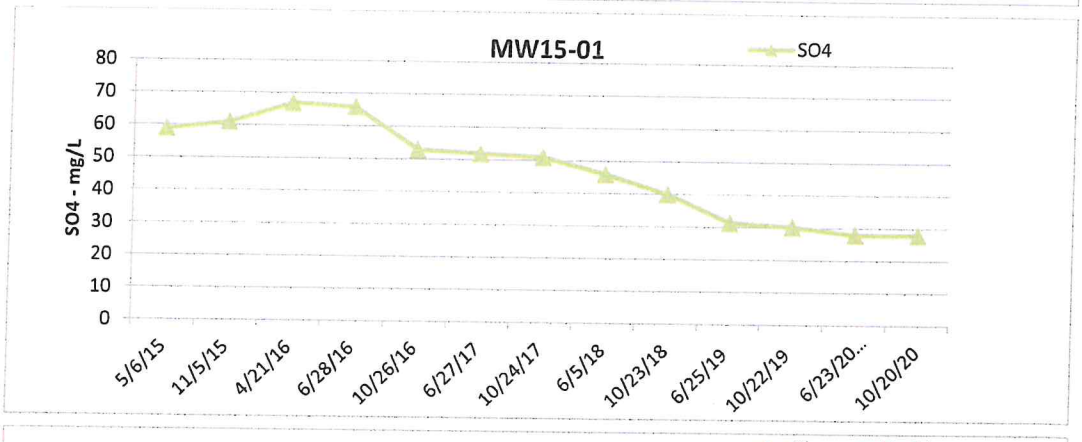


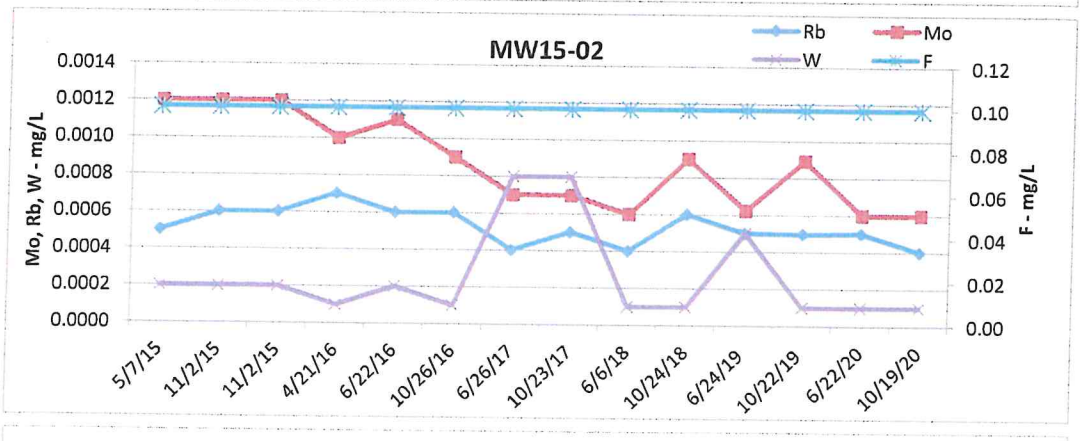


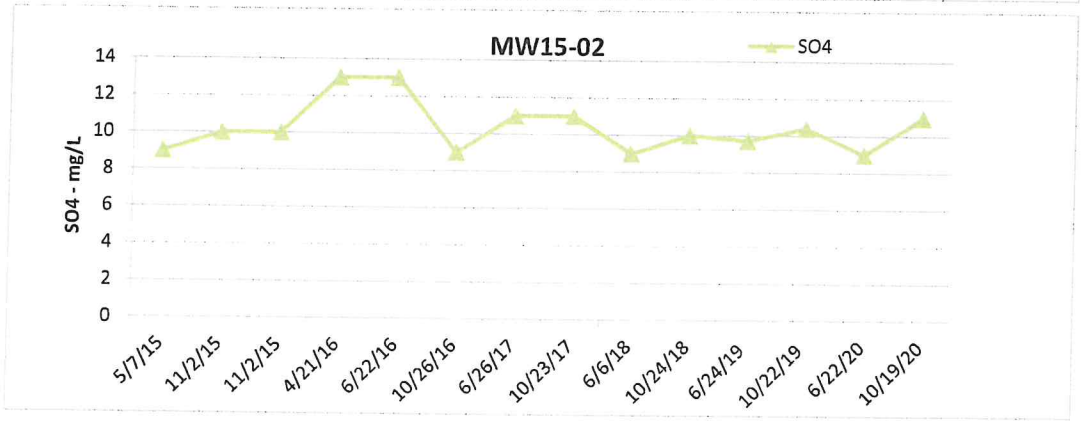


Appendix B. Groundwater Trend Plots

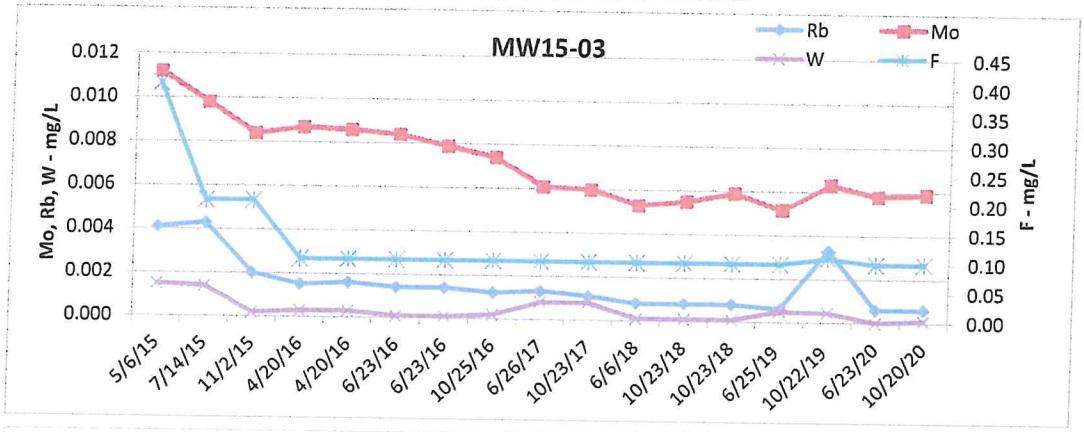


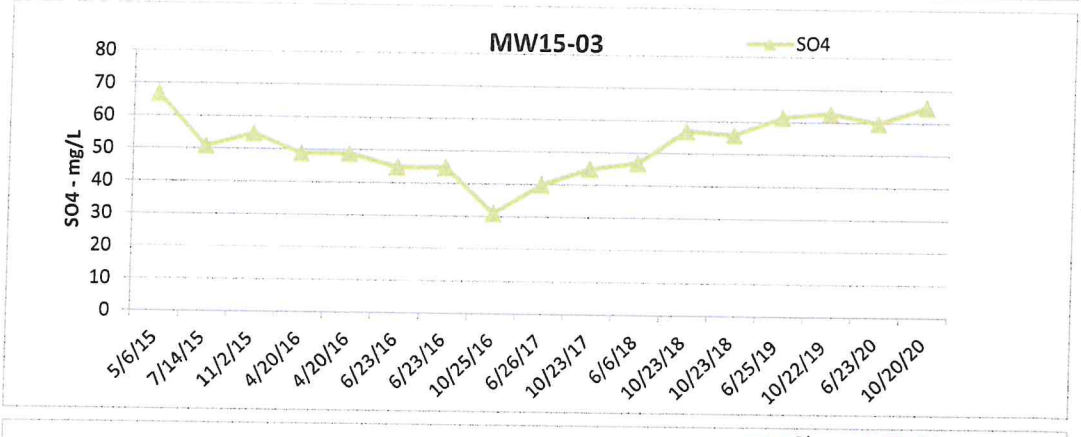


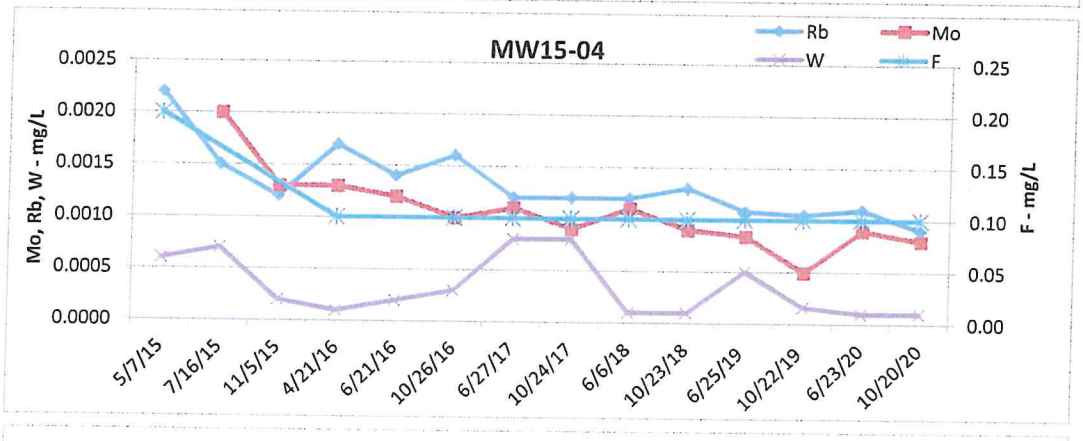


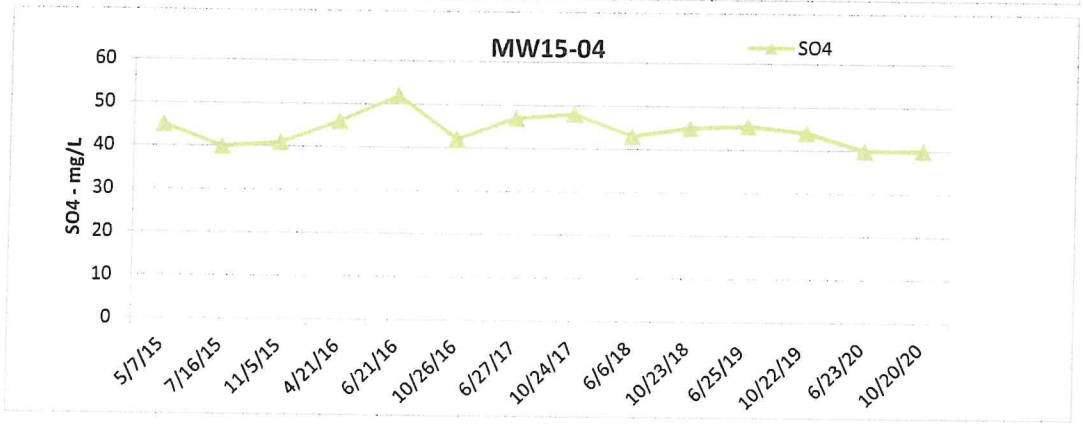


Appendix B. Groundwater Trend Plots

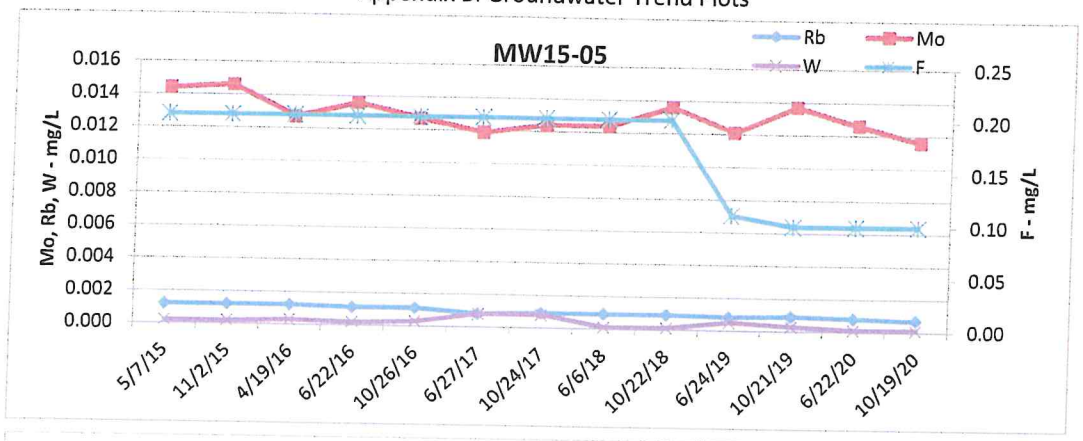


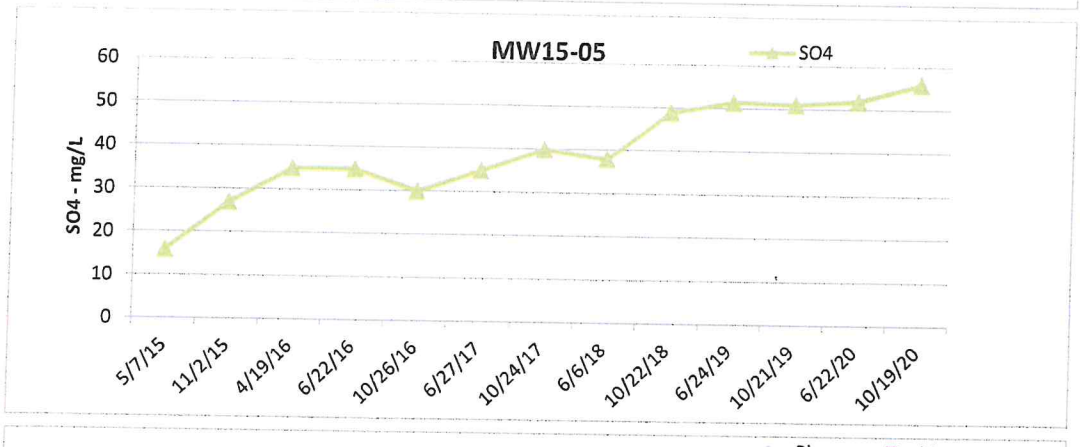


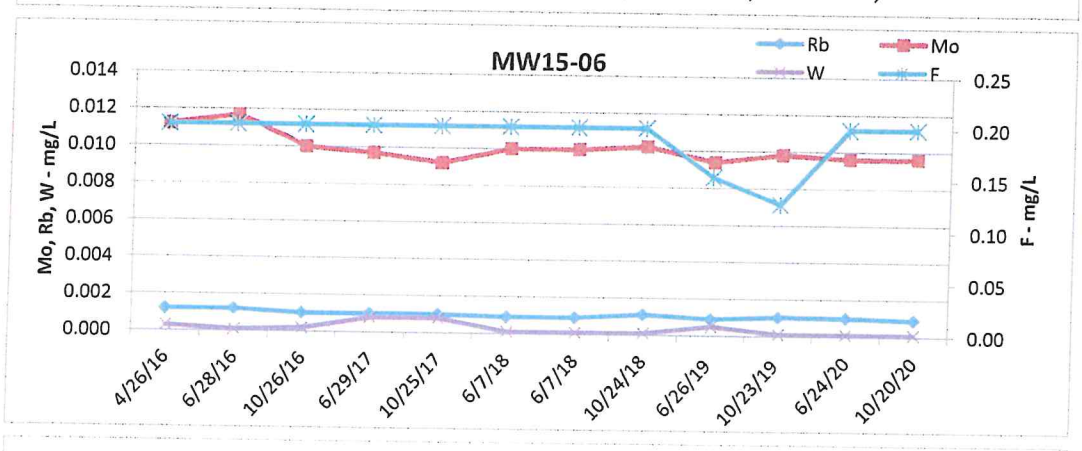


