

TECHNICAL MEMO

Date: July 15, 2025

To: F.H. Stoltze Land & Lumber
c/o Paul McKenzie, VP General Manager

From: Daniel J. P. Lozar, P.E.

RE: Wastewater Treatment System (WWTS) Feasibility Evaluation for
Lot 88 of Swan Sites No. 1
Section 14 Township 26 North Range 19 West P.M.M. Lake County, MT

Summary:

This Technical Memo documents a WWTS Feasibility Evaluation for Lot 88 of Swan Sites No. 1. Lot 88 is an approximately 1.50-acre lot located on the north side of Wapiti Lane near its intersection with Great Bear Loop. Lot 88 was created in the Swan Sites No. 1 subdivision in 1969. Lot 88 is bordered by Lot 87 to the west, Lot 89 to the east, Wapiti Lane to the south, and Johnson Creek to the north. Lot 88 is undeveloped although it does have two recently abandoned exploratory wells located near its center.

Certificate of Subdivision Plat Approval (COSA) No. 24-69-408 E.S. 69-144 was approved on July 15, 1969. The COSA requires that Lot 88 has a septic tank and a subsurface drainfield sized for 250-sf/bedroom be constructed to treat the wastewater generated by its respective single family dwelling. The COSA also requires a well drilled to a depth greater than 25-ft. There was no Plot Plan or Lot Layout drawing prepared with the COSA.

This WWTS Feasibility Evaluation should not be used for applying for a WWTS permit thru the Lake County Environmental Health Department. The evaluation should be used for informational purposes only.

Feasibility Evaluation Criteria:

The following information was used as the basis of the feasibility evaluation:

- Certificate of Subdivision Plat Approval (COSA) No. 24-69-408 E.S. 69-144
- Swan Sites No. 1 Subdivision Plat
- Duffey Land Surveying Topographic Survey of Lot 88 provided to Lozar Engineering, PLLC on September 23, 2024
- 2009 Flathead Basin LiDAR – Color Aerial Imagery
- 2009 Flathead Basin LiDAR – GIS Contour Lines
- Lake County WWTS Permit No. 2071 (Lot 87), No. 3526 (Lot 89), and No. 8893 (Lot 1)
- Lake County Planning Department – Provided Johnson Creek FEMA Floodplain Map
- MT DEQ Circular DEQ 4

- Lake County Environmental Health Department – Wastewater Treatment System Regulations
- Lake County Environmental Health and Planning Departments email correspondence
- Exploratory Wells Abandonment Log
- Abandonment of Easements

Certificate of Subdivision Plat Approval (COSA) No. 24-69-408 E.S. 69-144:

For Lot 88, the COSA requires “...the subsurface drainfield shall have a minimum absorption area of 250-sf per bedroom unless better percolation rates can be obtained through seepage pits.” For a single-family dwelling, this equates to:

1-bedroom	250-sf
2-bedroom	500-sf
3-bedroom	750-sf
4-bedroom	1000-sf
5-bedroom	1250-sf

If gravelless trench chambers are utilized in the standard absorption trenches, a 25% reduction in absorption area can be realized, equating to:

1-bedroom	188-sf
2-bedroom	375-sf
3-bedroom	563-sf
4-bedroom	750-sf
5-bedroom	938-sf

Additionally, for Lot 88, the COSA requires “THAT the individual water system will consist of a drilled well constructed in accordance with the criteria established in Regulation 136 of the State Board of Health to a minimum depth of 25 feet and will be located as indicated on typical plot plan.”

Primary Regulatory Setbacks Considered:

The following regulatory setbacks for the septic/dose tank, piping, and primary or replacement absorption areas were evaluated to determine siting constraints:

- 100-ft horizontal setback to existing and proposed wells for primary and replacement absorption areas
- 50-ft horizontal setback to proposed septic/dose tank
- 100-ft horizontal setback to Johnson Creek for primary and replacement absorption areas
- 100-ft horizontal setback from Johnson Creek floodplain extents to primary and replacement absorption areas
- 10-ft property line setbacks for all WWTS components
- 20-ft front property line setback for single-family dwelling structure
- >25-ft horizontal setback to slopes >35% for primary and replacement absorption areas

At the time a WWTS permit application is prepared, the designer shall ensure all regulatory setbacks are fully met as they prepare the final design of the WWTS components.

