



Paul Bosch, State President  
Steve Vaughan, Secretary

## North Dakota Elks Association

PO Box 1854, Bismarck, ND 58502-1854

June 26, 2018

I am Larry L. Larson, retired Professional Engineer, a member of the Elks, and residing in, Bismarck, ND, 58501. I serve as the Chairman of the Land and Minerals Committee of the North Dakota Elks Association (NDEA) and representing them at this hearing on the Wenck Study of the Missouri River Ordinary High Water Mark (OHWM), Case No.26584. My remarks will pertain to only that area of the Missouri River that the NDEA owns mineral acreage.

The NDEA has submitted technical responses to the Department of Mineral Resources for the areas of interest in the Wenck report. The technical response was prepared by Cary Backstrand, RPE, and a member of the Land and Minerals Committee of the NDEA. Cary was the Chief of the Regulatory Section of the North Dakota State Engineer Office for 20 years. His duties included management of the State's Sovereign Lands including leasing of the islands and determination of the OHWM. I will add the other members of the committee include another Registered Professional Engineer, a retired banker, and a mineral owner.

The mineral acres owned by the NDEA are located in Sections 22, 23, 26, 27, 30, and 31 of T153N, R98W and Section 36, T153N, R99W. These areas lie with-in the areas covered by Maps 9, 10 and 11 of the Wenck Report. These maps do not reflect the original Government Surveys or the Army Corp of Engineers Segment Maps (which are part of the report) used to purchase land for the areas to be flooded by Lake Sakakawea created by the construction of the Garrison Dam. The other issue addressed is the inclusion of the flood plains that do not meet the definition of the OHWM. We feel these are major errors in the Wenck Report in the area of the Missouri River the NDEA has a vested interest in as a mineral owner.

The desirable outcome for the sovereign lands boundary question is for the NDIC in approving the Wenck Report, results in oil companies releasing royalty payments from suspense. Unfortunately, that is unlikely to happen given the weaknesses in the current review. Mineral owners' conveyance instruments contain legal descriptions based on Government Land Office surveys, the basis for land patents. The GLO survey needs to be geo-referenced to the OHWM delineation maps or photos. Further, uniformity in accretion/reliction methods will be needed to eliminate even more errors being created.

We support the technical comments submitted by the North Dakota Society of Professional Land Surveyors on the Wenck Report. It gives the technical side of the error of not recognizing the GLO Plats, the Segment Maps, and other data of the Corp of Engineers and other legal sources.

Respectively,

Larry L. Larson, Chairman  
NDEA Land and Minerals Committee

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

DATE 6-26-18 CASE NO. 26584  
Introduced By Larry Larson  
Exhibit 1  
Identified By Larry Larson



North Dakota Society  
of Professional Land Surveyors

Comments and Concerns Regarding the  
Delineation of the OHWM




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**Our Mission Statement**

- To unite all the professional land surveyors in the State of North Dakota.
- To **elevate the standards** of the surveying profession in the State of North Dakota.
- To **establish basic minimum requirements** for surveys.
- To **assist in promoting legislation** and education programs to improve the professional status of the land surveyor.
- To **work in cooperation with local, county, state, and federal governments** in our field of endeavor.
- To **uphold a rigid code of ethics**.
- To **strive to improve our relations with our clients and the public** by doing our work with precision and integrity.
- To maintain a good relationship between land surveyors and engineers.




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**Interest in the Report**

- The NDSPLS has no financial interest in the outcome of the report.
- The only concern is that the work performed complies with the rules, regulations, and accepted standards for land surveying.




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INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA  
DATE 6-26-18 CASE NO. 26584  
Introduced By Aaron Hummert  
Exhibit 1  
Identified By Aaron Hummert

### Concerns with Tract Boundaries

- Additional sources of information
- Methods used to geo-reference the tract boundaries
- Refinements to the tract boundaries
- Recommendations



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### Additional Sources of Information

- General Land Office (GLO) Plats and Field Notes
- Corps Taking-Line Plats
- Well Plats
- Other Sources



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### GLO Plat



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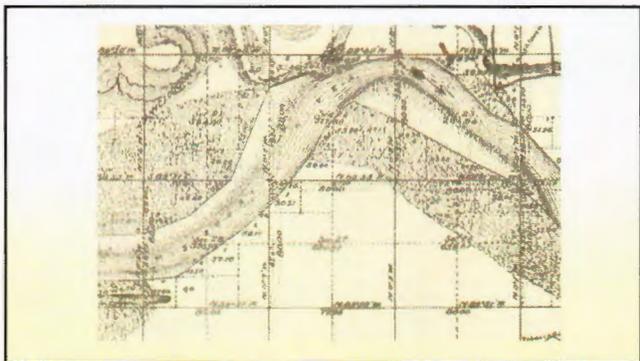
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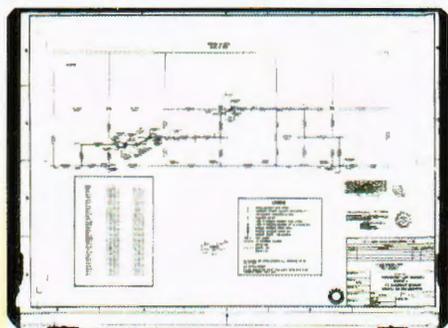
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CORPS  
Take-Line  
Plat



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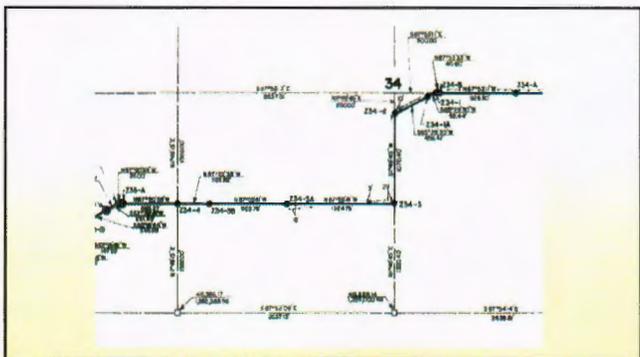
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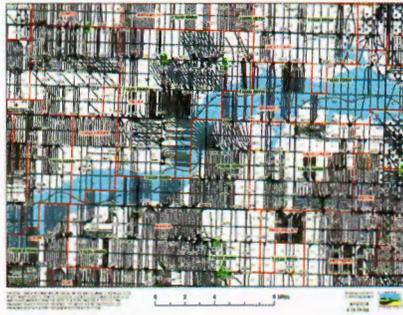
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Well Plats