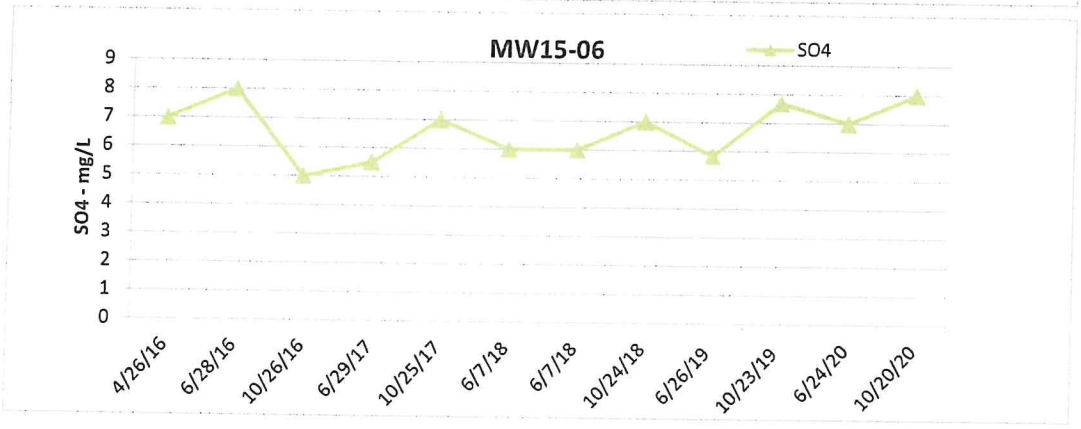


Appendix B. Groundwater Trend Plots

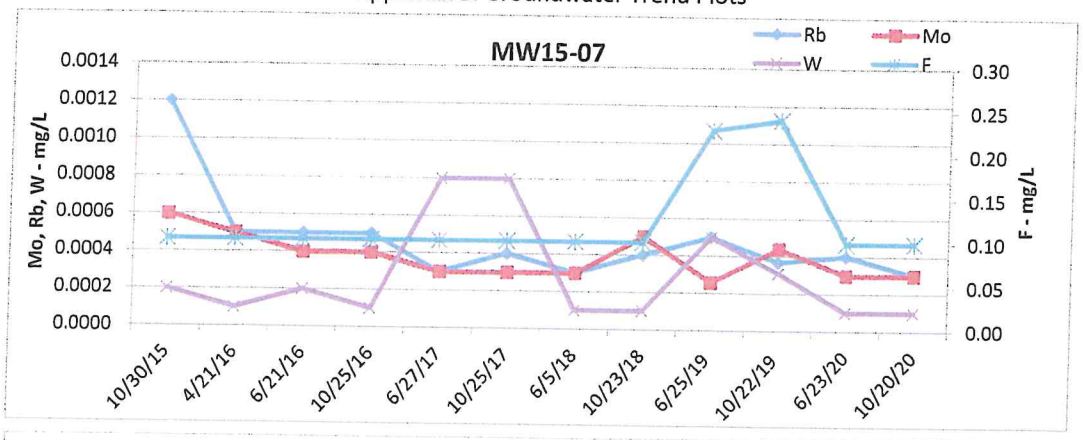


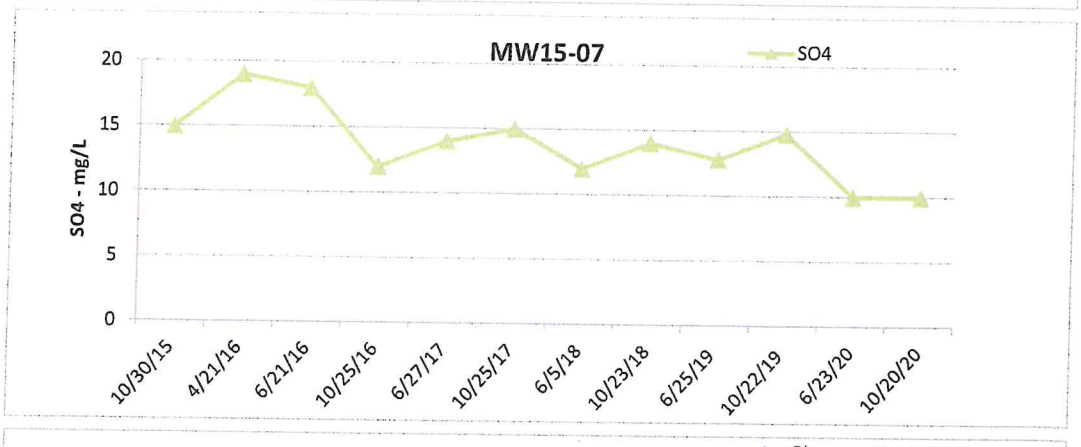


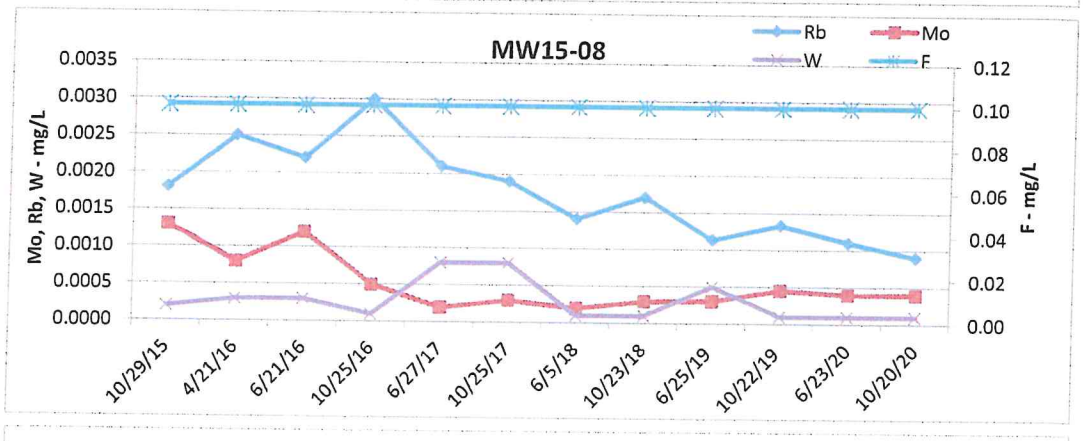


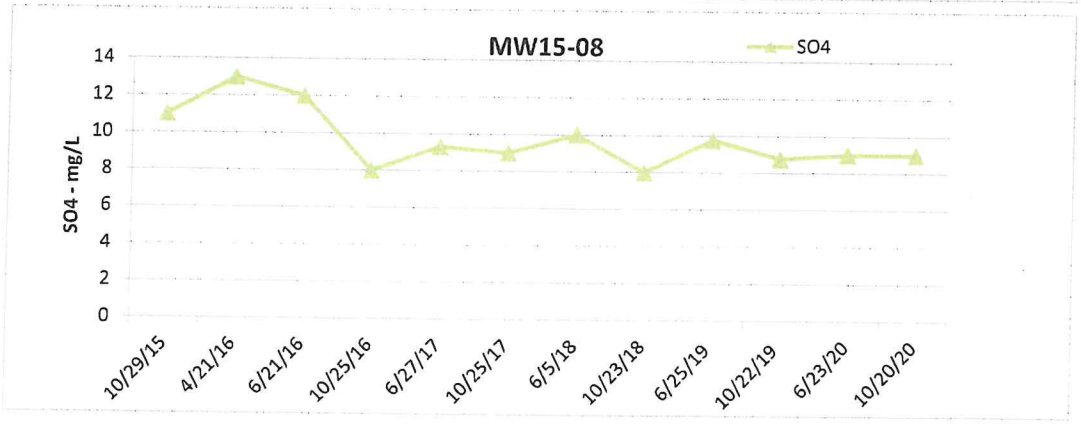


Appendix B. Groundwater Trend Plots

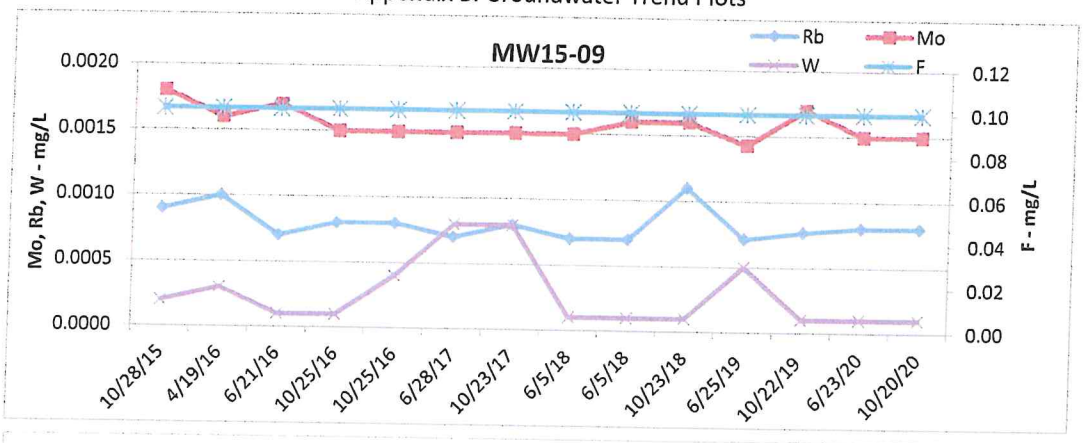


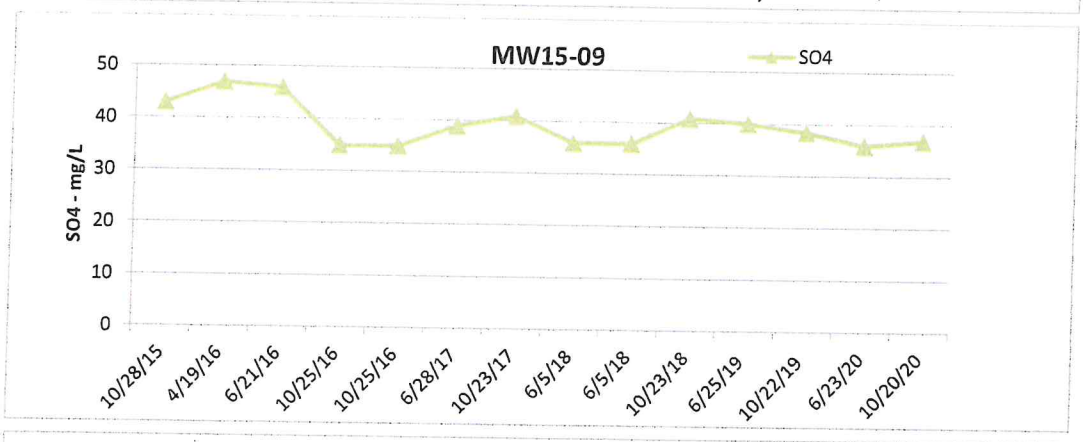


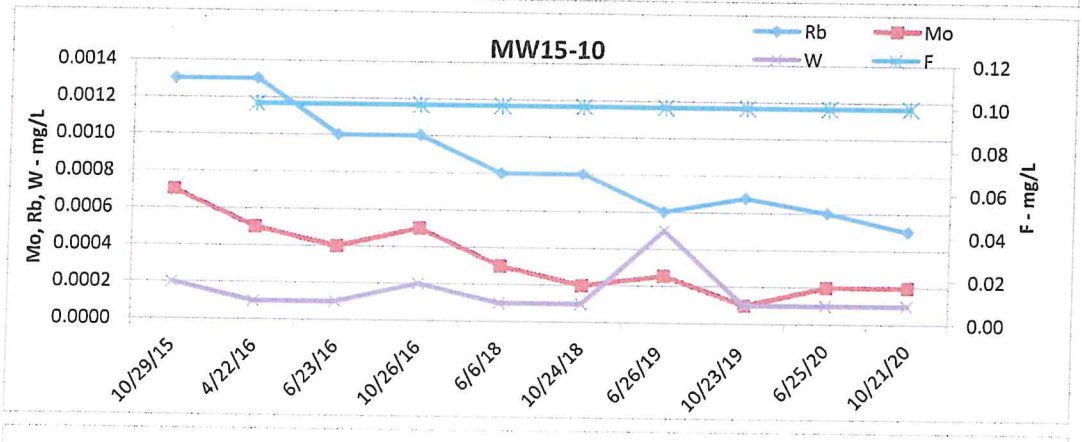


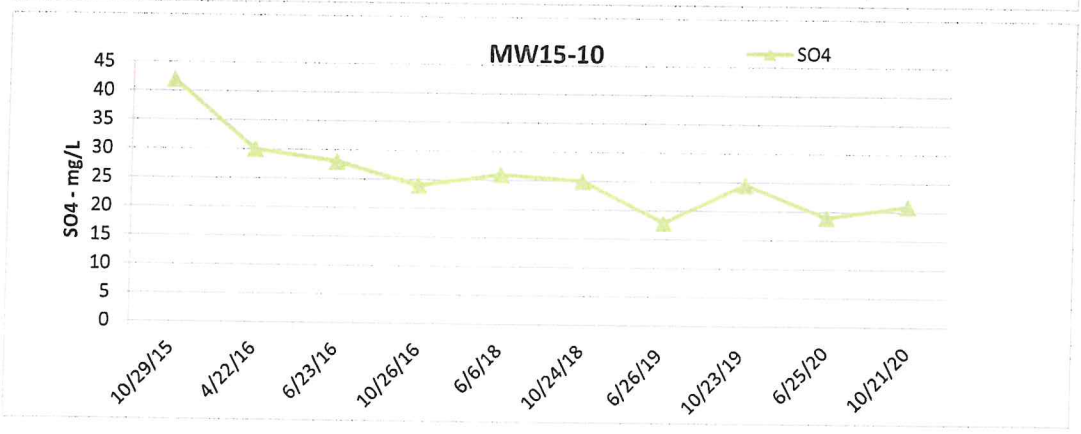


Appendix B. Groundwater Trend Plots

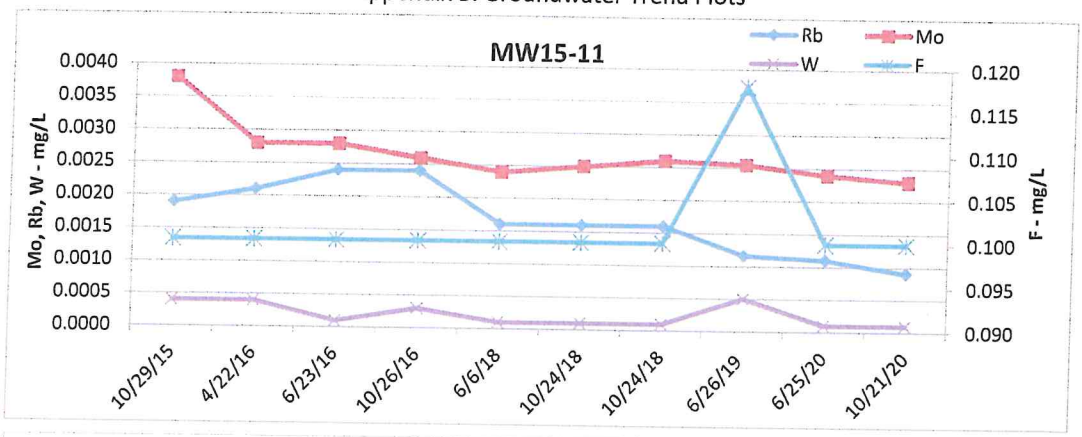