Lot Layout Assumptions:

The Feasibility Lot Layout drawing dated 07/15/2025 assumes the following:

- 12-ft driveway access to Lot 88 from Wapiti Lane.
- 3000-sf single-family dwelling
- Two exploratory wells are abandoned and neither the primary nor replacement absorption areas will be constructed over them in their current location.

- Non-degradation analysis is not required for Lot 88 since Swan Sites No. 1 was platted prior to 1994. Downgradient mixing zones are not required.
- Bottom of standard absorption trenches will be vertically located greater than 20-ft above the Johnson Creek floodplain.
- As-built location of the Lot 88 well must not deviate from the location proposed on the Feasibility Lot Layout drawing.
- Primary absorption area reflects the standard absorption trench gross area needed for a 5-bedroom single-family dwelling with no size reduction.
- Replacement absorption area will require a detailed design of an elevated sand mound or a subsurface drip system plus a Level 2 treatment component. This detailed design is outside the scope of this Feasibility Evaluation.
- Trees, brush, and vegetation will be removed to accommodate the primary and replacement absorption areas.
- 20-ft front property line setback is the only Swan Sites Zoning District regulation considered.
- Easement 10-305707 was fully terminated by the F.H. Stoltze Lumber & Land and all effected adjacent landowners prior to a WWTS permit being applied for. Easement 10-305707 was the only known Lot 88 encumbrance.
- Post-development storm drainage retention facilities are not required to be constructed on Lot 88.
- Owner will utilize a licensed land surveyor to stake all proposed water, wastewater, lot setbacks, and building locations prior to commencing their respective construction.

Feasibility Determination:

Based on the current wastewater treatment system regulatory requirements, the existing site conditions, and the lot layout assumptions described above, it is my opinion that a WWTS can be designed and likely permitted by the Lake County Environmental Health Department. However, site specific details will be left to the designer to evaluate and determine if a WWTS can be designed and constructed on Lot 88 that meets all regulatory setbacks and sizing criteria at the time of permitting.

This feasibility evaluation does not evaluate the potential or likelihood of Lot 88 receiving a Zoning Conformance Permit from the Lake County Planning Department. An approved Zoning Conformance Permit must be granted by the Lake County Planning Department prior to the Lake County Environmental Health Department’s approval of a WWTS permit for Lot 88.

Appendices:

- Appendix A – COSA No. 24-69-408 E.S. 69-144
- Appendix B – Swan Sites No. 1 (page 3)
- Appendix C – Feasibility Lot Layout dated 07/15/2025
- Appendix D – Lake County Planning Department – Provided Johnson Creek Floodplain Map
- Appendix E – Montana Well Abandonment Reports
- Appendix F – Abandonment, Release, and Termination of Easement

Prepared by:

Daniel J. P. Lozar

Date

- END -

C:\Lozar Engineering\Carlson Projects\2024\24-10 Stoltzelumber WWTS\24-10 Stoltzelumber Lot 88 Swan Sites No1 WWTS Feasibility V3.Docx

APPENDIX A

COSA NO. 24-69-408 E.S. 69-144

This has been typed from a copy of the original. All data filed in Helena Office

NOTE

(ORIG)
SWAN SITES
SUB

STATE OF MONTANA
DEPARTMENT OF HEALTH AND ENVIRONMENTAL SCIENCES
CERTIFICATE OF SUBDIVISION PLAT APPROVAL
(Section 69-5001 through 69-5005, R.C.M., 1947)