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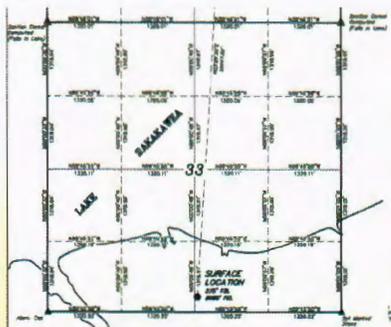
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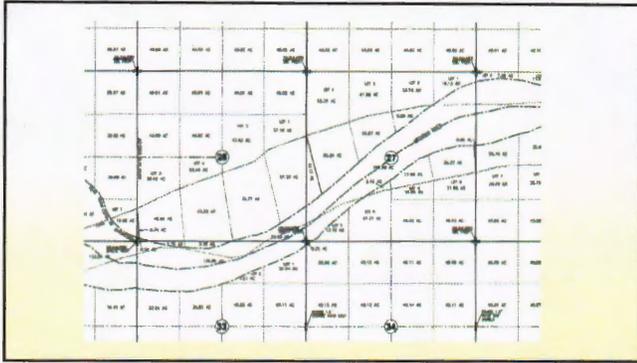
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### Concerns Regarding Acreages

- Legal Descriptions – no reference to the government lots
- Proper Partitioning of Accreted Lands
  - Proportionate Shoreline Method
  - Proportionate Acreage Method
  - Perpendicular Method
  - Extension of Property Line Method
  - Combination of Proportionate Shoreline and Perpendicular Method
  - Must review GLO data to know the original shoreline and original lot areas
- Calculated acreages based on improper location of PLSS lines



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### How to Retrace Report?

- The end use of the data
  - How is a surveyor supposed to use the data to accurately locate the OHWM on the ground or on a plat?



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### Concerns Regarding Land Surveying Laws

- NDCC 47-02.2-04 – Plane Coordinates
  - Adequate reference to datum
  - Coordinates to be recorded in any public records need to be tied to ground control.
  - Coordinate values used in land descriptions to be certified by a duly registered land surveyor



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### Concerns Regarding Land Surveying Laws

- NDCC 43-19.1-02.11 and NDCC 43-19.1-21
  - Report needs to be sealed and signed by the individual(s) in responsible charge of the project.
  - No surveyor appears to have been involved with the preparation and review of the report.



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### Concerns Regarding Land Surveying Laws

- NDCC 43-19.1-02.8 – The Definition of Land Surveying
  - NDSPLS believes that many of the items addressed in this report fall under the definition of land surveying and should be reviewed by a duly registered North Dakota land surveyor.



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Questions?



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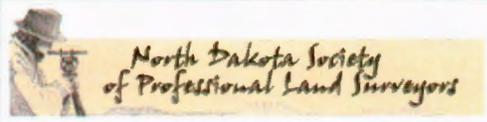
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Thank you



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**NORTHERN OIL AND GAS  
COMMENT**

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

DATE 6-26-18 CASE NO. 26584

Introduced By Swartzendruber/Imse

Exhibit 1

Identified By Swartzendruber/Imse

BEFORE THE INDUSTRIAL COMMISSION  
OF THE STATE OF NORTH DAKOTA

CAUSE NO. 26584

IN THE MATTER OF A HEARING CALLED  
ON A MOTION OF THE COMMISSION TO  
CONSIDER PUBLIC COMMENTS ON THE  
REVIEW OF THE DELINEATION OF THE  
ORDINARY HIGH WATER MARK OF THE  
USE ARMY CORP OF ENGINEERS SURVEY  
SEGMENTS FROM THE NORTHERN  
BOUNDARY OF THE FORT BERTHOLD  
INDIAN RESERVATION TO THE SOUTHERN  
BORDER OF SECTIONS 33 AND 34, TOWNSHIP  
153 NORTH, RANGE 102 WEST

**Public Comment of Northern Oil and Gas, Inc. ("Northern")  
on the Ordinary High Water Mark of the Missouri River Bed Pre-Garrison Dam  
for the Reach Extending Approximately 83 Miles Upstream of New Town, ND**

Northern holds oil and gas leasehold interests from the State of North Dakota, Department of Trust Lands, covering all or a portion of the lands identified below and is therefore a party interested in these proceedings:

- (1) T153N-R93W, NW ¼ and NE ¼ of Section 27; and
- (2) T153N-R98W, SW ¼ of Section 12.

Northern intends to present its comments at the hearing held on June 26, 2018 through John P. Imse, RG, Principal Consultant at Environmental Resources Management (ERM) and its undersigned legal counsel. Mr. Imse's CV is submitted herewith as Exhibit A.

**Comment 1**

Focus of Comment: T153N-R93W, NW ¼ and NE ¼ of Section 27

The current delineation of the Ordinary High Water Mark (OHWM) for the Missouri River bed at the above-referenced location, as presented in the Department of Mineral Resources (DMR) project report prepared by Wenck Associates, Inc. in their report dated 17 April 2018 (Wenck 2018), does not accurately reflect the technical data presented in Wenck 2018, does not accurately reflect the appraisal data for the area in question, and does not correctly apply land use exclusions. The delineation presented in Wenck 2018 is a result of an overly broad application of exclusions applied to the technical analysis, based on a narrow and incorrect application of North Dakota case law.

The available technical data, the appraisal information for the area in question, land use, and relevant case law in this context support, with clear and convincing evidence, maintaining the Department of Mineral Resources 2011 delineation of the OHWM in the above-referenced section.