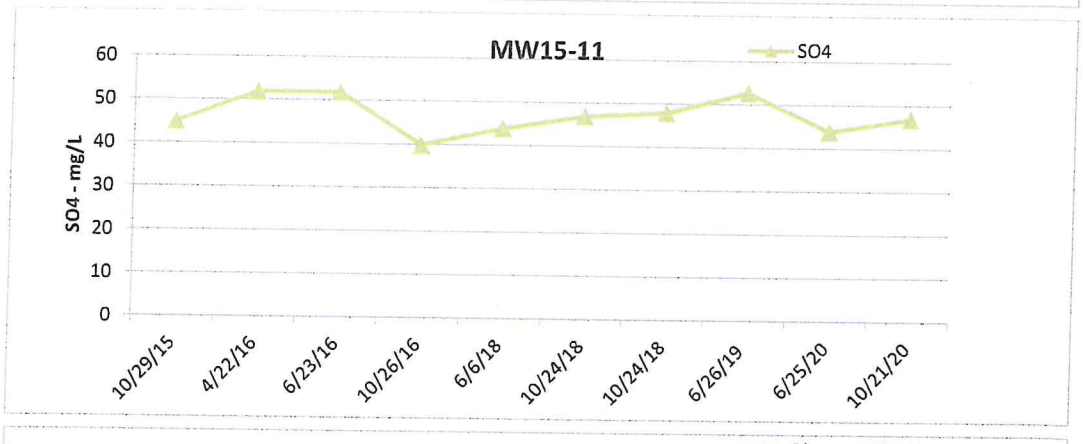


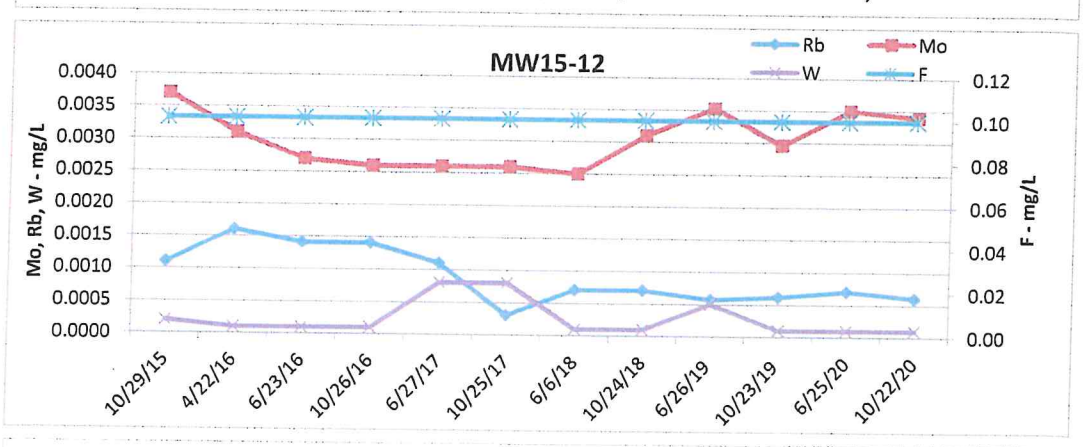


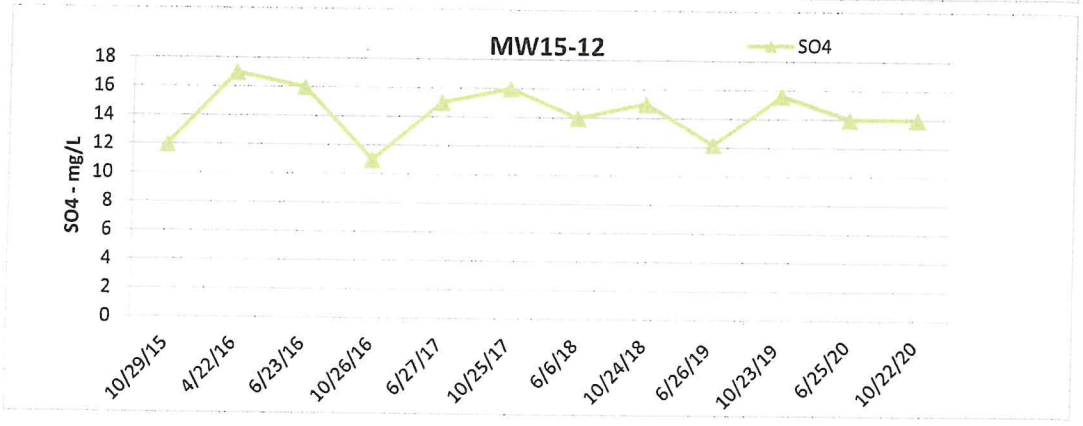


Appendix B. Groundwater Trend Plots

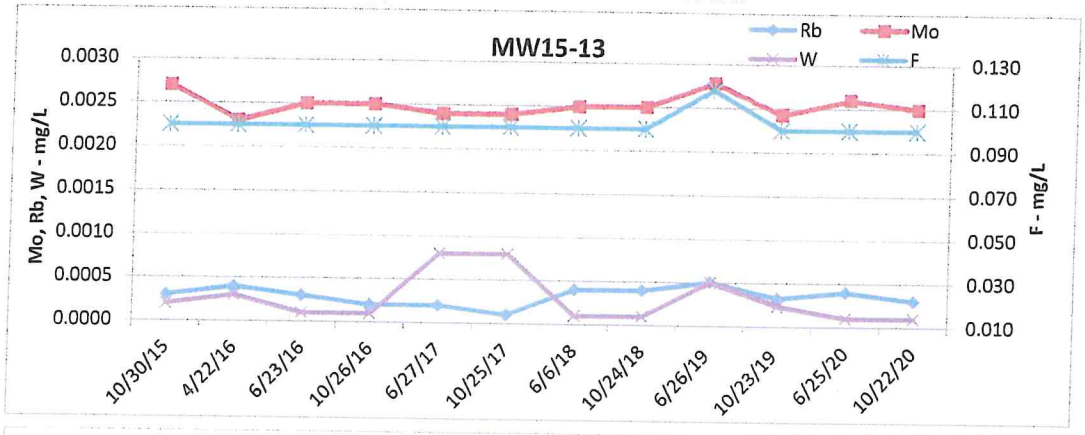


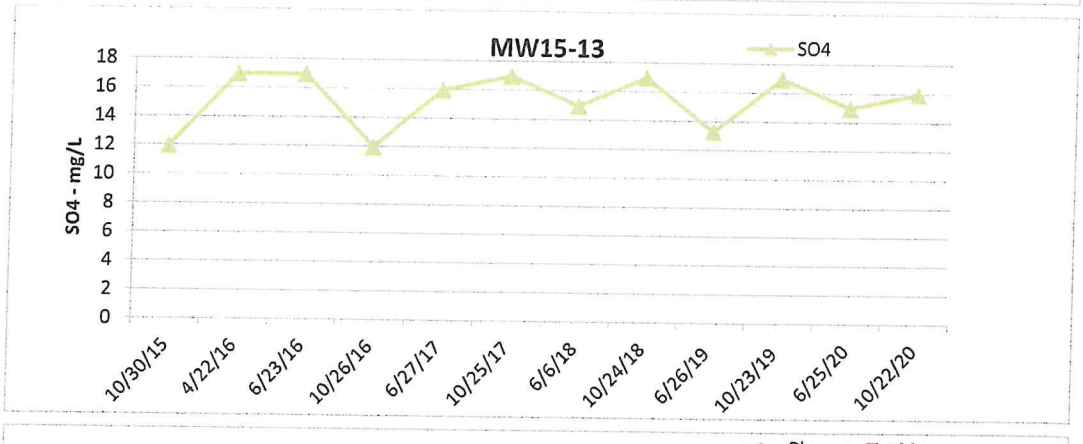


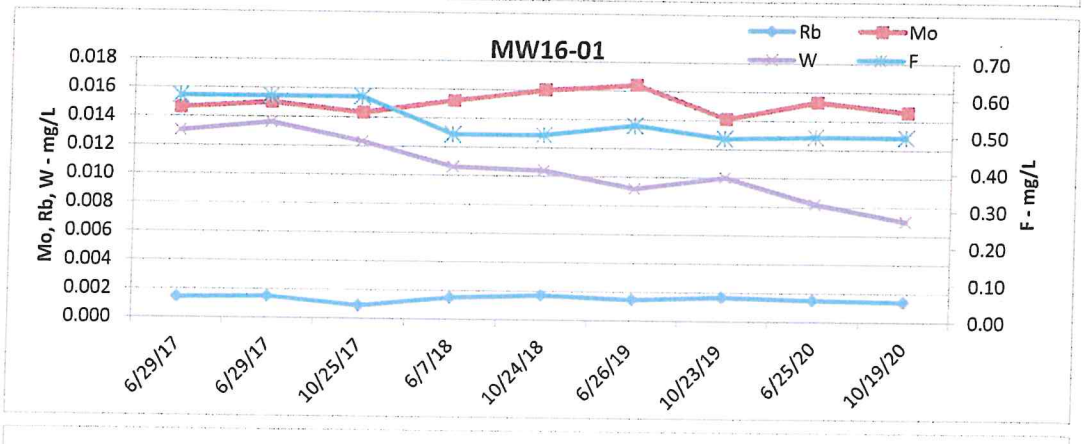


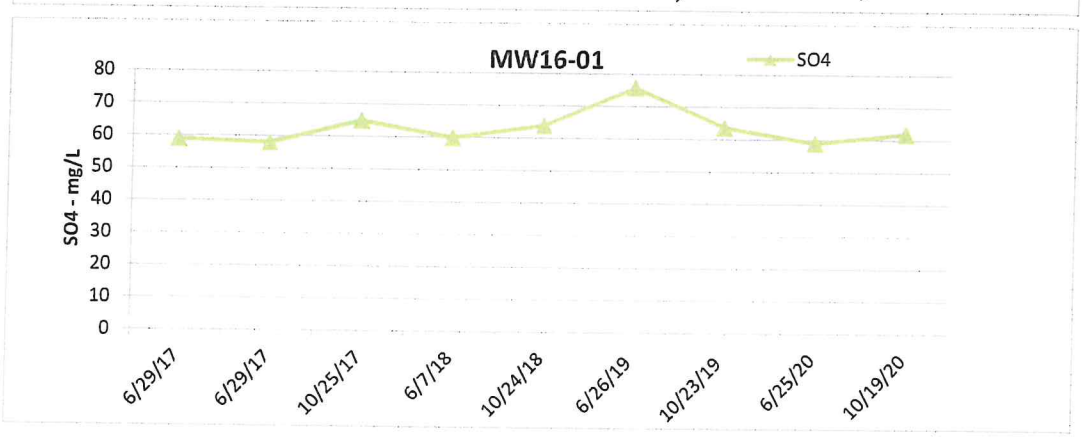


Appendix B. Groundwater Trend Plots

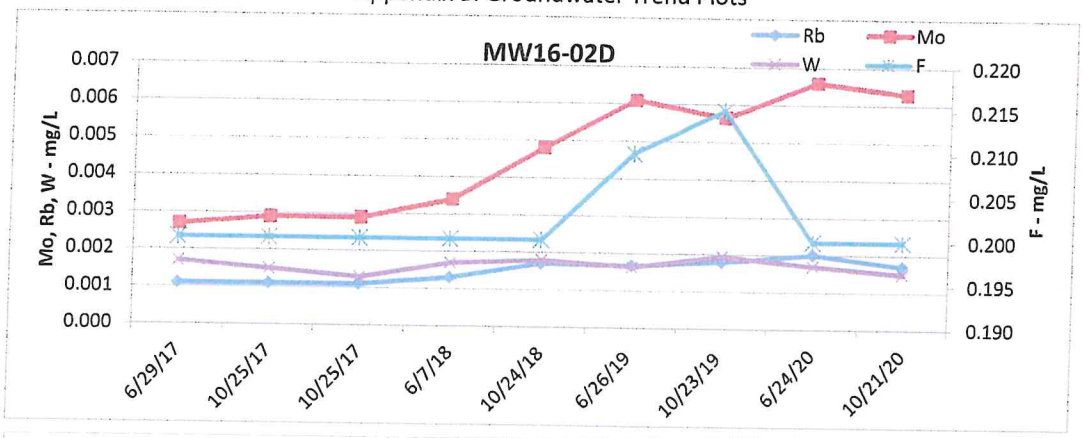


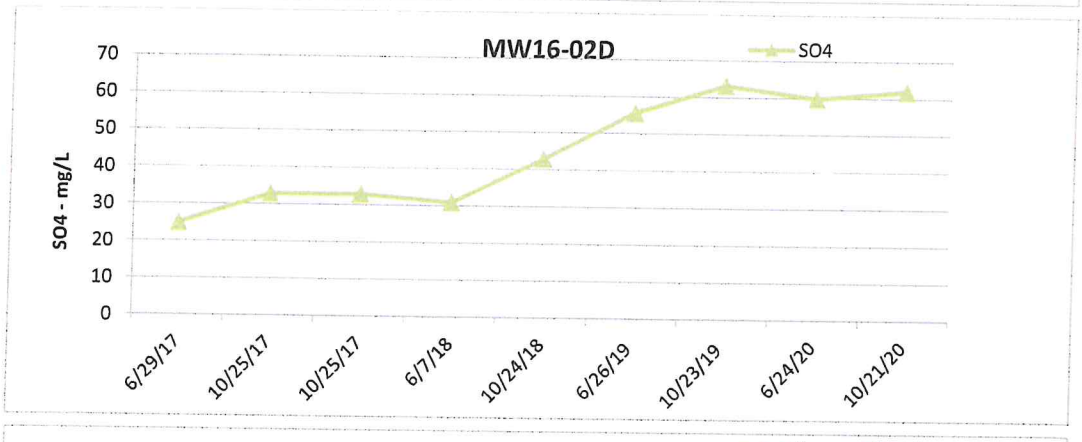


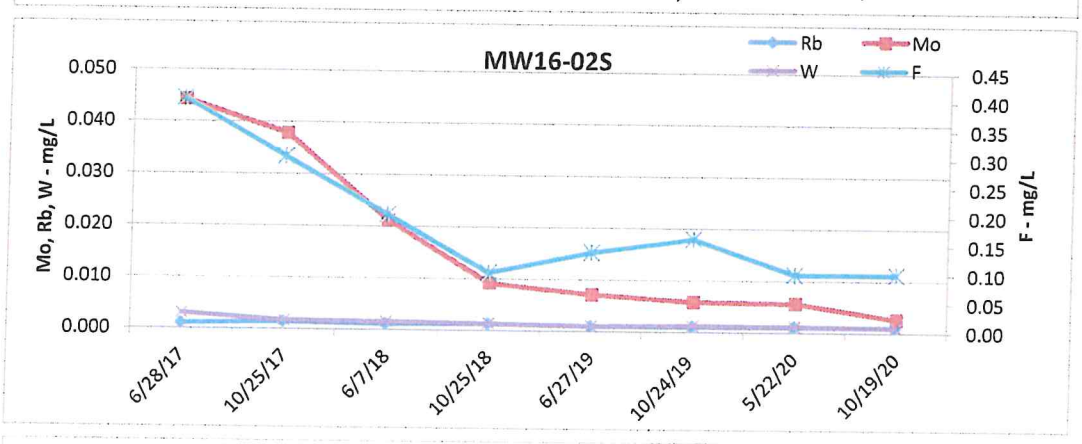


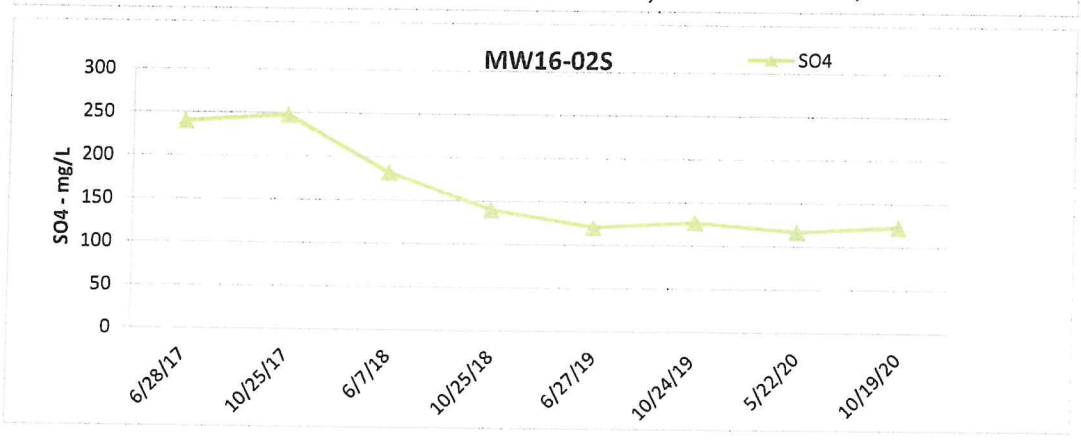