To: County Clerk and Recorder
Lake County
Polson, MT 59860

No. 24-⁶⁹~~8~~-408
E.S. 69-144

THIS IS TO CERTIFY THAT the plans and supplemental information relating to the individual water supply system and individual sewage disposal system for the subdivision known as Swan Sites Subdivision on Swan Lake and Swan River located in Lake County, Montana have been reviewed by engineers of the Division of Environmental Sciences, and,

THAT the documents and data required by Section 69-5001 to 69-5005, Revised Codes of Montana, 1947 and the rules and regulations of this Board made and promulgated pursuant thereto have been submitted and found to be in compliance therewith, and,

THAT the lot sizes as indicated on the plat filed with the county clerk and recorder will not be further altered, and,

THAT the individual water system will consist of a drilled well constructed in accordance with the criteria established in Regulation 136 of the State Board of Health to a minimum depth of 25 feet and will be located as indicated on typical plot plan, and,

THAT the individual sewage disposal system will consist of a septic tank and subsurface drainfield of such size and capacity as set forth in Regulation 136 and will be located as indicated on typical plot plan, and,

THAT each subsurface drainfield shall have a minimum absorption area of 165 square feet per bedroom for all lots except Lots 1, 2, 3, 10, 76 through 100 and 169 through 175; and for these lots the area shall be 250 square feet per bedroom unless better percolation rates can be obtained through seepage pits, and,

THAT plans for the proposed water and individual sewage systems will be reviewed and approved by the Lake County Health Department before construction is started, and,

THAT departure from any criteria set forth in State Board of Health Regulation 136 when erecting a structure and appurtenant facilities in said subdivision is grounds for injunction by the State Board of Health, and,

NOW, THEREFORE, the sanitary restriction imposed by said Section 69-5001 to 69-5005, Revised Codes of Montana, 1947 upon said tract is hereby and herewith removed.

To: County Clerk and Recorder
Lake County
Polson, MT 59860

-2-

No. 24-9-408

E.S. 69-144

YOU ARE REQUESTED to record this removal of sanitary restriction by attaching the within certificate to the map or plat of said subdivision filed in your office as required by law.

DATED this 15th day of July, 1969.

FOR THE STATE DEPARTMENT OF HEALTH

/S/ John S. Anderson, M.D.
Executive Officer

APPENDIX B

SWAN SITES NO. 1 SUBDIVISION PLAT (PAGE 3)

APPENDIX C
FEASIBILITY LOT LAYOUT (DATED 07/15/2025)

- ① PROPOSED SINGLE FAMILY DWELLING (ASSUMED LOCATION)
- ② PRIMARY ABSORPTION AREA (DRAINFIELD)
- ③ ELEVATED SAND MOUND 100% REPLACEMENT ABSORPTION AREA (DRAINFIELD)
- ④ DRIVEWAY AND PARKING AREA
- ⑤ PROPOSED WELL
- ⑥ 50-FT WELL ISOLATION ZONE
- ⑦ 100-FT WELL ISOLATION ZONE
- ⑧ EXISTING WELL
- ⑨ EXPLORATORY WELLS ABANDONED BY RM DRILLING AND WELL SERVICE ON 06/20/2025
- ⑩ EXISTING STRUCTURE
- ⑪ LCEHD PERMIT #2071 WWTS (APPROXIMATE)
- ⑫ LCEHD PERMIT #3526 WWTS (APPROXIMATE)
- ⑬ 8-12% C.S.
- ⑭ 10-FT PROPERTY SETBACK
- ⑮ OVERHEAD POWER UTILITY
- ⑯ JOHNSON CREEK
- ⑰ 100-FT SETBACK TO JOHNSON CREEK
- ⑱ WAPITI LANE
- ⑲ JOHNSON CREEK FLOODPLAIN PER LC PLANNING (APPROX)
- ⑳ 100-FT SETBACK TO JOHNSON CREEK FLOODPLAIN
- ㉑ 20-FT FRONT PROPERTY SETBACK FOR SUB-DISTRICT A SWAN SITES ZONING CONFORMANCE
- ㉒ GRAVITY SEWER SERVICE PIPE (ASSUMED)
- ㉓ COMBINATION SEPTIC/DOSE TANK (ASSUMED)
- ㉔ PRESSURIZED EFFLUENT TRANSPORT PIPE (ASSUMED)