Basis for Comment:

The Wenck 2018 analysis of the OHWM began with compilation and analysis of publicly available topographic data and river flow data for the channel prior to the impoundment filling. Those data were used to develop a model allowing the prediction of the water level for an approximate 2.5-year flood event throughout the studied reach. Wenck 2018 compared the predicted flood water level to the topographic data at each of nineteen (19) topographic cross-sections previously established across the Missouri River channel (Figure 8, Wenck 2018). Profile section 1567.2, as shown on the referenced Figure and on Map 2 of 18 in Wenck 2018, is immediately northwest of the referenced area. The topographic profile for cross-section 1567.2 presented with the model-derived 2.5 year flood water level are plotted on a figure titled “US ACE Section 1567.2”, as included in Appendix D to Wenck 2018. That figure illustrates that most of the land inside the bend in the Missouri River in that reach would have been inundated by each 2.5-year flood event. Those data and the model analysis are consistent with the findings of the prior DMR analysis (Bartlett & West 2011) in which the lands and vegetation in the above-referenced area were classified as “caused by backwater flooding” (Bartlett & West, 2011, Table page 7 of 9, ObjectIDs 325-329).

Wenck 2018 states that they also evaluated appraisal documents that were prepared by the US Army Corps of Engineers (USACE) prior to purchasing those lands for the impoundment of the Missouri River. Appraisal V 1928 (REF), submitted herewith as Exhibit B, was prepared for lands along the northern boundary of Section 27, referenced above, as well as lands in the adjacent and contiguous sections to the north, northeast, and east. The appraisal refers to the soil type on the tract as consistent with recent accretion (sandy clay loams and riverwash sands, similar to the above interpretations of the area as susceptible to flooding), and not suitable for commercial agriculture, but possibly suitable for occasional haying of native grasses or periodic grazing. The appraisal states that the referenced lands are “low level bottomlands.” The appraisal did note that two areas (apparently in separate locations) had been cleared for future use. The appraisal concludes, “This is a mediocre property, but when utilized in conjunction *more dependable lands* [emphasis added] it will provide summer grazing...” In other words, all or a vast majority of the surveyed acreage is not dependable for agricultural use and does not have substantial value independent of more productive contiguous tracts

After identifying those areas that would have been inundated by the 2.5 –year flood event, and in conjunction with reviewing the available appraisal documents, Wenck 2018 examined a series of aerial photos taken in 1951 to further refine the delineation of

the OHWM. Map 2 of 18 in Wenck 2018 presents their delineation of the OHWM relative to the earlier USACE determination covering the above-referenced portion of Section 27. A portion of the above-referenced area of interest is designated for inclusion below the OHWM – however, not to the extent that those areas were included within the 2011 DMR determination of the OHWM (Bartlett & West, 2011). No explanation for the difference is provided in Wenck 2018.

On examination of Map 2 of 18 in Wenck 2018, there are two small areas that appear white or reflective, one in the NE  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Section 27, and the other in the NW  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  of Section 27. These areas appear to be cleared of vegetation. Figure 1, attached, is a portion of the 1951 aerial photograph that was used as part of the base for Map 2 of 18, enlarged to focus on Section 27. The “cleared” areas discussed above are readily apparent. However, there is no indication of any pattern in the cleared areas that may indicate any type of agricultural cultivation. It is conceivable that these open areas are those mentioned in Appraisal V 1928, and are those areas that are only noted in the appraisal as sometimes suitable for grazing when used in conjunction with “more dependable lands”.

Attached as Figure 2 is the 1943 aerial photograph, also provided by DMR for use in developing Wenck 2018, enlarged to focus on the above referenced Section 27. As an example of un-sustained land use, there is a cleared area present in the NE  $\frac{1}{4}$  of the NW  $\frac{1}{4}$  of Section 27 that has reverted to overgrown conditions in the 1951 aerial photograph. The rectangular cleared area in the NW  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  of Section 27 appears to be outlined in pencil and is larger and shaped differently than in 1951. As noted with respect to the 1951 aerial photograph, there are no crop patterns evident on the 1943 aerial photograph in the cleared areas that would indicate usage other than grazing. It also is important to note the flood channel with open water present in the SW  $\frac{1}{4}$  of Section 22 – just to the north of the area in question. The channel orientation appears to line up with the rectangular cleared area in the NW  $\frac{1}{4}$  of the NE  $\frac{1}{4}$  of Section 27 – indicative of that cleared area likely serving as an outlet for floodwater from the areas to the north.

Figure 3, attached hereto, is a portion of the 1943 topographic map for the area covered by Figures 1 and 2. The pattern of the contour lines within the indicated area on Figure 3 clearly demonstrates that the cleared area visible at this location on the 1943 and 1951 aerial photos is in fact an outlet channel for floodwaters draining from the lands to the north. This cleared area would therefore be inundated during the 2.5 year flood event and would serve as a flow channel for drainage of floodwaters – compromising the ability of the land to support any “dependable” usage. That would also be consistent with the appraisal V 1928, discussed above, indicating the lands would be suitable for grazing only if used in conjunction with “more dependable lands” - grazing lands inundated less frequently would meet the description of “more dependable”.

Figure 4, attached, presents a comparison of the findings from Wenck 2018 to the delineation developed and relied upon by DMR (Bartlett & West 2011) since 2011 for the above-referenced portions of Section 27. There is no disagreement between the two studies regarding whether the area in question was subjected to frequent flooding. The same appraisal report, V 1928, was available to both sets of investigators. That leaves the only possible discrepancy as the interpretation of land use and its significance. Wenck 2018 categorically excludes “farmed and hayed areas” (Section 2.1 of Wenck 2018), without regard to whether the farming practices were grazing only, or where haying was of a lesser quality due to a preponderance of native grasses and frequent inundation. Wenck 2018 reportedly based this bright-line exclusion on a review of relevant case law.

The OHWM is defined as “that line below which the action of water is frequent enough to either prevent the growth of vegetation or to restrict its growth to predominantly wetland species.” N.D. Admin. Code. § 89-10-01-03.7. The North Dakota Supreme Court has said,

“High-water mark” means what its language imports – a water mark. It is co-ordinate with the limit of the bed of the water; and that only is to be considered the bed which the water occupies sufficiently long and continuously to wrest it from vegetation, and destroy its value for agricultural purposes. In some places, however, where the banks are low and flat, the water does not impress on the soil any well-defined line of demarcation between the bed and the banks.

In such cases the effect of the water upon vegetation must be the principal test in determining the location of high-water mark as a line between the riparian owner and the public. It is the point up to which the presence and action of the water is so continuous as to destroy the value of the land for agricultural purposes by preventing the growth of vegetation, constituting what may be termed an *ordinary* agricultural crop.