Appendix B. Groundwater Trend Plots



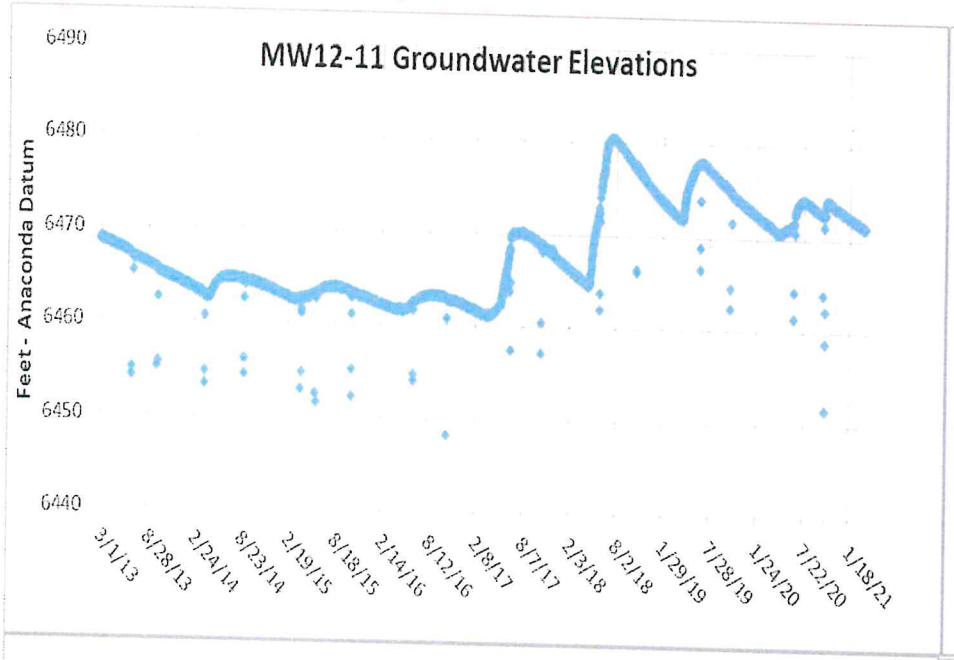


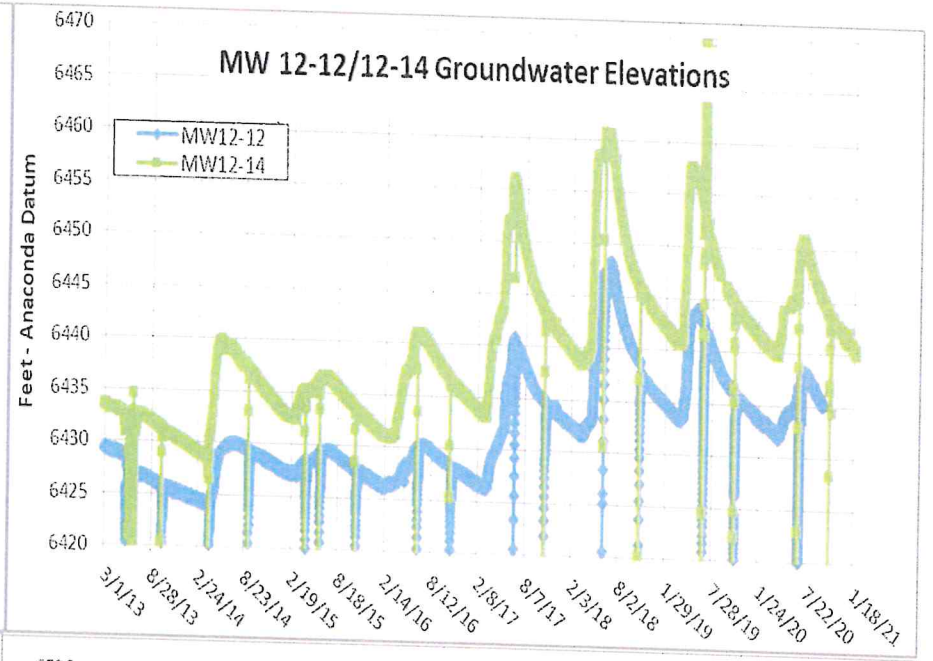


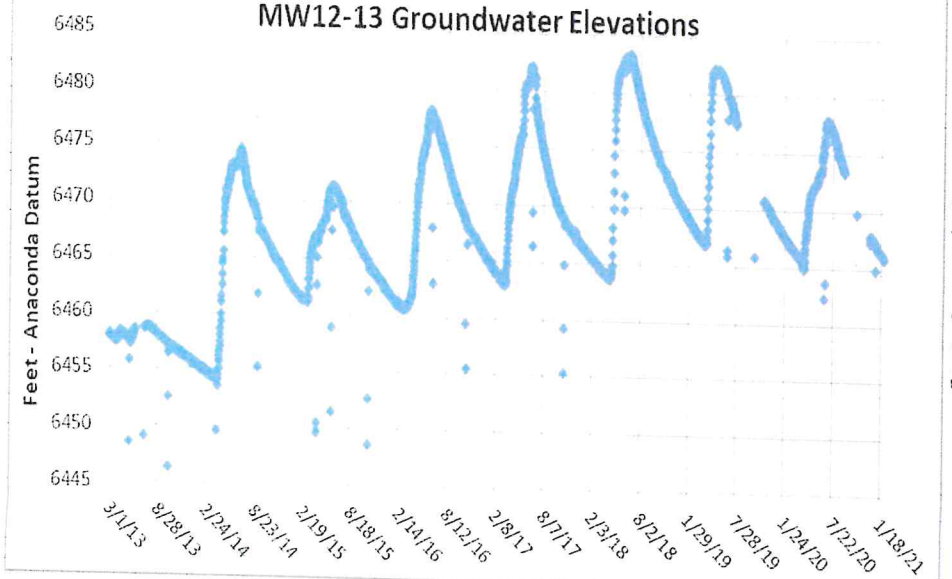


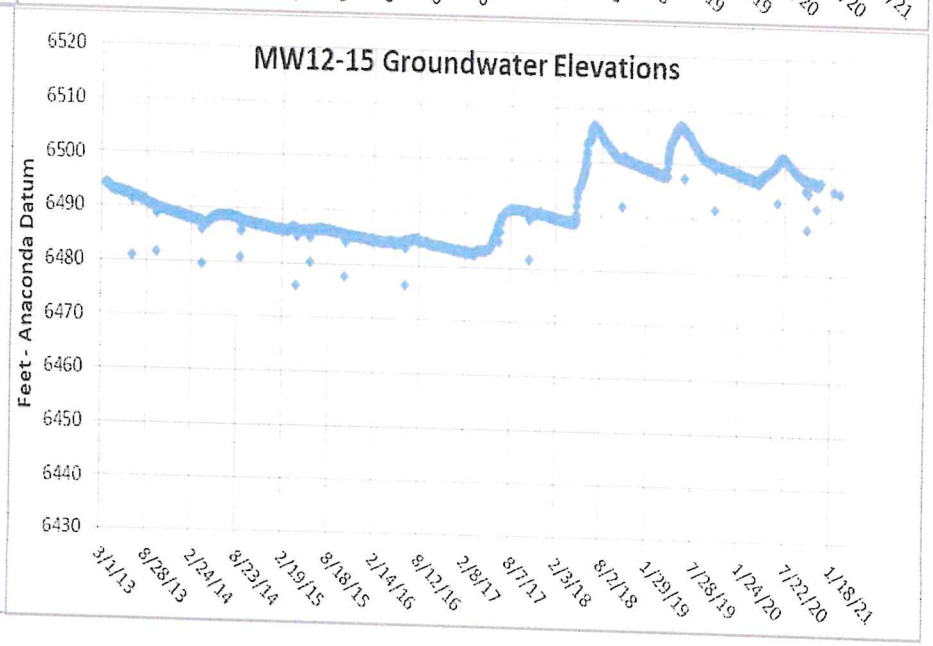
APPENDIX C

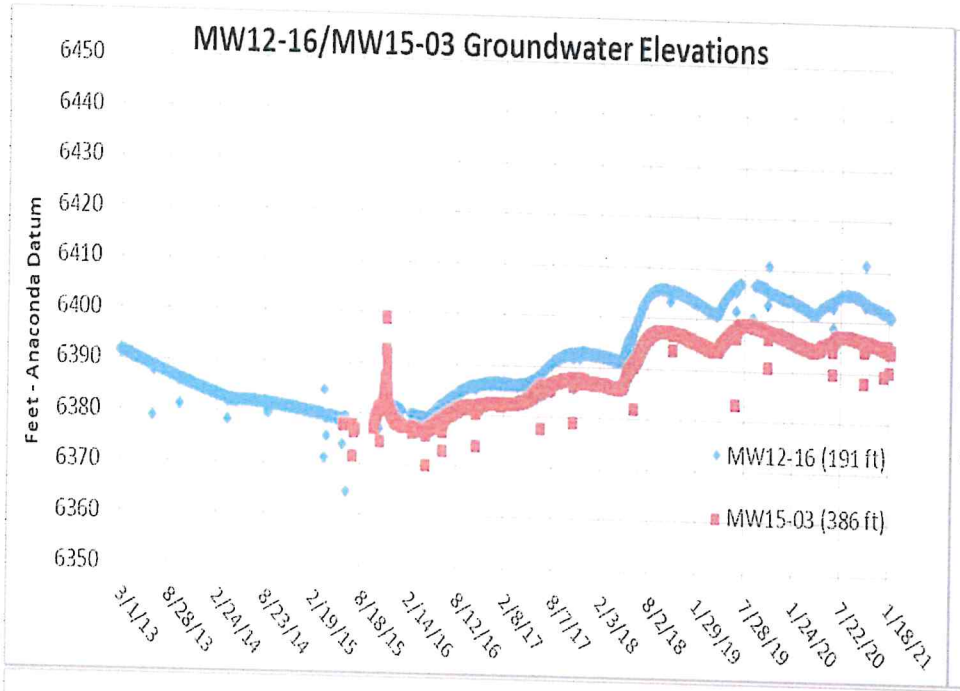
WATER LEVEL HYDROGRAPHS FOR IMPOUNDMENT AREA MONITORING WELLS

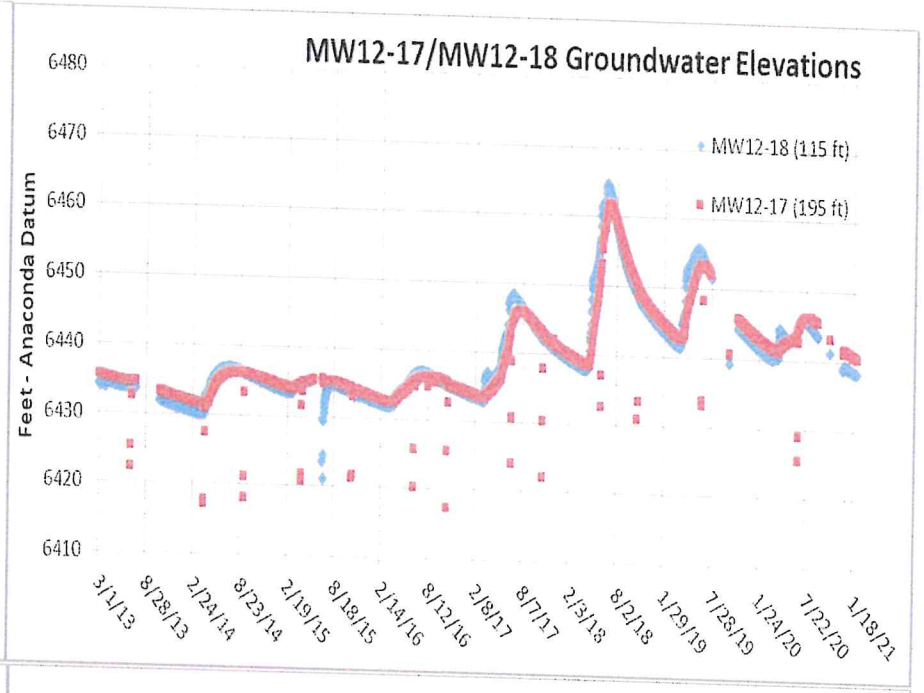

MW12-11 Groundwater Elevations
Feet - Anaconda Datum
6490
6480
6470
6460
6450
6440
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