VARIOUS SITE FEATURES PER 2018 LAKE COUNTY LIDAR, GE AERIAL IMAGERY, SWAN SITES NO. 1 SUBDIVISION PLAT, LC PLANNING JOHNSON CREEK FLOODPLAIN MAP, AND TOPOGRAPHIC A SURVEY COMPLETED BY DUFFEY LAND SURVEYING; LOZAR ENGINEERING, PLLC DID NOT VERIFY ANY CADASTRAL ELEMENTS OF SUBJECT PARCEL; THIS IS NOT A LEGAL SURVEY

FEASIBILITY LOT LAYOUT IS NOT A WWTS DESIGN AND SHOULD NOT BE USED FOR A WWTS PERMIT APPLICATION.

THERE ARE NO KNOWN WELLS OR DRAINFIELD/ABSORPTION AREAS WITHIN 100-FT OF THE SUBJECT PROPERTY'S BOUNDARIES UNLESS NOTED OTHERWISE.



REV BY	REV DATE	REV DESCRIPTION



34511 Chickweed Lane, Polson, MT 406-240-7929

LOT 88 SWAN SITES NO. 1
S14 T26N R19W
LAKE COUNTY, MT

WWTS FEASIBILITY
LOT LAYOUT

SHEET
1 OF 1

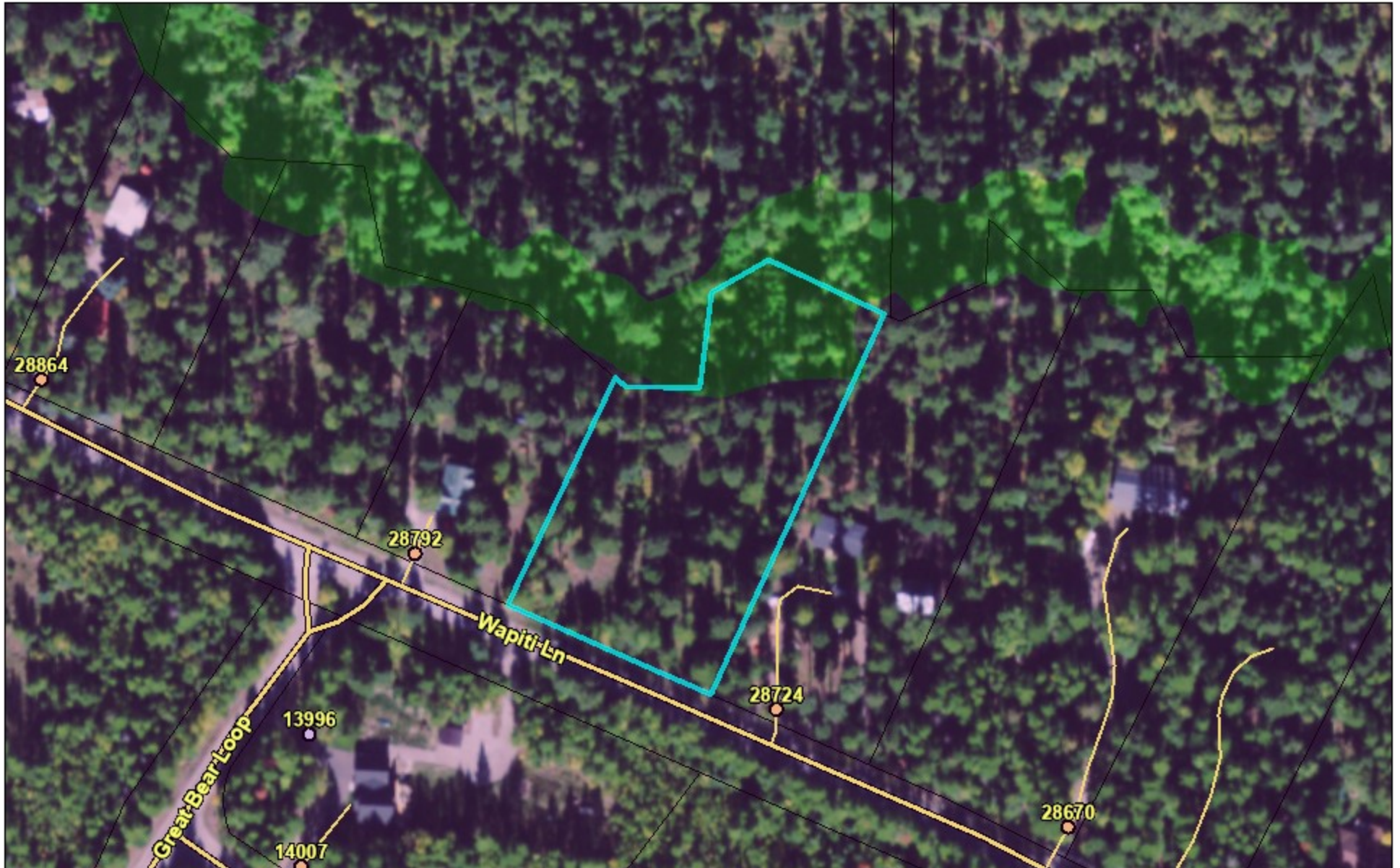
DRWN BY: DJPL

DATE: 07/15/2025

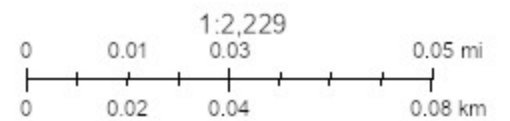
PROJECT NO. LE 24-10

APPENDIX D
LAKE COUNTY PLANNING DEPARTMENT PROVIDED
JOHNSON CREEK FLOODPLAIN MAP

ArcGIS Web Map



9/30/2024, 7:59:02 AM



Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyreisen, Rijkswaterstaat, GSA, Geoland, FEMA,

APPENDIX E
MONTANA WELL ABANDONMENT REPORTS

MONTANA WELL ABANDONMENT REPORT