*State ex rel. Sprynczynatyk v. Mills*, 593 N.W.2d 591 (1999), (citing 423 N.W.2d at 144-45 (quoting *Rutten v. State*, 93 N.W.2d 796,79 (N.D. 1958)(emphasis added)).

Thus, the principal test for determining the OHWM in situations like the current one is the productivity of the lands for “ordinary” agricultural crops (*i.e.*, grown regularly for commercial purposes). As N.D.C.C. § 61-33.1-03 states, “[l]ands having agricultural value capable of *growing* crops or hay, but not merely intermittent grazing or location of cattle, generally must be considered above the ordinary high water mark.” Conversely, lands not capable of “growing” crops due to frequent inundation or infertile soils are below the OHWM. Lands where the owners occasionally grazed cattle or cut hay when they were not flooded, without intentionally growing the crop, cannot be considered above the OHWM.

Wenck 2018 references *In State ex rel Sprynczynatyk*, 1999 ND 75. There, the North Dakota Supreme Court affirmed the Burleigh County District Court's determination of the OHWM. The lower court considered the following evidence in delineating the OHWM (generally centering around "agricultural usefulness," as discussed below):

- Growing of crops on the property (*i.e.*, seeding, tilling, irrigating, etc. – not "native" crops) (p. 7, at lines 6-7)
- Sandy gray soils/soil quality, soil stratification indicative of frequent flooding (p. 7, at lines 4-5)
- The location of upland plants and trees/tree lines (p. 7, at line 6)
- An inability to use the land dependably for productive purposes (p. 8, at lines 17-24)
- Whether the land is classified as floodplain (p. 7, at line 22)
- Whether the water table is close to the surface/whether the soils are often saturated (p. 7, at line 23)
- Difficulty in installing or maintaining fencing (p. 8, at line 21)
- An absence of usual "pasture grasses" (p. 8, at line 8)
- An absence of row crops (*i.e.*, "ordinary" crops) (p. 8, at line 9)
- An inability to include the land in a farm plan or loan against it (p. 8, at line 27)
- Frequency of flooding (p.7, at line 14)
- Remarkable elevation changes (p. 9, at line 7)

(All pinpoint cites are derived from *Wenck Report*, Appendix B: *In State ex rel Sprynczynatyk*, 1999 ND 75, (Memorandum Decision & Order))

Notably, the trial court in *Sprynczynatyk* said that occasional haying is insufficient to find that lands are above the OHWM. There, the evidence showed that the lands ultimately found to be below the OHWM were hayed at least one year. Similarly, grazing is not determinative. The court said, "The evidence indicates that the area immediately adjacent to Riverwood Drive on the west side was hayed one year, but that alone would not suffice to change the result. The term 'ordinary agricultural crop' . . . requires a greater showing . . . usefulness for livestock is not determinative of the issue [and] . . . one instance of haying " is insufficient. (*Id.* p. 8, at lines 21-23).

Simply put, the location of the OHWM is defined by agricultural usefulness. Agricultural usefulness is coordinate with "ordinary agricultural crop" which includes an element of commerciality. The term "ordinary agricultural crop" has been defined in the Code of Federal Regulations as

[A]ny agricultural product to which the land under consideration is generally adapted, and which would return a *fair reward for the expense of*

*producing them.* Ordinary agricultural crops do not include forest products but may include orchards and other plants which cannot be grown on the land without irrigation and from which a *profitable crop* may be harvested.

43 § C.F.R. 2610.0-5(g)(cited by Rinke Noonan 2018)(emphasis added).

The *Spryncznatyk* court determined that the OHWM is “ambulatory”, and “is not determined as of a fixed date.” *Sprynczynatyk*, p. 8, at line 20. The land must have “economic usefulness.” *Id.*, p. 8 at line 18. Were the standard to be otherwise, *any* existence of haying (commercial or non-commercial) would be sufficient to find an agricultural purpose, the court would have ruled to the contrary.

Based on the legal standards cited above and the associated technical analysis, the evidence leads to a firm belief or conviction that the referenced lands are below the OHWM. *Zundel v. Zundel*, 278 N.W.2d 123 (1979). The only apparent difference between the DMR delineation in 2011 of the OHWM in the referenced portions of Section 27, and the delineation of the OHWM in the same area presented in Wenck 2018, is the overly broad land use exclusion applied by Wenck 2018 that is not supported by case law in this regard. Evidence of occasional haying or grazing is not sufficient. Therefore, the delineation of the OHWM in T153N-R93W, NW ¼ and NE ¼ of Section 27 should remain as determined by DMR in 2011 and as maintained by DMR since that time.

## Comment 2

Focus of Comment: T153N-R98W, SW ¼ of Section 12

Basis for Comment:

As illustrated on Figure 5, the Wenck 2018 delineation of the OHWM in the above-referenced section differs from the prior DMR determination (Bartlett & West, 2011) of OHWM through that section. Wenck 2018 indicates on Map 9 of 18 that the OHWM was placed on the edge of the channel as it existed in 1951. This delineation differed from the USACE delineation due to movement of the channel during the years between 1943 (the date of photos used by USACE) and the 1951 aerial photos relied upon by Wenck 2018. The prior DMR determination (Bartlett & West, 2011) utilized the same 1951 aerial photos, and ObjectIDs 185 and 186 located along this reach contained the following qualifier when referring to the main channel: “old river channel above” (ObjectIDs 185 and 186, table page 3 of 9, Bartlett & West, 2011). Mr. Imse attempted to contact the DMR contractor for the 2011 delineation, Bartlett & West, to obtain clarification or supporting technical evidence for their determination. As of the date of this submittal, Bartlett & West has not responded to the inquiries. Given that Wenck 2018 did not consider the previous DMR determination in its analysis and delineation, resolution of this discrepancy will require input from the prior DMR contractor or the results of an independent analysis. Northern reserves its right to present evidence and

argument concerning the location of the riverbed for the above referenced lands based on additional information from Bartlett & West (or otherwise).