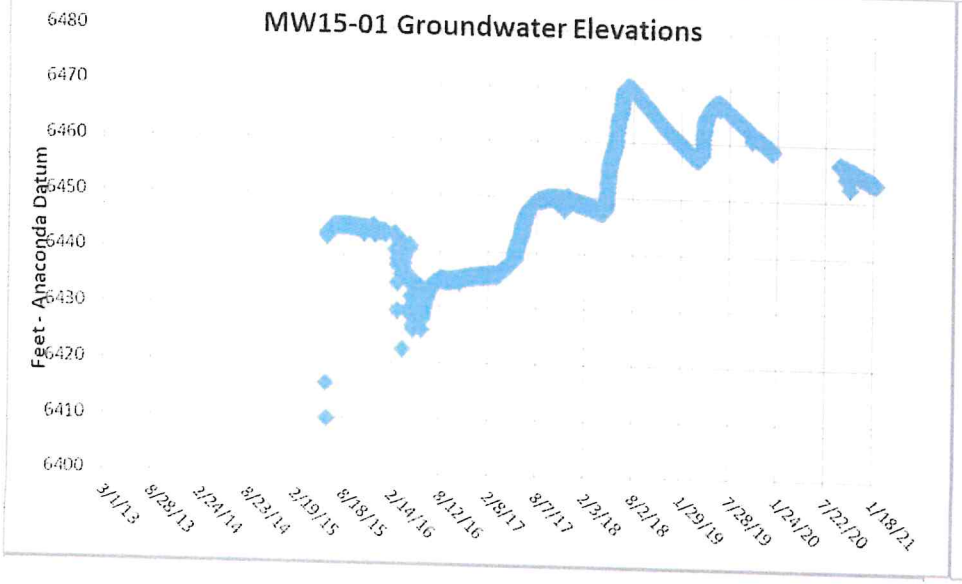

MW 12-12/12-14 Groundwater Elevations
MW12-12
MW12-14
Feet - Anaconda Datum
6470
6465
6460
6455
6450
6445
6440
6435
6430
6425
6420
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

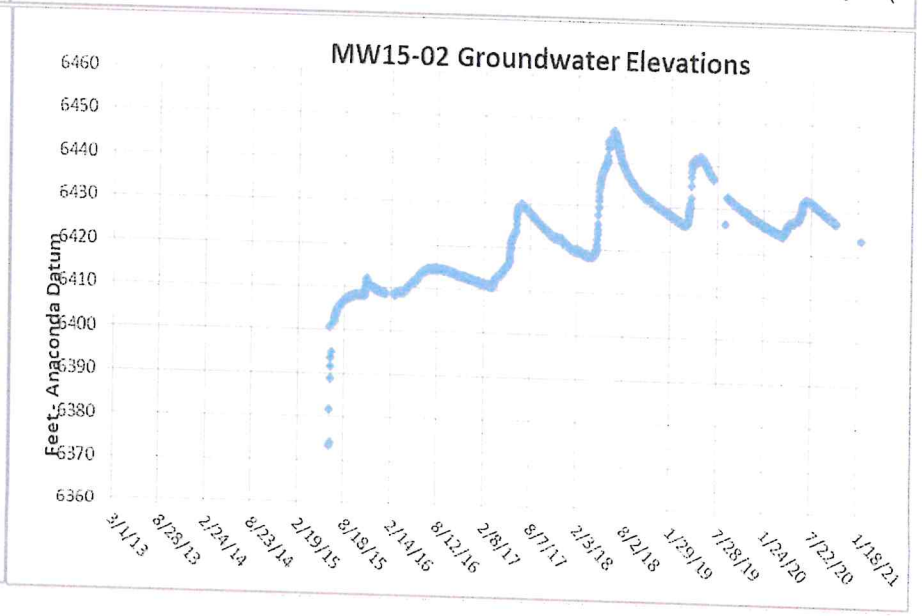

MW12-13 Groundwater Elevations
Feet - Anaconda Datum
6485
6480
6475
6470
6465
6460
6455
6450
6445
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

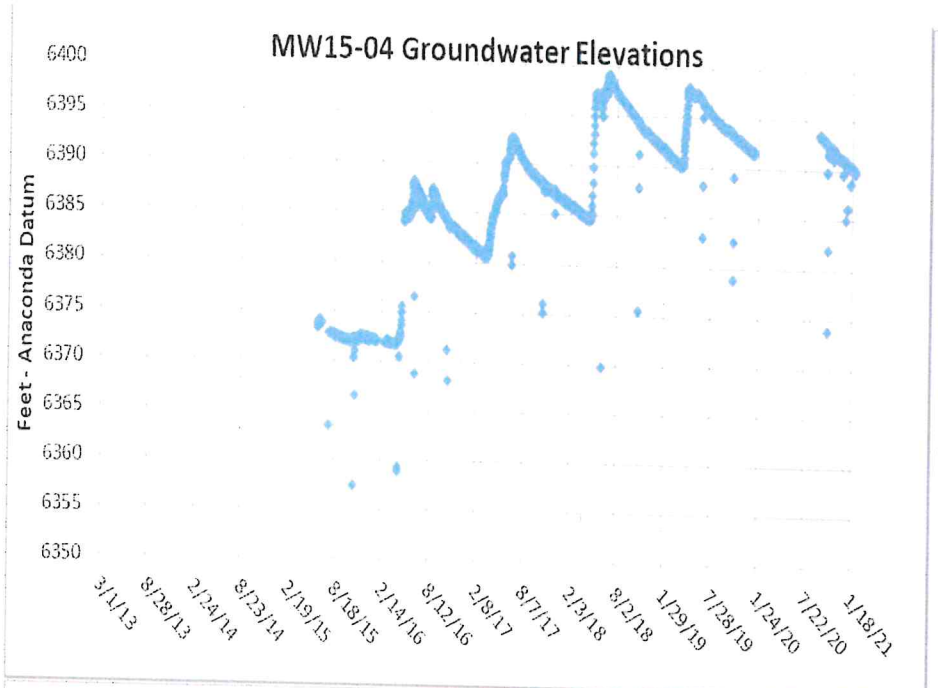

MW12-15 Groundwater Elevations
Feet - Anaconda Datum
6520
6510
6500
6490
6480
6470
6460
6450
6440
6430
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

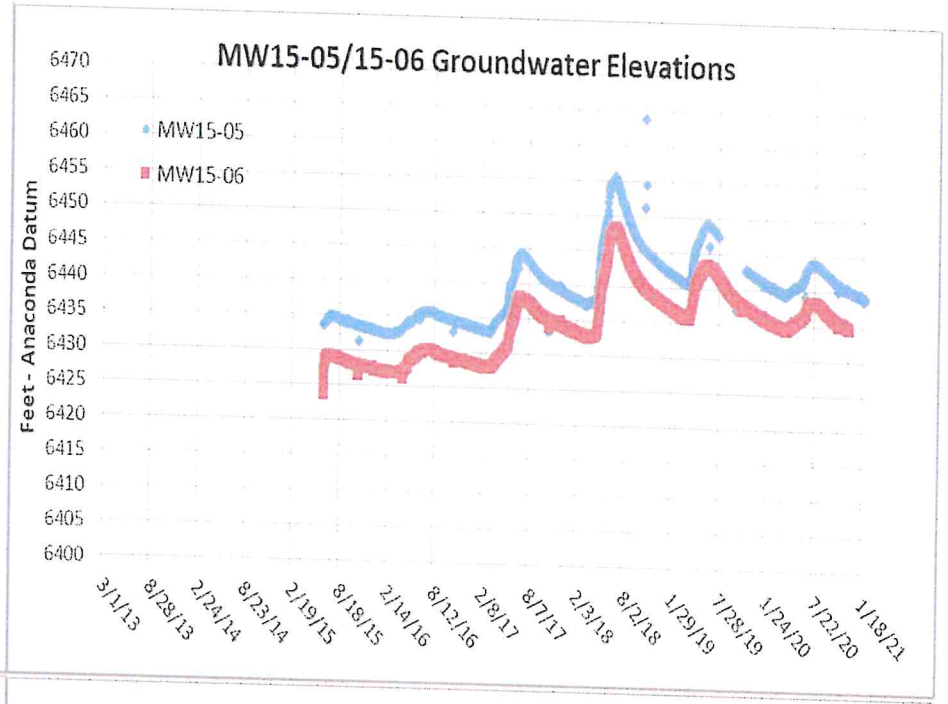

MW12-16/MW15-03 Groundwater Elevations
Feet - Anaconda Datum
6450
6440
6430
6420
6410
6400
6390
6380
6370
6360
6350
MW12-16 (191 ft)
MW15-03 (386 ft)
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

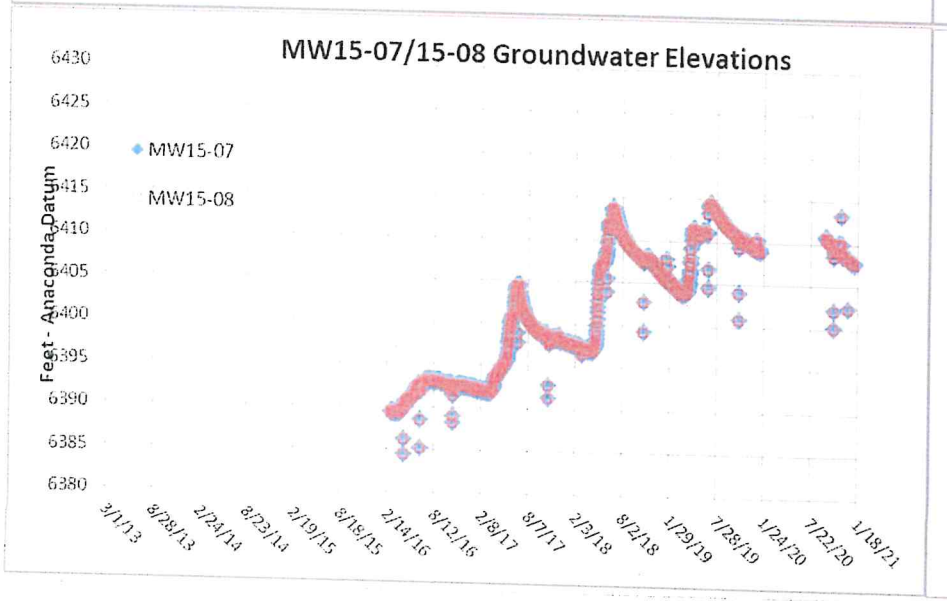

MW12-17/MW12-18 Groundwater Elevations
Feet - Anaconda Datum
6480
6470
6460
6450
6440
6430
6420
6410
MW12-18 (115 ft)
MW12-17 (195 ft)
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

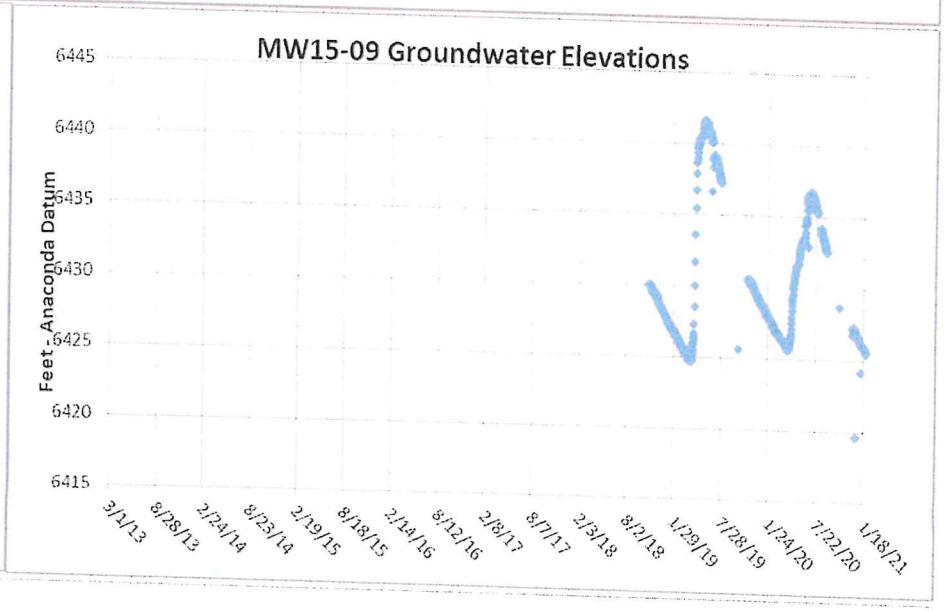

MW15-01 Groundwater Elevations
Feet - Anaconda Datum
6480
6470
6460
6450
6440
6430
6420
6410
6400
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

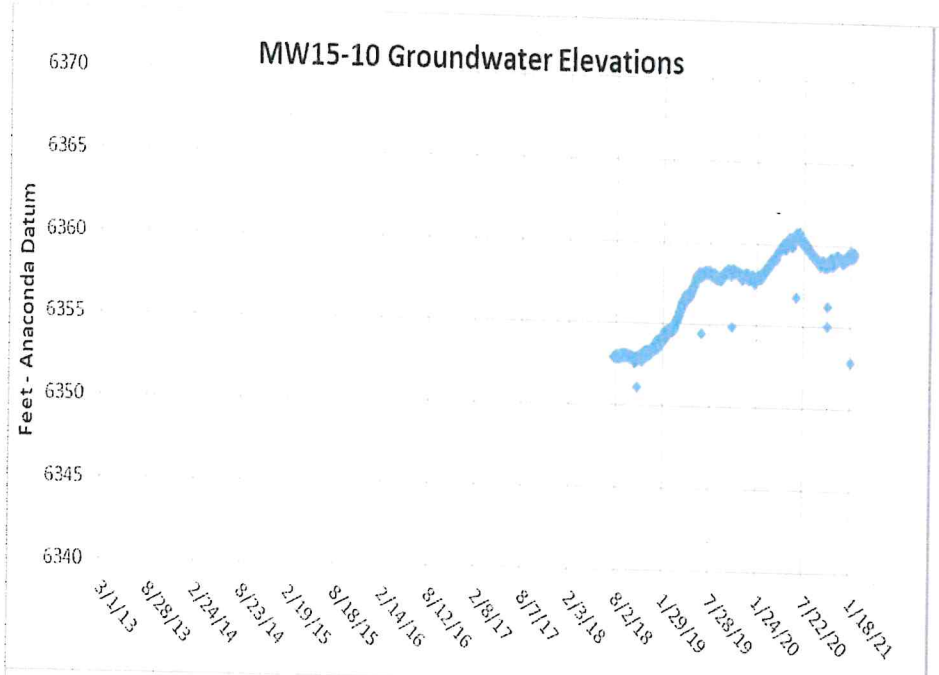

MW15-02 Groundwater Elevations
Feet - Anaconda Datum
6460
6450
6440
6430
6420
6410
6400
6390
6380
6370
6360
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