1. EXISTING GWICID: N/A

2. WELL OWNER:

Name F.H. Stoltze Land and Lumber

Mailing address _____

3. WELL LOCATION: List ¼ from smallest to largest

_____ ¼ _____ ¼ SE ¼ Ne ¼, Section 14

Township 26 N/S Range 19EW County Lake

Lot _____, Tract/Blk _____ Subdivision Name _____

Well Address 595 Wapiti Lane

GPS Yes No

Latitude 48.0175 Longitude -113.9645

Error as reported by GPS locator (+ feet) _____

Horizontal datum NAD27 WGS84

4. WELL USE: Domestic Stock Irrigation

Public water supply Monitoring Well

Geothermal Closed System Open System

Reinjection Extraction Other: Exploration

5. TYPE OF WELL BEING ABANDONED:

Drilled Bored Jetted Hand Dug Other: _____

6. TYPE OF CASING:

Steel Dia. 7 in.

Plastic Dia. _____ in.

Concrete Dia. _____ in.

Other Dia. _____ in.

If other, type: _____

Was any casing removed? yes no

If yes, type (steel, pvc, etc.) _____

Amount removed _____ ft.

If more than one type: _____

Amount removed _____ ft.

Was casing driven down ward? yes no

If yes, feet below ground surface 4 ft.

Was casing Ripped or Perforated? yes no

7. WELL DATA:

Depth of well: 780 ft.

Static water level 121 ft.

Closed-in artesian pressure _____ psi.