### **Comment 3**

#### Procedural Comment

The process of implementing N.D. Cent. Code § 61-33.1-03 is an adjudicative proceeding. See N.D.C.C. § 28-32-01. The procedural statutes pertinent to adjudicative proceedings state:

To the extent necessary for full disclosure of all relevant facts and issues, the person presiding at the hearing shall afford to all parties and other persons allowed to participate the opportunity to respond, present evidence and argument, conduct cross-examination, and submit rebuttal evidence, except as restricted or conditioned by a grant of intervention or by a prehearing order.

N.D.C.C. § 28-32-35.

Northern, as a party holding over 142,250 net leasehold acres in the Williston Basin and over 3,700 Bakken/Three Forks wells, has a significant interest in responding to comments that potentially affect the location of the OHWM for river segments where Northern holds its interests. At this juncture, Northern's comments necessarily address only those locations impacted by the Wenck 2018 report. Northern is concerned that it will not have an adequate opportunity to respond to comments of other parties which, if accepted, would result in significant acreage losses. The process to date in this cause provides only six (6) days to potentially address adverse comments. Northern respectfully submits that this is not adequate, and that the parties should be given a second opportunity to submit responsive comments to the NDIC after a reasonable time period, with a corresponding hearing for live presentation of the responsive comments. Northern believes that this is the only manner by which the statute referenced above (and due process) may be satisfied.

Northern is appreciative of the opportunity to submit these comments, and looks forward to presenting its evidence, argument and technical analysis to the NDIC.

Dated: June 20, 2018



By: \_\_\_\_\_  
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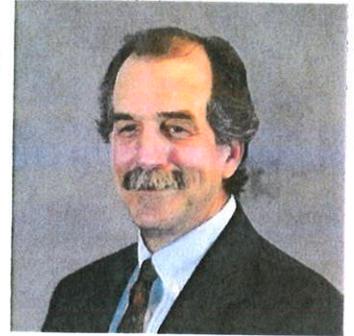
Attorneys for Northern Oil and Gas, Inc.

**EXHIBIT A**  
**JOHN IMSE CV**  
**(Expert Testimony)**

## John P. Imse, RG

Principal Consultant

John has experience focusing on the geologic and hydrogeologic evaluation of complex site settings (e.g., fractured bedrock, karstic bedrock, glacial sequences, alluvial sequence) to delineate potential sources of impact, to characterize the extent and severity of that impact, and to assess the fate and transport of that impact. John's experience includes Merger & Acquisition projects, CERCLA and RCRA site project management, regulatory agency negotiation, state voluntary investigation/remediation programs, risk-based corrective action, private party allocation negotiations, litigation support, and expert witness testimony. Litigation support and Expert testimony includes NCP consistency, State regulatory consistency, insurance cost recovery, toxic tort, allocation of liability, appropriateness and effectiveness of remediation technologies, and state of the practice field data acquisition.



**Experience:** 35 years' experience in chemical, manufacturing, mining, and oil and gas

**Email:** [john.imse@erm.com](mailto:john.imse@erm.com)

**LinkedIn:** <https://www.linkedin.com/in/john-imse-6678b214/>

### Education

- M.S. Geology, Idaho State University, Pocatello, ID, 1979
- B.A. Geology, Lawrence University, Appleton, WI, 1976

### Professional Affiliations and Registrations

- National Groundwater Association
- American Institute of Professional Geologists
- Registered Professional Geologist: Missouri, Wisconsin, Minnesota, Indiana, and Kansas

### Languages

- English, native speaker

### Fields of Competence

- Land pollution control
- Geologic and hydrogeologic evaluations
- NAPL
- CERCLA and RCRA

### Key Industry Sectors

- Chemical
- Manufacturing
- Mining
- Oil and Gas

## Key Projects

### Site Permitting Experience

#### Utility-Scale Solar Project

Conducted a water demand and availability assessment for a planned solar facility in eastern Colorado located in a historically over-allocated water basin. Evaluated the following: permitting for a large volume water well; purchase of water from area agricultural water rights owners; and purchase of water from multiple municipal and county water owners/users. In all cases, analyzed various on-site storage facilities to accommodate the source of the water and the peak demands for water usage during site development and construction.

#### NEPA-compliant Environmental Assessment

Completed the assessment for a proposed wind power generating facility in northeastern Colorado, including water demand assessment; water rights purchases; geological/hydrogeological studies; wildlife and wildlife habitat surveys; and archaeological surveys. Site received finding of no significant impact from the U.S. Department of Energy mitigating the need for a complete environmental impact assessment.

#### Geologic/Geophysical Studies

Completed studies (site specific ground based and regional airborne investigations) to support a nuclear power plant siting efforts for private utility power plants proposed for the Hanford Reservation in Washington.

#### Geophysical Studies

Evaluated potential earthquake mechanisms and locations in the northeastern U.S. in support of licensing projects for multiple nuclear power plants.

#### Geologic Mapping

Mapped in the epicentral area for an earthquake swarm in New Brunswick, Canada to evaluate potential surface ruptures resulting from earthquake

ground motions. This effort was part of a regional study evaluating the adequacy of design for nuclear power plants in the northeastern U. S.

**Consultant/U.S. Nuclear Regulatory Commission**  
Evaluated proposed geologic waste repository sites in basalt, bedded salt, salt dome, and crystalline rock terranes.

#### Siting Project

Conducted activities for a New England utility to locate and test potential geologic ground electrode sites as a part of planning for the construction of power transmission lines from Canada to the U.S.

#### Hydropower Dam

Evaluated the potential low-head dam location in New York.

#### Slope Stability Evaluation Studies

Supported permit renewal for a pump storage power generation facility in western Massachusetts.

#### Litigation Support/Expert Testimony Experience

##### Private Party Litigation

Completed the site investigation, prepared the expert report, and provided expert testimony (NCP compliance and allocation) related to historical operations at a paint manufacturing facility in Indianapolis, IN. Identified the nature and extent of impact at the site. Focused on identifying, to the extent practicable, differences in site operations, product lines, and formulations between client and the former owner/operator. In the allocation portion of the project and testimony, focused on distinguishing relative contribution to the impact by the parties; the volume of waste released by the parties; variations in product lines and paint formulation as it would affect a determination of the toxicity of the waste released by the parties; and the degree of care exercised by the parties in conducting operations at the facility. Other factors weighed as a part of the allocation included years of ownership/operation and the

relative degree of control and procedures implemented by the parties with respect to waste handling and management.