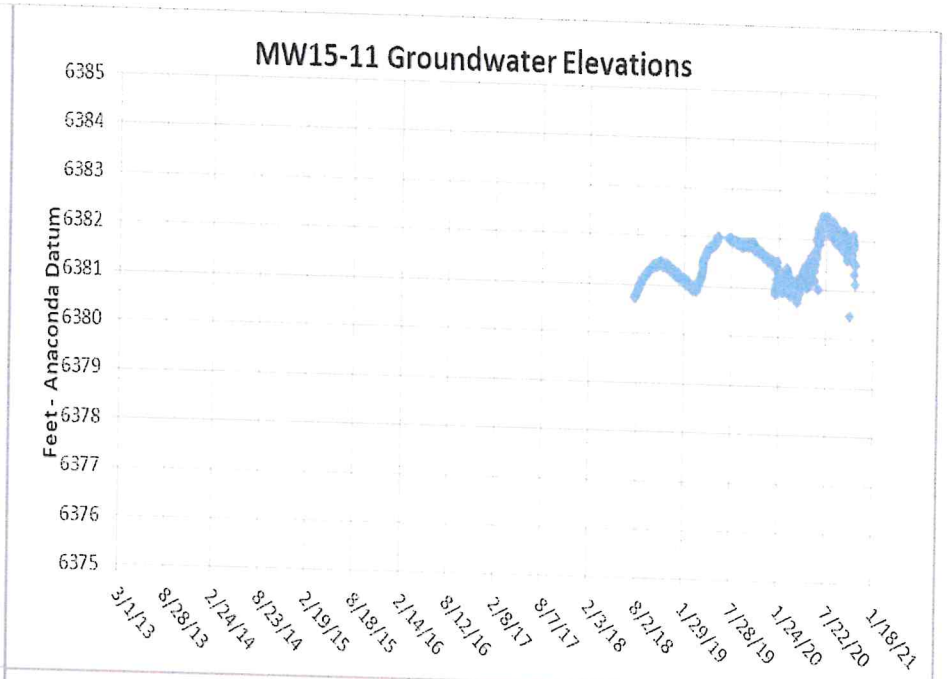

MW15-04 Groundwater Elevations
Feet - Anaconda Datum
6400
6395
6390
6385
6380
6375
6370
6365
6360
6355
6350
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

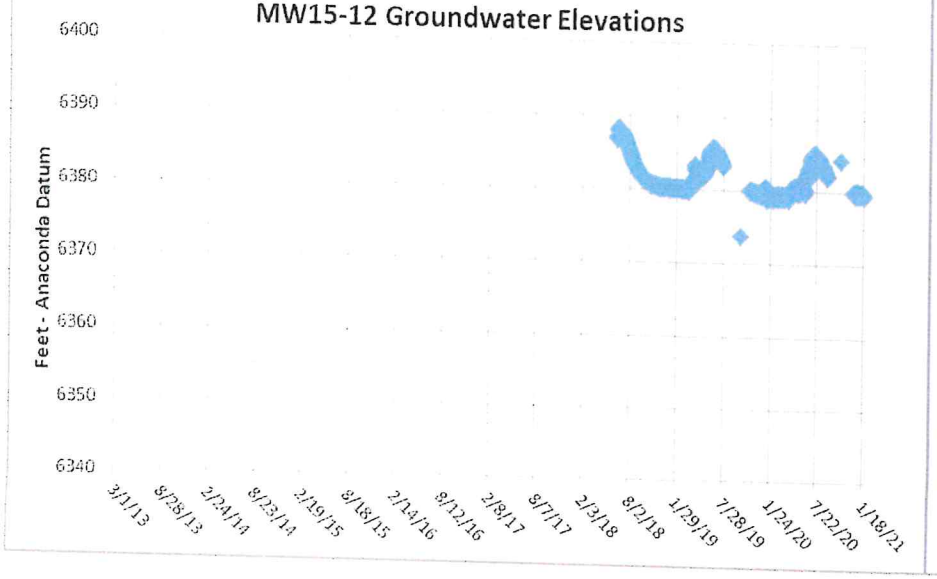

MW15-05/15-06 Groundwater Elevations
Feet - Anaconda Datum
MW15-05
MW15-06
6470
6465
6460
6455
6450
6445
6440
6435
6430
6425
6420
6415
6410
6405
6400
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

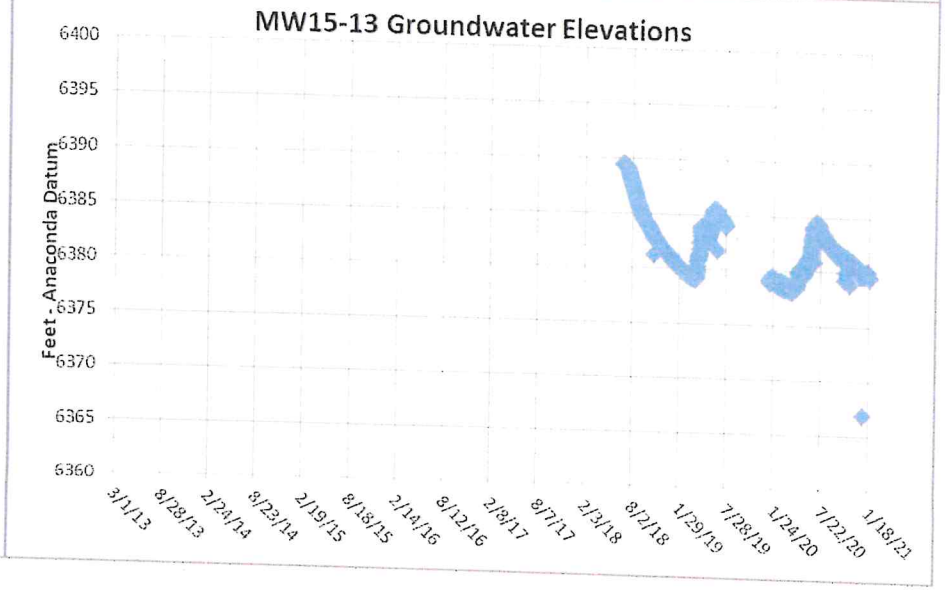

MW15-07/15-08 Groundwater Elevations
Feet - Anaconda Datum
MW15-07
MW15-08
6430
6425
6420
6415
6410
6405
6400
6395
6390
6385
6380
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

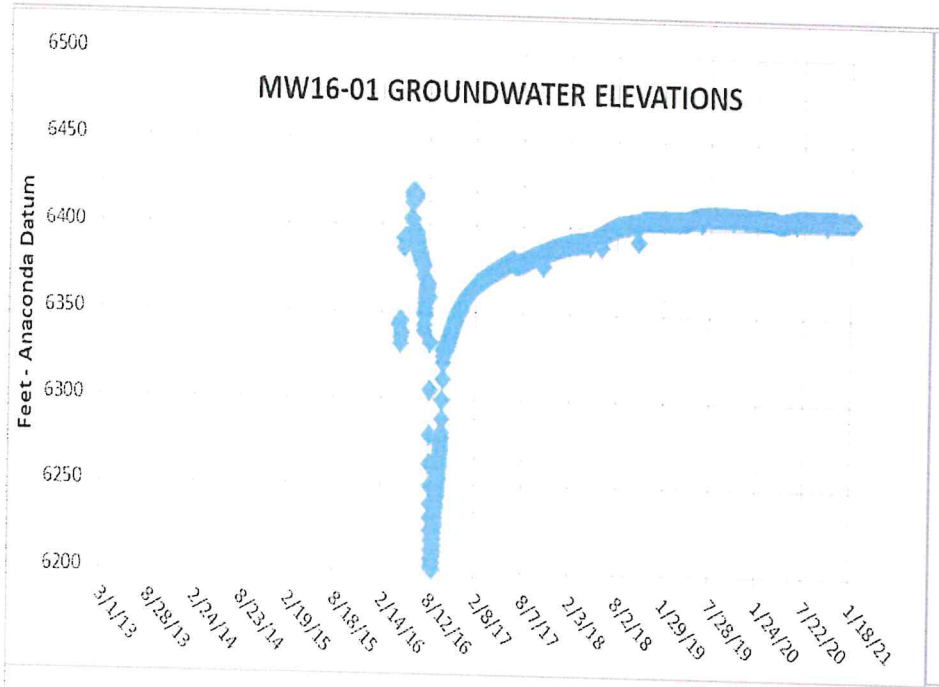

MW15-09 Groundwater Elevations
Feet - Anaconda Datum
6445
6440
6435
6430
6425
6420
6415
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

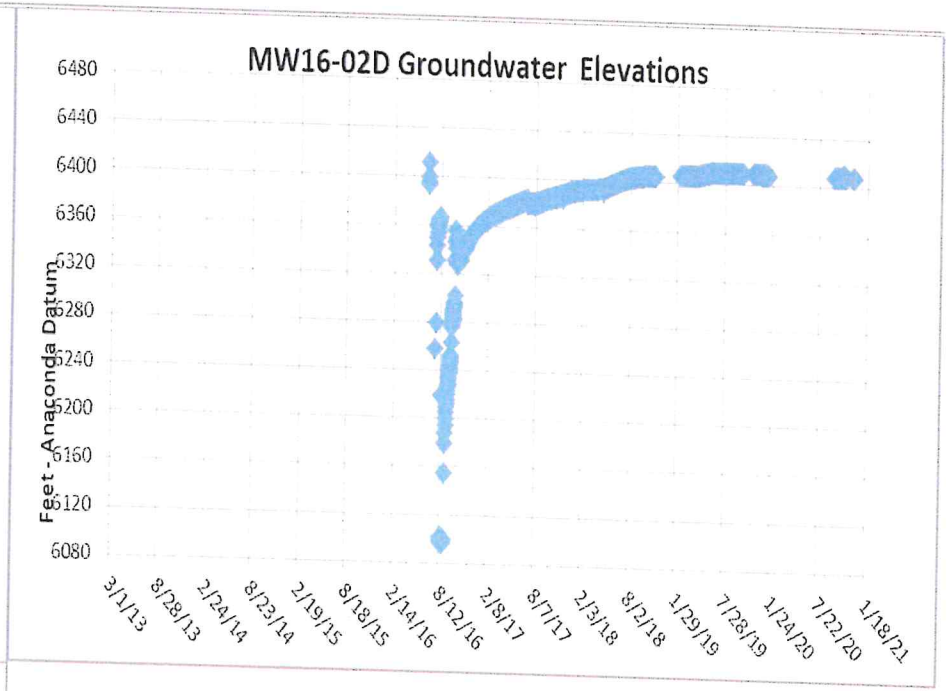

MW15-10 Groundwater Elevations
Feet - Anaconda Datum
6370
6365
6360
6355
6350
6345
6340
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

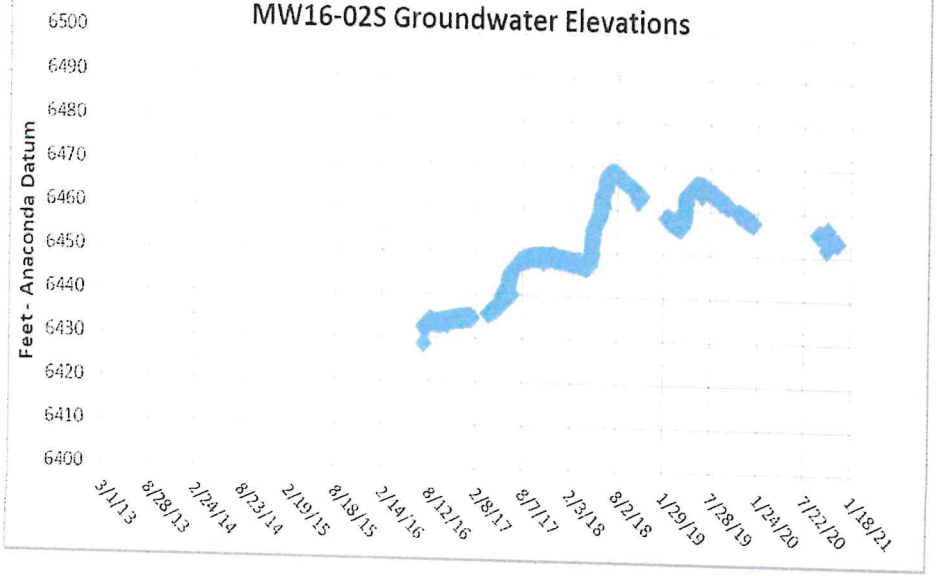

MW15-11 Groundwater Elevations
Feet - Anaconda Datum
6385
6384
6383
6382
6381
6380
6379
6378
6377
6376
6375
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21


MW15-12 Groundwater Elevations
Feet - Anaconda Datum
6400
6390
6380
6370
6360
6350
6340
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21


MW15-13 Groundwater Elevations
Feet - Anaconda Datum
6400
6395
6390
6385
6380
6375
6370
6365
6360
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21


MW16-01 GROUNDWATER ELEVATIONS
Feet - Anaconda Datum
6500
6450
6400
6350
6300
6250
6200
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21


MW16-02D Groundwater Elevations
Feet - Anaconda Datum
6480
6440
6400
6360
6320
6280
6240
6200
6160
6120
6080
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21


MW16-02S Groundwater Elevations
Feet - Anaconda Datum
6500
6490
6480
6470
6460
6450
6440
6430
6420
6410
6400
3/1/13
8/28/13
2/24/14
8/23/14
2/19/15
8/18/15
2/14/16
8/12/16
2/8/17
8/7/17
2/3/18
8/2/18
1/29/19
7/28/19
1/24/20
7/22/20
1/18/21

5.0 Materials Inventory

5.1 Topsoil

Soil was salvaged in advance of the rising tailings pond water level. Soil salvaged into temporary stockpiles in 2019 was hauled to the new Bumtown 2 Soil Stockpile as well as other soil salvaged on the northeast side of the YDTI. Approximately 37,420 cubic yards of topsoil was placed in the Bumtown 2 Soil Stockpile.

Approximately 4,200 cubic yards of topsoil was hauled from the Bunker Soil Stockpile to topsoil approximately 5.2 acres of the East Dump Complex in 2020.

Table 5.1 contains the current topsoil inventory by stockpile. A history of topsoil stockpile activity can be found in the 2014 Annual Report and subsequent annual reports.

Topsoil will continue to be salvaged concurrent with the rising water levels in the YDTI.

Table 5.1. Soil Stockpile Inventory through 2020

Stockpile	Cubic Yards - 2019	Cubic Yards – 2020
Bunker[1]	100,100	95,900
Mouton Road	474,700	474,700
Bumtown II	0	37,420
Total	**574,800**	**608,020**

5.2 Alluvium

Approximately 20 million cubic yards of suitable reclamation material has been identified in the Central Zone/McQueen area.

Approximately 1,545,000 cubic yards of alluvium are currently contained in the Lunch Room Stockpile.

Approximately 1,067,000 cubic yards of alluvium are currently contained in a temporary stockpile near four-corners. This material will be used for Zone F for the 6450 lift of the YDTI.

No new stockpiling of alluvium is anticipated in 2021.

[1] Sometimes referred to as the Four Corners Stockpile.

5.3 Leached Capping

All leached capping mined in 2020 was used for tailing embankment construction.

All leached capping mined in 2021 will be used for tailings embankment construction. No stockpiling of leach capping is anticipated in 2020.