Was well disinfected before decommissioning? yes no

If yes, type and amount of disinfectant used: _____

8. WELL LOG: Record sealing material used and depth(s)

Depth, Feet		Material type of material used to seal well (example: neat cement, bentonite chips, naturally occurring soils).
From	To	
5	300	<input checked="" type="checkbox"/> Neat Cement
		<input type="checkbox"/> High-solids Bentonite Grout
		<input type="checkbox"/> Bentonite Chips
		<input type="checkbox"/> Other (describe under remarks)

9. DATE WELL DECOMMISSIONED: Yes

10. REMARKS: Well was presser grouted from the bottom up with a 5.5 gallon to 1 bag of portland cement.

11. DRILLER/CONTRACTOR:

All work performed and reported in this decommissioning log is in compliance with the Montana well abandonment standards. This report is true to the best of my knowledge.

Name, firm, or corporation (print) RM Drilling and Well Services

Address 307 first Ave East Suite 2 Kalispell

Signature _____

Date 6/20/2025 License no. 841

License type: MWC WWC WWD

This report can be emailed to GWIC@mttech.edu, faxed to the GWIC office at (406) 496-4343, or sent to:

Ground Water Information Center
1300 W. Park St.
Butte, MT 59701-8997

MONTANA WELL ABANDONMENT REPORT

1. EXISTING GWICID: N/A

2. WELL OWNER:

Name F.H. Stoltze Land and Lumber

Mailing address _____

3. WELL LOCATION: List ¼ from smallest to largest

_____ ¼ _____ ¼ SE ¼ Ne ¼, Section 14

Township 26 N/S Range 19EW County Lake

Lot _____, Tract/Blk _____ Subdivision Name _____

Well Address 595 Wapiti Lane

GPS Yes No

Latitude 48.0175 Longitude -113.9645

Error as reported by GPS locator (+ feet) _____

Horizontal datum NAD27 WGS84

4. WELL USE: Domestic Stock Irrigation

Public water supply Monitoring Well

Geothermal Closed System Open System

ReInjection Extraction Other: Exploration

5. TYPE OF WELL BEING ABANDONDED:

Drilled Bored Jetted Hand Dug Other: _____

6. TYPE OF CASING:

Steel Dia. 7 in.

Plastic Dia. _____ in.

Concrete Dia. _____ in.

Other Dia. _____ in.

If other, type: _____

Was any casing removed? yes no

If yes, type (steel, pvc, etc.) _____

Amount removed _____ ft.

If more than one type: _____

Amount removed _____ ft.

Was casing driven down ward? yes no

If yes, feet below ground surface 4 ft.

Was casing Ripped or Perforated? yes no

7. WELL DATA:

Depth of well: 944 ft.

Static water level 115 ft.

Closed-in artesian pressure _____ psi.

Was well disinfected before decommissioning? yes no

If yes, type and amount of disinfectant used: _____

8. WELL LOG: Record sealing material used and depth(s)

Depth, Feet		Material type of material used to seal well (example: neat cement, bentonite chips, naturally occurring soils).
From	To	
4	944	<input checked="" type="checkbox"/> Neat Cement
		<input type="checkbox"/> High-solids Bentonite Grout
		<input type="checkbox"/> Bentonite Chips
		<input type="checkbox"/> Other (describe under remarks)

9. DATE WELL DECOMMISSIONED: Yes

10. REMARKS: Well was presser grouted from the bottom up with a 5.5 gallon to 1 bag of portland cement.

11. DRILLER/CONTRACTOR:

All work performed and reported in this decommissioning log is in compliance with the Montana well abandonment standards. This report is true to the best of my knowledge.