**Major Independent Natural Gas Producer**

Evaluated and assessed the categorical RCRA exemption for oil and gas exploration and production waste. Included a detailed analysis of the original basis for the exemption and the potential impact technically and financially, if USEPA were to remove that exemption.

**Natural Gas Industry Trade Association**

Provided expert review and comment on published documents relevant to development and production of natural gas from tight geologic formations.

**Civil Case Litigation Support/Expert Testimony**

Focused project work and expert testimony on design and implementation of sampling protocol as state of practice.

**Litigation Support/Expert Witness**

Supported a civil case representing property owner with respect to site contamination and remediation attributable to prior tenant of the property. Evaluated extent and magnitude of impact and the efficacy of the chosen environmental response action.

**Litigation Support/Insurance Cost Recovery**

Source of impact was catastrophic release of petroleum hydrocarbons as a result of explosion and fire at aboveground storage tank facility. Technical support for litigation included prediction of karst solution pathways in bedrock as part of evaluation of fate and transport of released hydrocarbons.

**Expert Witness/CERCLA Cost Recovery**

Served as expert witness in a case related to an industrial facility in Indiana. Focused testimony on fate and transport of chlorinated solvents in groundwater, potential for vapor intrusion of chlorinated solvents into structures resulting from the impacted groundwater, and an evaluation of prior

investigations with respect to consistency with the National Contingency Plan.

**Expert Report/Testimony**

Served as expert witness in an insurance recovery case on behalf of industrial facility located in Joplin, Mo. Testimony included identification of insurable event as source of groundwater impact; evaluation of DNAPL migration through fractures in unconsolidated clay that were the result of dissolution of underlying bedrock; groundwater transport in fractured and karstic bedrock from source area to residential wells; and timing of the onset of impact.

**Litigation Support/Expert Testimony**

Supported and testified in a toxic tort case filed against client with a facility in Joplin, Mo. Included identification of source; fate and transport of the contaminants through fractured clays and karstic bedrock to residential well exposure points; timing of the onset of exposure; and magnitude of impact during the period of exposure.

**Expert Report/Testimony**

Reported and testified in a private party litigation related to the investigation and remediation of contamination resulting from historical operations at an electronics assembly plant in Milwaukee, WI. Focused on standard of care for investigation and remediation activities.

**Private Party Litigation**

Provided litigation support in a case related to historical operations, waste management practices, investigations, and remediation at a research and development facility in North Carolina. Focused on standard of practice during prior site investigations and response actions, and allocation of responsibility for identified groundwater impact in a fractured bedrock aquifer. Case was settled prior to preparation of expert reports or testimony.

### **Fact Witness**

Provided testimony as a fact witness in support of a former owner of an industrial facility in Chamblee, GA, regarding conditions at the site and the potential/likelihood that subsequent owner/operator was responsible for bulk of groundwater impact requiring corrective action. Client was successful in receiving federal court judgment allocating minor cost share for cleanup.

### **Mine and Mining Related Experience**

#### **Geomorphology Analysis**

Served as the Lead Technical Investigator analysis for proposed expansion areas of an active coal mine operation in Montana. Analysis was a component of baseline studies required to allow the MDEQ to make a determination with respect to the presence or extent of alluvial valley floor (AVF) conditions within the proposed permit areas, as well as downstream from the boundaries of those permit areas.

#### **Industrial Mineral Quarry Operation**

Managed and led the investigation for an operation in Missouri. Retained in anticipation of litigation. Evaluated historical underground mining operations on the property using available maps of underground workings; the effect of surface water bodies, net annual infiltration, and groundwater discharge on the availability of groundwater in the mine for the quarry operations; and the possible impact of municipal water supply well (completed within historical underground mine) production on availability of groundwater beneath the quarry property.

#### **Phosphate Mine**

Managed and investigated the mine in southeast Idaho. Issues at the site included both surface water and groundwater impact attributable to closed portions of the mine, portions undergoing closure, and an active operating area. Evaluated surface water/groundwater interaction at the site and source(s) of impact. Developed potential response actions. Significant results of the effort were to

determine the primary source of impact (waste rock piles) and recommended response, and to capture and utilize the reducing conditions within the groundwater system to take advantage of MNA.

#### **Abandoned Mine**

Evaluated the mine in southern Arizona. Retained by the owner to evaluate continued mineral processing on site by adjacent mine operator, identify and allocate groundwater impact between owned site and adjacent operating mine, and identify significant issues that may impact development of the property.

#### **Groundwater Impact**

Analyzed impact attributed to historical mining and processing operations in the Tri-State Mining District of Oklahoma, Kansas, and Missouri. Assessed the impact potentially attributable to historical mining operations, and impact attributable to naturally occurring conditions in the regional lead-zinc mining district.

#### **Superfund Site**

Evaluated surface water and groundwater impact of a fractured rock setting in Joplin, MO. Assessed the impact (chemical and hydraulic) attributable to existing manufacturing facilities, historical mining and processing facilities, and naturally occurring conditions.

#### **Potential Natural Resource Damages**

Evaluated damages related to surface water and groundwater impacts attributable to mining and processing operations in the Viburnum Trend Lead Belt of southeastern Missouri.

#### **Merger and Acquisition/Due Diligence**

#### **Midstream and Downstream Oil and Gas Client**

As part of a merger of two midstream/downstream oil & gas companies, retained to assist the entities in establishing environmental reserves for the newly formed company. The assets evaluated for the process included 3 refineries, 3 storage terminals

and approximately 350 miles of gathering and transmission pipelines.

#### **Underground Trona Mine**

On behalf of the eventual buyer, assessed the environmental conditions, including threatened and endangered species and surface water rights, for a large mine in southwest Wyoming.

#### **Due Diligence**

Managed a multi-site effort. As a part of a large merger, the two entities were required to divest 22 aluminum can manufacturing plants in Europe, South America, and the United States. Represented both parties in providing "Sellers" due diligence services as a part of the divestiture process.

#### **Natural Resource Damages Experience**

##### **Individual PRP**

Managed and investigated an individual PRP related to NRD claims resulting from an operating mine and smelter in the Viburnum Trend Lead Belt of southeastern Missouri.