5.4 Parrot Tailings

No mine wastes from the historic Parrot Smelter area were brought to MR by Montana Natural Resource Damage Program (NRDP) in 2020. It is anticipated that material haulage will resume from the Parrot Smelter area to MR in 2021.

Water from the Parrot Smelter project area was pumped to MR in 2020 (see Section 4).

5.5 Compost

MR stockpiled approximately 7,400 cubic yards of compost in the McQueen area in 2020.

6.0 Disturbance and Bonding Status

6.1 2020 Disturbance Summary

New disturbance in 2020 was associated with implementation of Amendment 10 to Permit 30A, topsoil salvage and stockpiling, and the rising water level in YDTI.

Montana Resources mined 18,800,000 tons of non-ore rock in 2020. This rock was predominately used for constructing the Yankee Doodle Tailings Impoundment (YDTI).

The bottom of the Continental Pit is at the 5160' elevation in the North Pit and at the 5280' elevation in the South Pit.

A total of 16,500,000 tons of ore were mined in 2020.

It is anticipated that approximately 50 acres of new disturbance will occur in 2021, mostly associated with topsoil salvage and stockpiling, and YDTI construction.

6.2 Bond and Permit Status

Present Bond Review

The last 5-year bond review was completed in 2015 and the bond was increased from $52,300,455 to $57,577,902.

Bond determination for Amendment 10 to Permit 30A was an increase of $57,024,673. This increment was posted in 2020 for a total bonded amount of $114,602,575.

Also, in 2020, a 5-year bond review was initiated. It is anticipated that the 5-bond review will be completed in 2021.

Operating Permit Amendments and Revisions

A Record of Decision for Amendment 10 to permit 30A was issued in 2019, and the Final Permit was issued 2020.

The mine operating permits (00030, 00030A, 00041, and 00108) are all active.

Two minor Revisions to the Operating permits were approved during 2020:

- MR 20-001 – a permit boundary adjustment in the Northwest Dump area;
- MR 20-002 – Construction of tailings facility access road.

To compare bonded acreage to actual disturbance, MR, in consultation with MDEQ, is reporting total disturbance for all permits. Table 6.1 is a more detailed table of facility acreages and is further illustrated in Plate II.

For all Operating Permit Numbers: 00030, 00030A, 041, and 108:

- Total Permit Area 6136 Acres
- Total Acreage Currently Disturbed 5533 Acres
- Amount of Bond $114,602,575
- Amount of Obligated Bond $114,602,575

Within the permit boundary there are areas subject to differing bonding requirements. Table 6.2 identifies these areas by designation. Plate II illustrates their locations.

MR, DEQ and others have been collaboratively developing new mapping and planimetry to define the various areas and acreages and develop a methodology for annually updating these areas. Areas identified in this annual report generally agree with the areas being utilized in the current 5-year bond review.

Table 6.1. Acreage Covered by Operating Permits

	Area (Acres)
Continental Pit	1000
Berkeley Pit	684
Primary Crusher	44
Concentrator Area	95
Precipitation Plant Area	73
YDTI Embankments	689
YDTI Beach	900
YDTI Pond	602
Leach Pads	201
Mining Related Facilities	1035
Undisturbed	603
Reclaimed	210
Total	**6136**

Table 6.2. Areas Subject to Various Bonding Requirements

Bond Status	Area (Acres)
Exempt from Bonding	
BMFOU	997
GMMIA	17
Pre-1971 Process Facilities	212
Pre-1974	1687
Bond by Calculation	3223
Total	**6136**

7.0 Yankee Doodle Tailings Impoundment

The Yankee Doodle Tailings Impoundment (YDTI) is located entirely within Montana Resources' property. The embankment is currently being constructed to a permitted elevation of 6450 feet, ACM datum. The tailings pond had a 2020 year-end elevation of 6359 feet. This is a rise in the tailings pond elevation of 1foot for 2020.

7.1 *Inspection*

The YDTI was visually inspected monthly, throughout 2020 in conjunction with routine monitoring of instrumentation.

The Engineer of Record (EOR) annual inspection of the YDTI was conducted on October 15, 2020, by Mr. Allen Gipson (P.E. in Colorado and Wyoming) on behalf of Mr. Ken Brouwer, P.E., the EOR, due to public health restrictions relating to travel associated with the COVID-19 pandemic. The Annual Inspection Report (AIR) was submitted to DEQ on February 11, 2021. The AIR provides detailed information regarding the operation, maintenance, monitoring and construction of the YDTI.

Also submitted with the AIR were the Corrective Action Plans associated with the EOR recommendations. Those plans are attached.

7.2 *Ongoing Disturbance*

The YDTI Pond typically increases its area of inundation by 18-25 acres annually with normal milling operations. As the elevation of the pond rises, undisturbed ground at the north end of the pond is inundated by the pond.

7.3 *Site Investigation*

In 2020, a multi-year site investigation of the YDTI continued with additional borings in the embankments. The reports and data will be made available to DEQ and the IRP.

Montana Resources

600 Shields Ave.
Butte, Montana 59701

February 11, 2021

Montana Department of Environmental Quality
Hard Rock Mining Bureau
Attn: Herb Rolfes
P.O. Box 200901
Helena, MT 59620

Re: 2020 Annual Inspection Report for Yankee Doodle Tailings Impoundment and Corrective Action Plan for Recommendations

Dear Mr. Rolfes:

The Engineer of Record (EOR) annual inspection of the Montana Resources, LLP (MR) Yankee Doodle Tailings Impoundment (YDTI) was conducted on October 15, 2020, by Mr. Allen Gipson (P.E. in Colorado and Wyoming) on behalf of Mr. Ken Brouwer, P.E., the Engineer of Record (EOR), due to public health restrictions relating to travel associated with the COVID-19 pandemic. Mr. Gipson was accompanied during the site inspection by Mr. Mike Harvie (Manager of Engineering and Geology) of MR.

The EOR annual inspection is required under Section 82-4-381 of the Montana Code Annotated (MCA), which also requires the mine operator to prepare a Corrective Action Plan (CAP) summarizing the recommendations of the EOR and an implementation schedule for the corrective actions. KP prepared the 'Yankee Doodle Tailings Impoundment – 2020 Annual Inspection Report' (AIR), following the inspection.

This letter documents MR's CAP in response to the five recommendations presented by the EOR:

1. Maintain reductions in freshwater use from the Silver Lake Water System to the extent reasonably practicable and continue the Pilot Project to incrementally reduce the water inventory in the YDTI supernatant pond towards the target of approximately 15,000 acre-ft.

2. Modify the tailings distribution system by extending Line 2 to allow discharge at location NS-1 and NS-2 when the EL. 6,450 ft raise of the embankment is completed adjacent to these discharge locations.

3. Further develop the construction sequence and dumping plan for the EL. 6,450 ft lift focused on the next 12 to 24 months, including a more detailed summary of the sequence and anticipated progress of embankment construction on approximately a quarterly basis.

4. Cease recirculation of barren leach water to the rock disposal sites (RDSs) directly adjacent to the YDTI embankments over the next several years.

5. Develop an updated five-year plan that includes consideration for continued phased site investigation, installation of new monitoring instrumentation, and potential replacement of lost or abandoned monitoring instruments.

MR has developed the following CAP that is expected to effectively address the recommendations contained in the AIR.

1. **Maintain reductions in freshwater use from the Silver Lake Water System to the extent reasonably practicable and continue the Pilot Project to incrementally reduce the water inventory in the YDTI supernatant pond towards the target of approximately 15,000 acre-ft.**

MR continued to operate with reduced freshwater use in 2020, with an average SLWS flowrate of approximately 1.1 MGPD, which is comparable with the average flowrate since mid-2017. MR anticipates comparable average use of freshwater in 2021.

Since commissioning the Pilot Project in September 2019, through December 2020, approximately 770 M gallons (2,400 ac-ft) of YDTI water has been discharged to Silver Bow Creek. MR is optimistic that the YDTI supernatant pond target inventory of approximately 15,000 acre-ft can be achieved over the next 2 to 4 years through a combination of the discharging water from the YDTI using the pilot project and continuing to operate the concentrator with reduced freshwater use. However, the Pilot Project is not entirely within MR's control due to a variety of factors and Polishing Plant issues and other interruptions are possible that could impact the timeline.

2. **Modify the tailings distribution system by extending Line 2 to allow discharge at location NS-1 and NS-2 when the EL. 6,450 ft raise of the embankment is completed adjacent to these discharge locations.**

As noted in the 2019 CAP, MR recognizes that the ability to discharge from either of two lines or at two locations concurrently along the North-South Embankment would improve flexibility for operations and enhance beach development along the embankment. MR evaluated options for the adjustment of this line in 2020, and determined that realignment of Line 2 would not be practicable during 2020 due to the embankment construction that was occurring along the East-West Embankment and is proposed to continue adjacent to NS-1 and NS-2 in 2021.

MR proposes the Line 2 realignment be deferred until the 6450 raise on the YDTI embankment is completed in the embankment section adjacent to NS-1 and NS-2 so the line does not have to be removed and replaced twice. MR anticipates the construction will be complete in this area in late 2021, and Line 2 can then be realigned in early 2022, and complete by Q2.

3. **Further develop the construction sequence and dumping plan for the EL. 6,450 ft lift focused on the next 12 to 24 months, including a more detailed summary of the sequence and anticipated progress of embankment construction on approximately a quarterly basis.**

MR will develop a short-term mine plan that estimates the schedule and quantity of rockfill available for construction by the end of Q2 2021. The schedule will consider the period from Q3 2021 through Q2 2023 (inclusive).

The rockfill schedule will include forecasting of rockfill availability on a monthly basis for the first six months, then quarterly, and will include identification of proposed use for the rockfill and maps identifying placement location.

Montana Resources

600 Shields Ave.
Butte, Montana 59701

4. **Cease recirculation of barren leach water to the rock disposal sites (RDSs) directly adjacent to the YDTI embankments over the next several years.**

MR will progressively decrease the recirculation flowrate by initially slowing down and then turning off the Precipitation Pump House pumps that recirculate the flow. Excess flow that is not recirculated will discharge to the HsB Pond via the PPT overflow weir or Hooligan by-pass. The excess flow will be treated in the HsB WTP or HsB Capture System. MR is targeting a 0.5 – 1.0 million gallons per day drawdown of the recirculating load to the RDSs.

MR commenced preliminary decommissioning of the leach circuit recirculation system in Q4 2020 by turning off the Cell 11 recirculation pump. The rate at which the recirculation system can be turned down depends on the drain down of the leach RDSs, annual precipitation and the availability of treatment system capacity. While the total volume of leach water in circulation is uncertain, MR anticipates that by reducing the leach circuit recirculating load in this manner, active pumping of leach water to RDSs can be ceased in 2022.

5. **Develop an updated five-year plan that includes consideration for continued phased site investigation, installation of additional monitoring instrumentation, and potential replacement of non-functional or abandoned monitoring instruments.**

MR will engage KP to develop a five-year instrumentation, investigation and monitoring plan that provides a forward-looking framework for continued phased site investigation, installation of additional monitoring instrumentation and replacement of damaged or abandoned instrumentation, where appropriate. MR suggests that the five-year plan should be informed by the results of the upcoming update to the risk assessment and in consideration of planned El. 6,450 embankment construction and findings of operational monitoring and site investigation programs completed to date. An adaptive management approach will continue to be used to allow selection and placement of instrumentation to be optimized to expand on existing monitoring network, enhance monitoring for key potential failure modes identified during the updated risk assessment, and maintain sufficient monitoring coverage as construction progresses.

If there are any questions or concerns regarding the CAP and schedule please contact me at (406) 496-3211.

Sincerely,

Mark Thompson

Vice President of Environmental Affairs
Montana Resources, LLP

Attachments:

A. Engineer of Record – Verification

Montana Resources

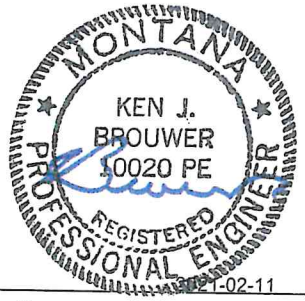
600 Shields Ave.
Butte, Montana 59701

ATTACHMENT A:

Engineer of Record (EOR) Verification

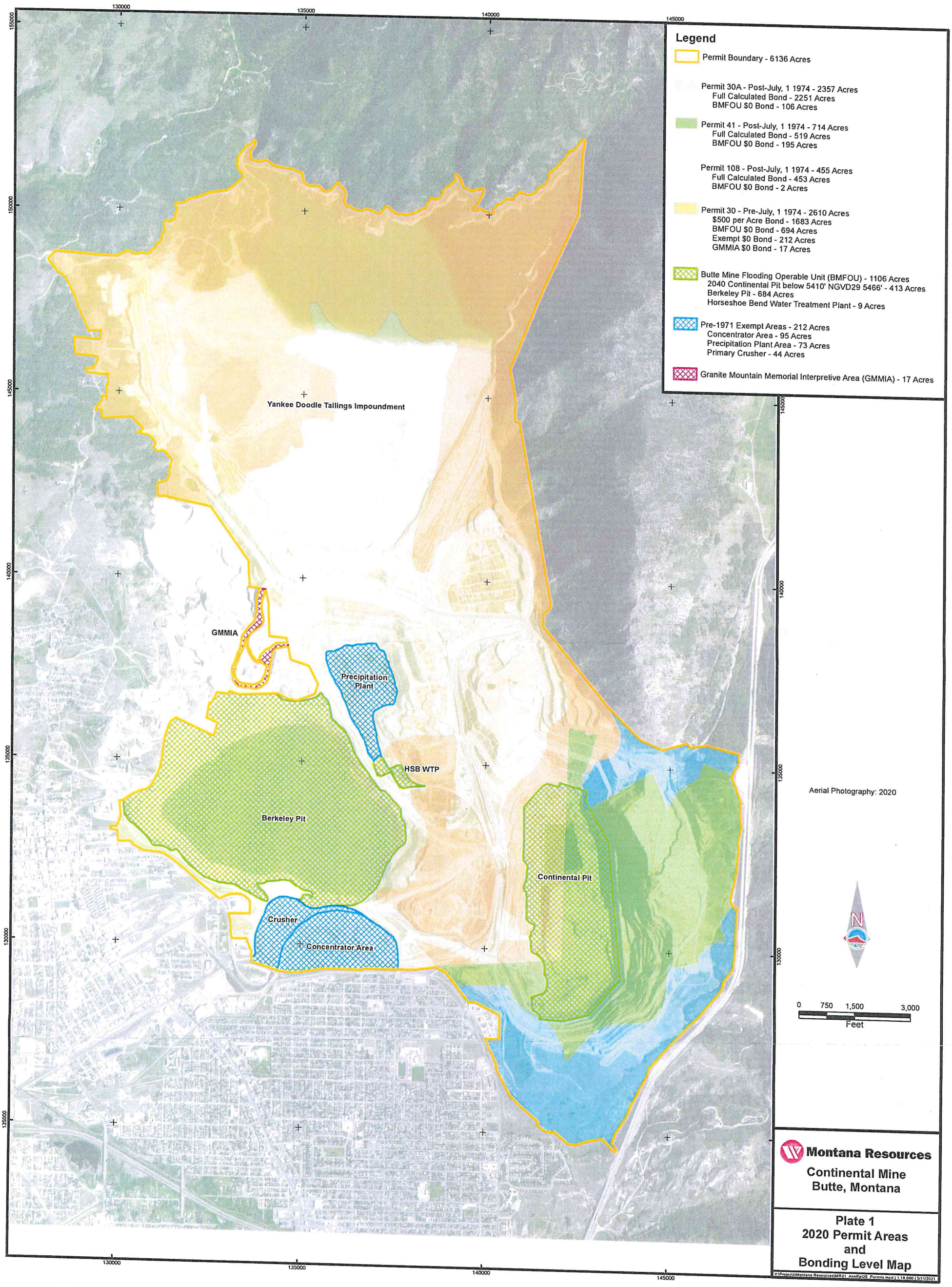
I have reviewed and verify that the corrective actions proposed by MR should reasonably be expected to effectively address the recommendations contained in the 2020 Annual Inspection Report.