Name, firm, or corporation (print) RM Drilling and Well Services

Address 307 first Ave East Suite 2 Kalispell

Signature _____

Date 6/20/2025 License no. 841

License type: MWC WWC WWD

This report can be emailed to GWIC@mttech.edu, faxed to the GWIC office at (406) 496-4343, or sent to:

Ground Water Information Center
1300 W. Park St.
Butte, MT 59701-8997

APPENDIX F

ABANDONMENT, RELEASE, AND TERMINATION OF EASEMENT

Return after recording to:
F.H. Stoltze Land & Lumber
P.O. Box 1429
Columbia Falls, MT 59912

Doc Number 632251 EASEMENT
STATE OF MONTANA LAKE COUNTY
06/18/2025 02:11 PM Total Pages: 6 Fees: \$48.00
Kendra Steele, Clerk & Recorder
By ksteele

ABANDONMENT, RELEASE, AND TERMINATION OF EASEMENT

This Abandonment, Release, and Termination of Easement concerns the following-described easement (the "**Easement**"):

Declaration of Easement made by F.H. Stoltze Land and Lumber Company, a Montana corporation, dated May 26, 1987, and recorded in the records of the Clerk and Recorder of Lake County, Montana, as follows:

Recording Date: May 27, 1987
Microfilm No.: 305707

The Easement benefits and/or burdens the following described properties located in Lake County, Montana:

Lots 86, 87, 88, 89 and 90 of Swan Sites No. 1, according to the map or plat thereof on file and of record in the office of the Clerk and Recorder, Lake County, Montana.

The undersigned are the owners of all of the properties benefitted and burdened by the Easement.

For good and valuable consideration, the receipt of which is acknowledged, the undersigned do hereby abandon, quitclaim, reconvey, release, and terminate the Easement. The Easement shall hereafter be void and of no further force or effect.

[Counterpart Signature Pages Follow]

Owner of Lot 86 of Swan Sites No. 1:

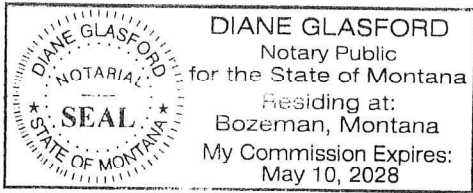
John Tetrault

John Tetrault

STATE OF MT)

County of Gallatin : SS

This instrument was acknowledged before me on Feb. 28th,
2025, by John Tetrault.



Diane Glasford

Notary Public for the State of Montana

Owner of Lot 89 of Swan Sites No. 1:

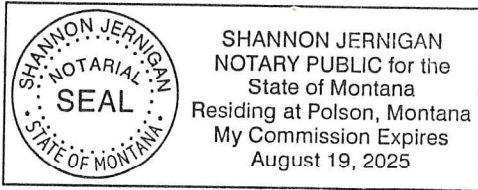
Leon V Smith

Leon V. Smith

STATE OF Montana)
County of Lake) : SS

This instrument was acknowledged before me on 2.21,
2025, by Leon V. Smith.

Shannon Jernigan
Notary Public for the State of Montana



Owner of Lot 90 of Swan Sites No. 1:

George A Dickenson

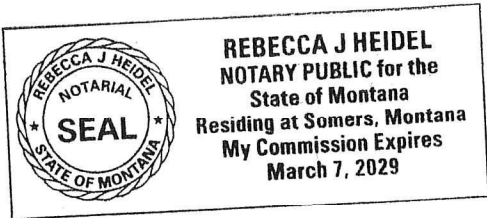
George A. Dickenson

Suzanne Dickenson

Suzanne Dickenson

STATE OF Montana)
County of Flathead) : SS

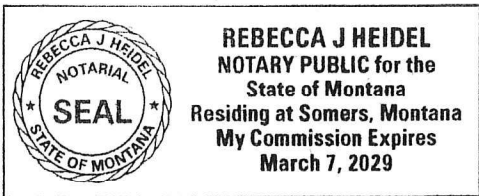
This instrument was acknowledged before me on May 9, 2025 by George A. Dickenson.



Rebecca Heidel
Notary Public for the State of Montana

STATE OF Montana)
County of Flathead) : SS

This instrument was acknowledged before me on May 9, 2025 by Suzanne Dickenson.



Rebecca Heidel
Notary Public for the State of Montana

= END =