##### **Natural Resource Damage Settlement**

Negotiated a settlement for a Superfund site located in southwestern Missouri. Negotiations were directly with Missouri DNR staff and eventual sign-off from Washington, D.C. Focused on loss of usage of groundwater resource. Analysis and negotiations incorporated prediction of onset of impact, statistical analysis of number of potential users over time, and existing background conditions in the aquifers of the region.

##### **NRD Analysis**

Investigated for an NRD analysis related to potential damages to groundwater in southwest Missouri, southeast Kansas, and northeast Oklahoma related to historical mining and smelting operations in the Tri-State Mining District. Incorporated loss of use for the groundwater and naturally occurring conditions in the regional lead-zinc mining district.

#### **Site Investigation/Remediation Experience**

##### **Remediation System Performance**

Evaluated the performance and interpreted site investigation data for a former manufacturing facility on Long Island. Retained by respondents responsible for off-site groundwater evaluation and remediation. Respondents completed the investigation and remediation, if necessary, under the oversight of New York State Department of Environmental Conservation and the Suffolk County Health Department.

##### **Redevelopment Project**

Managed and investigated the environmental due diligence activities and provided management planning support for a project at the former Fitzsimons Army Medical Center in Aurora, CO. In addition to completing necessary investigations and reviews to meet the requirements of All Appropriate Inquiry, assisted the client in developing a comprehensive GIS database for historical facilities on the property including buildings and all subsurface utilities. Established a secure web-hosted map server enabling client access to all current work product.

##### **Brownfield Redevelopment Site**

Managed and investigated a site in Denver, CO. Evaluated the facility, formerly used for manufacture of lead-acid batteries, drive belts, and luggage, for soil and groundwater contamination and the potential impact on redevelopment of the site for both residential and commercial uses. Assessed the extent of lead dust and asbestos in the structures, and the potential for volatile organic vapors within the structures resulting from groundwater impacted with chlorinated solvents.

##### **Environmental Due Diligence Review**

Reviewed compliance for multiple landfill and waste-transfer locations for a Colorado-based solid waste disposal company.

### **Industrial Facility**

Completed a comprehensive investigation of TCE and other volatiles in soils and groundwater for a facility in Joplin, MO. Contaminants of concern were chlorinated solvents, and DNAPL was present in the source area with subsequent migration of DNAPL through fractures in clay deposits to the underlying aquifer. Completed remedial investigation and feasibility study of the fractured bedrock aquifer supporting monitored natural attenuation as the proposed remedial response for the site.

### **SRP Investigation**

Managed and completed the investigation at a specialty jewelry manufacturer in Illinois. Primary constituents were chlorinated solvents. Sampled ambient air in basements and confined spaces of residences to support a risk assessment to evaluate appropriate interim and final response actions.

### **Soil/Groundwater Impact Evaluation**

Represented the seller in the evaluation at an industrial site in Iowa. Based on a risk-based corrective action analysis, the seller obtained a No Further Action letter from the Iowa DNR, enabling sale and redevelopment of the property.

### **Remedial Investigation/Feasibility Study (RI/FS)**

Managed and investigated a site, located in Muskegon, MI, that was a former solvent recycling and incineration facility. Negotiated the Consent Order, implemented the soil and groundwater investigation, interpreted site investigation data, completed a risk assessment, developed feasible alternatives for remediation of the site, negotiated with MDEQ and USEPA for surface water/sediment studies, and provided a technical review (on behalf of the PRPs) for USEPA studies (conducted by staff from the Kerr Research Center in Ada, OK) regarding monitored natural attenuation.

### **Remedial Investigation**

Implemented the investigation of an Oil NPL site in Lemont, IL. Soil and groundwater impact (PCBs,

aromatic hydrocarbons, and chlorinated solvents) was a result of historical recycling and storage activities. LNAPL was present in the unconsolidated sediments beneath the site and extending off-site beneath adjacent residential/commercial properties. Dissolved phase impact was present in unconsolidated sediments and a fractured limestone aquifer. Assessed potential impact resulting from bedrock aquifer discharge to nearby surface water.

### **Primary PRP Representation**

Represented for a farm site in Byron, IL. Evaluated removal activities conducted by the PRP and their beneficial effect on soil and groundwater conditions; characterized and assessed the impact from historical disposal operations conducted prior to PRP purchase; assisted legal counsel in preparation of case for divisibility of farm impact resulting from the adjacent NPL site; assisted legal counsel in preparation of documentation supporting innocent purchaser buyout for environmental liability at the site. Completed well installation and investigation of contaminant fate and transport in fractured bedrock.

### **Due Diligence Evaluation**

During the course of an evaluation of an industrial facility in northern Illinois, discovered a burial location for drums and a former transport tanker for product and solvent wastes. Waste materials were primarily aromatic hydrocarbons. Investigated delineated extent of residual soil and groundwater impact subsequent to exhumation and off-site disposal of drums, tanker trailer, and contents. Designed and permitted groundwater extraction and discharge system (discharge without treatment to local POTW) with resultant receipt of no further remediation determination from the IEPA.

### **Industrial Facility**

Investigated soil and groundwater impact providing the basis for identifying impact resulting from materials management/handling within a plant, as divisible from impact resulting from disposal practices in a former tail-race used to provide power for the

facility. Developed conceptual design and implemented containment remedy for historical disposal operations in tail-race.

#### **Soil/Groundwater Impact**

Investigated impact at a manufacturing operation in Nebraska. Identified occurrence of buried stream channel sediments within the unconsolidated glacial deposits at the site. The stream sediments served as preferential flow and migration pathways in the overburden. Analysis provided the basis for establishing source areas, as well as the basis for a determination of the extent of offsite impact.

#### **Coke/Coking By-product Facility**

Investigated the facility in Tennessee.

#### **Manufacturing Operations**

Evaluated the development of operations at the site (including U.S. ownership during WWII), and an assessment of waste handling practices. Demonstrated limits of groundwater impact in the fractured rock aquifer attributable to the facility. Determined that neither facility materials handling nor migration of materials in surface water/groundwater could produce observed impact in the nearby stream.

#### **Chemical Plant Site Investigation**

In anticipation of litigation, investigated a chemical plant in Louisiana. Client purchased the facility in bankruptcy and investigation served as baseline assessment and due diligence prior to start of operations. Focused activities on the adequacy of prior site characterization and establishing baseline conditions for liability and divisibility impact.