Reviewed:



2021-02-11

Ken Brouwer, P.E.
Engineer of Record,
Knight Piésold Ltd.

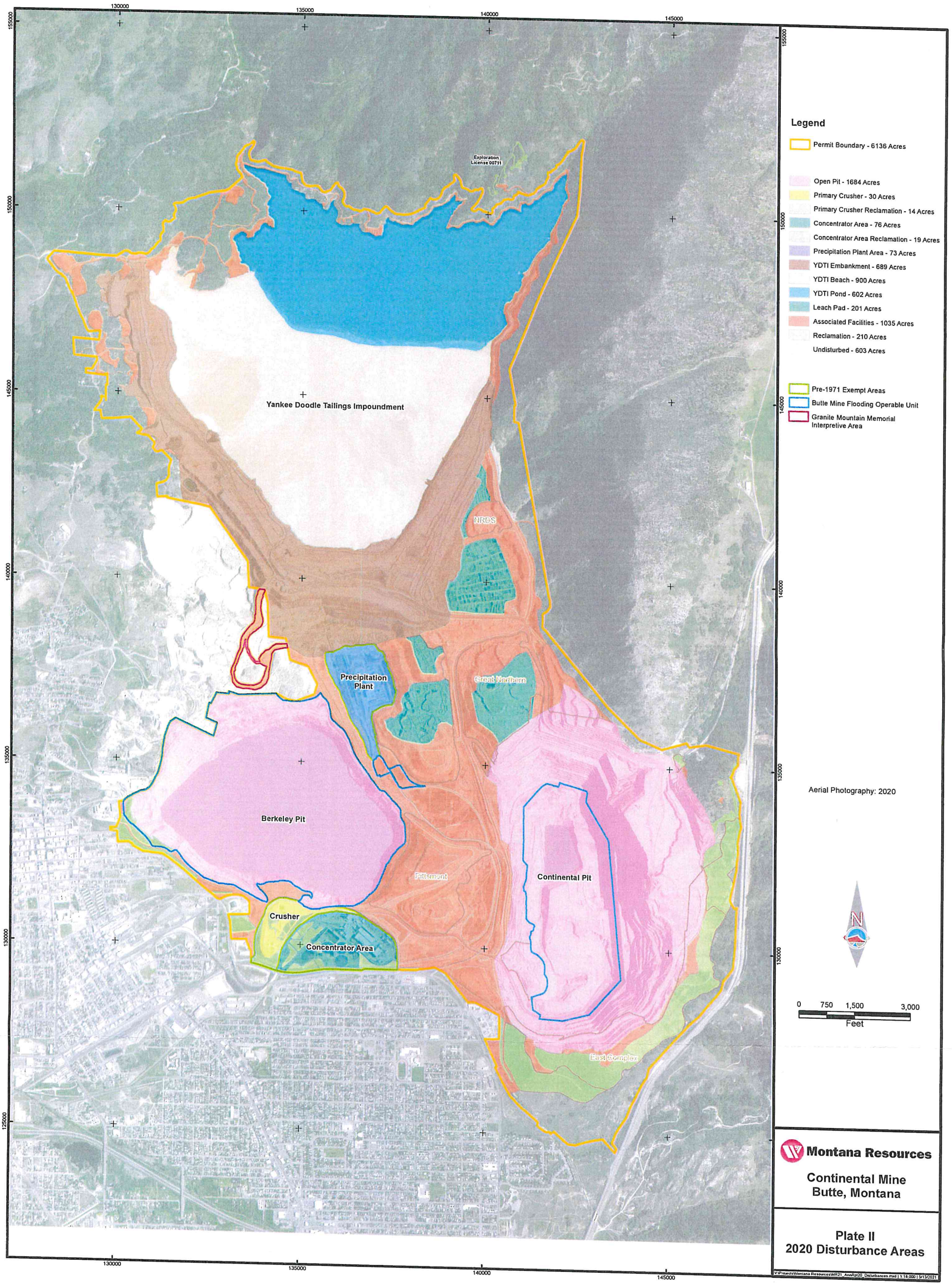


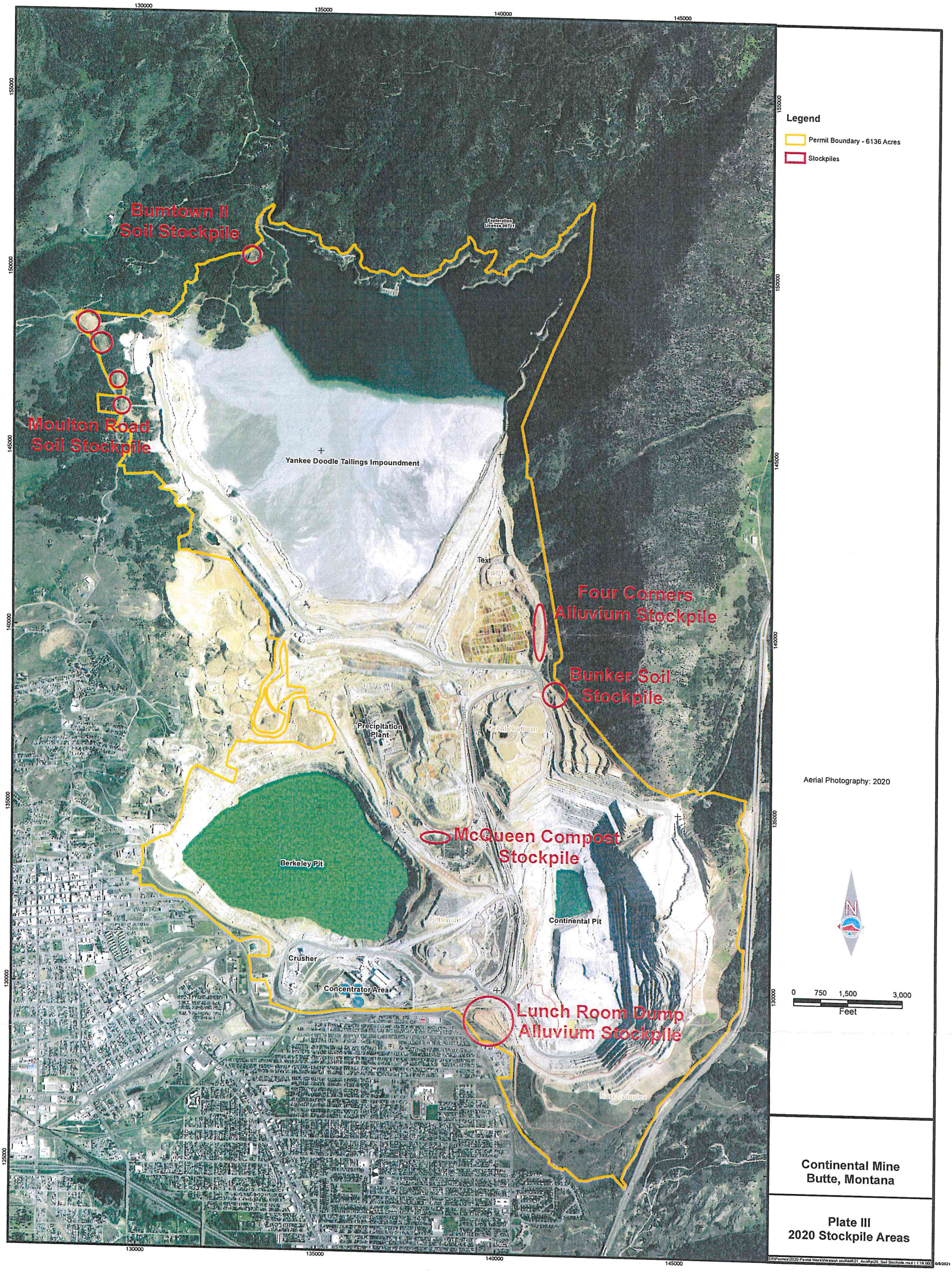
Montana Resources

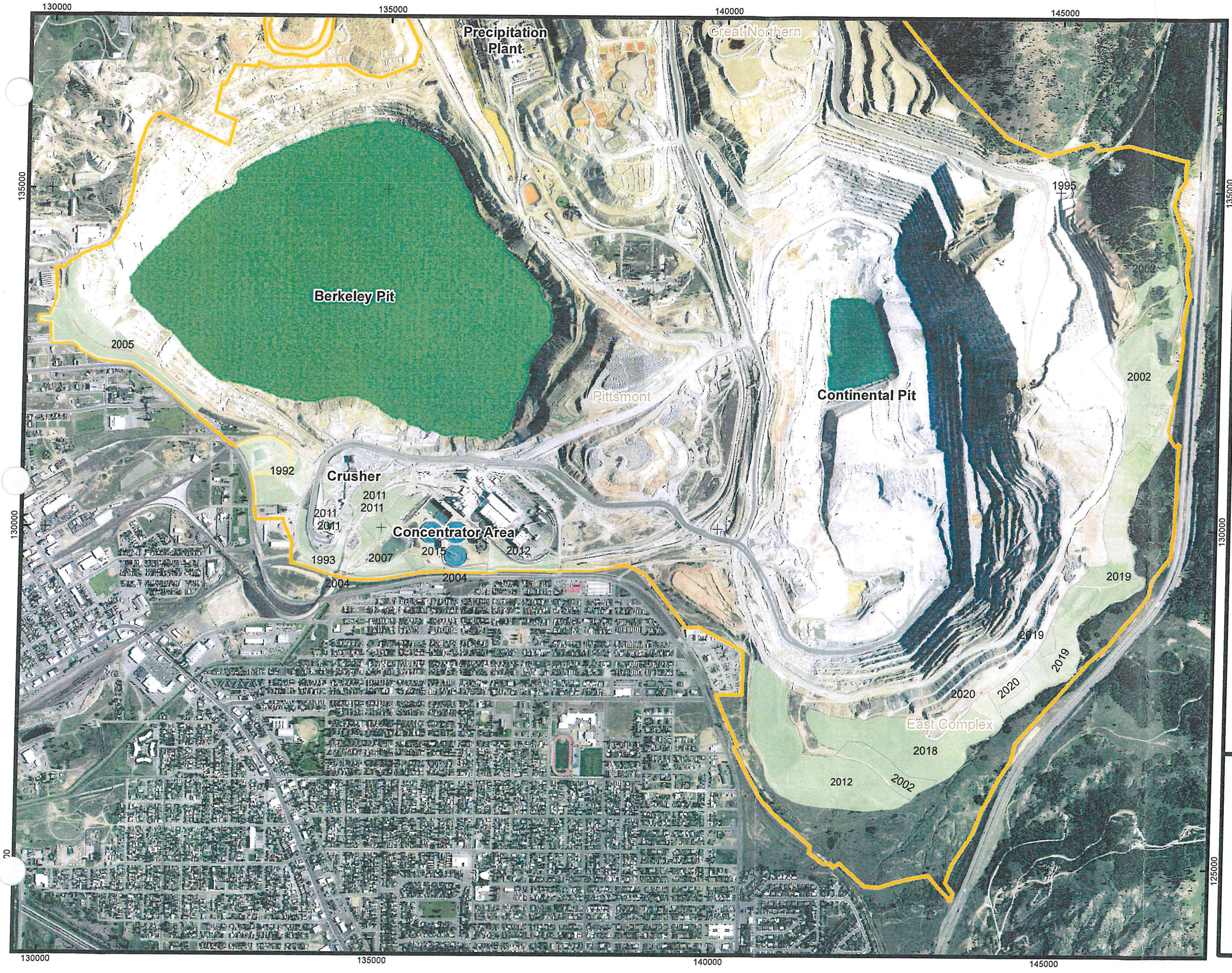
Continental Mine
Butte, Montana

Plate 1
2020 Permit Areas
and
Bonding Level Map

V:\Projects\Montana Resources\MR21_AnnRpt20_Permits.mxd | 1:16,000 | 5/11/2021


130000
135000
140000
145000
155000
150000
145000
140000
135000
130000
125000
Exploration License 00711
Yankee Doodle Tailings Impoundment
NRDS
Precipitation Plant
Great Northern
Berkeley Pit
Pittsment
Continental Pit
Crusher
Concentrator Area
East Complex
Legend
Permit Boundary - 6136 Acres
Open Pit - 1684 Acres
Primary Crusher - 30 Acres
Primary Crusher Reclamation - 14 Acres
Concentrator Area - 76 Acres
Concentrator Area Reclamation - 19 Acres
Precipitation Plant Area - 73 Acres
YDTI Embankment - 689 Acres
YDTI Beach - 900 Acres
YDTI Pond - 602 Acres
Leach Pad - 201 Acres
Associated Facilities - 1035 Acres
Reclamation - 210 Acres
Undisturbed - 603 Acres
Pre-1971 Exempt Areas
Butte Mine Flooding Operable Unit
Granite Mountain Memorial Interpretive Area
Aerial Photography: 2020
N
0 750 1,500 3,000
Feet
Montana Resources
Continental Mine
Butte, Montana
Plate II
2020 Disturbance Areas
V:\Projects\Montana Resources\MR21_AnnRpt20_Disturbances.mxd | 1:18,000 | 5/13/2021


Legend
Permit Boundary - 6136 Acres
Stockpiles
Bumtown II Soil Stockpile
Moulton Road Soil Stockpile
Four Corners Alluvium Stockpile
Bunker Soil Stockpile
McQueen Compost Stockpile
Lunch Room Dump Alluvium Stockpile
Yankee Doodle Tailings Impoundment
Precipitation Plant
Berkeley Pit
Continental Pit
Crusher
Concentrator Area
Exploration License 00711
Aerial Photography: 2020
0 750 1,500 3,000
Feet
Continental Mine
Butte, Montana
Plate III
2020 Stockpile Areas
130000
135000
140000
145000
155000
150000
145000
140000
135000
130000
125000



Legend

- Permit Boundary - 6136 Acres
- Reclamation - 264 Acres

0 650 1,300 2,600

Feet

Continental Mine
Butte, Montana

Plate IV
2020 Reclamation Areas