#### **RCRA Facility Assessment**

Assessed potential surface water and groundwater impacts at a former lead smelter in southwest Missouri. Potential surface water impact resulted from surface water entrainment of dust and smelting byproduct into adjacent streams. Groundwater impact in fractured/mined bedrock aquifer resulted

from the leaching of elements from smelting byproduct.

#### **Groundwater Impact**

Evaluated the extent of impact at a manufacturing facility in Danville, Illinois. Primary contaminants of concern were chlorinated solvents. Began the investigation as a RCRA closure for an AST. Investigated groundwater impact off-site to evaluate potential impact to adjacent surface water, and to assess potential exposure on residential properties resulting from migration of vapors from groundwater to indoor air.

#### **RCRA Facility Investigation**

Investigated a secondary brass smelter in northern Illinois. Negotiated scope of work, completed RCRA facility investigation, negotiated corrective action with IEPA, and implemented corrective action, which was limited to paving the site to eliminate infiltration of precipitation and entrainment of particulates in surface run-off.

#### **Munitions/Foundry Operation**

Assisted the operation in Illinois in obtaining closure for RCRA surface water impoundment. Evaluated historical RCRA groundwater monitoring data, determined the source of apparent impact in the groundwater from unrelated site operations, and determined the lack of impact from the RCRA impoundment in question. Analysis served as the basis for obtaining RCRA closure for the unit.

**EXHIBIT B**  
**Appraisal Document**  
**V-1928**

<b>APPRAISAL REPORT</b>		PROJECT Garrison Dam and Reservoir, North Dakota
REVISED APPRAISAL		TRACT V-1928
STATE North Dakota	COUNTY Mountrail	CITY, DISTRICT, OR TOWNSHIP Twp. 153 N., Rge. 93 W.
PROPERTY OF W. M. Harrington	ADDRESS Minot, North Dakota	
<b>LAND DESCRIPTION</b> Tenant on Cropland - Arthur Auerson Tenant on Grazing land - Earl L. Nice  South half of the Southeast quarter (S $\frac{1}{2}$ SE $\frac{1}{4}$ ) of Section 22, Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 23, Northwest quarter of the Northwest quarter (NW $\frac{1}{4}$ NW $\frac{1}{4}$ ) of Section 26, Lots 1, 2, 3 and 4, of Section 27, all in Township 153 North, Range 93 West of the 5th P.M., plus accretions.		
6/4/52 blg		
<b>AREA (Acres)</b> 565.33	<b>APPRAISAL VALUATION</b>	
	TOTAL PRESENT MARKET VALUE \$ 5,000.00	VALUE OF GROWING CROPS: SEVERANCE DAMAGES \$
I CERTIFY THAT I HAVE CAREFULLY EXAMINED THE ABOVE DESCRIBED PREMISES AND THE AMOUNT INDICATED REPRESENTS MY BEST UNBIASED JUDGMENT AS TO THE PRESENT MARKET VALUE OF THE FEE SIMPLE TITLE THERETO, EXCEPT AS OTHERWISE INDICATED. I DO FURTHER CERTIFY THAT I HAVE NO PRESENT OR INTENDED FUTURE INTEREST THEREIN.		DATE 30 April 1952
		APPRAISER <i>Vito Lundeen</i>
APPROVED BY (Name and Title)		VL
Exhibit B to Comment 		

**LOCATION, NEIGHBORHOOD, ETC.** Subject tract is located 7 miles North of Senish, North Dakota (population 400) in a general farming community of white farmers of mixed nationalities. Main roads of graded dirt follow the Missouri Valley to Senish, the nearest market, shipping point, and location of churches and high school. Rural schools are situated throughout the area, and R.F.D. routes serve farms and ranches. The area is characterized by both large and small farms, and by a few ranches which include a thousand or more acres of grazing land together with extensive acreages of bottom cropland. The economy of the area combines the raising of cereal grain and flex with production of above average grade beef cattle. Farms are operated with tractor drawn power equipment. With a few exceptions, most sets of building improvements are below average and not indicative of the development or present prosperity of the area. Lands of the area range from low level bottomlands of the Missouri flood plain to steeply rolling and rough uplands and level plateaus at an elevation of 175 to 250 feet above the flood plain. Soils of the flood plain vary in texture from fine sandy loams to silty clay loams of variable fertility and productive capacity. Soils of the uplands are mostly clay loams of variable texture utilized primarily for hay and pasture. The most desirable lands of the flood plain are usually utilized for alfalfa and cash grains, while poorly drained lands, valley slopes, and the uplands are used for feed crops, hay, and grazing. Dry farming, which incorporates summer fallow practice, is most common. Yields are variable, but have been excellent during the past ten years. Average carrying capacity of grazing lands is about 2.5 acres per A.U. month. Farm tenancy is about 20 per cent and usual terms are 1/4 crop delivered plus cash for improvements and pasture. Average rainfall is about 15 inches, of which major portion falls during the 4 1/2 month growing season. Cold winters, with snow and blizzards, are not uncommon.

**CHARACTER, TOPOGRAPHY AND ADAPTABILITY:** Drought is a major hazard in crop production, but recent years have been favorable to crops.

**CHARACTER, TOPOGRAPHY AND ADAPTABILITY:** Subject tract of 565.33 acres borders the Missouri River and includes approximately 395 acres of bottomland, the major portion which has accreted since the time of the General Land Office Survey. Soils of the bottomlands range from sandy clay loams to the riverwash sands of recent accretion. An estimated 30 acres have been adapted to cultivation and an additional area of 30 acres has been "brushed" in preparation for crop adaptation. Balance of the bottomland has a heavy cover of brush, willows and small trees with a few grassy swales which could be cut for hay and some open grassy spots which afford fair grazing. The upland, approximately 170 acres, ranges from gently rolling to rough broken hills with deep ravines and steep slopes and is suitable only for grazing. The tract is fenced, but fences on the bottomlands are in poor condition. Yearlong water supply is available from springs and seeps. Buildings on the property are unoccupied and uninhabitable and contribute very little to the value. This is a mediocre property, but when utilized in conjunction with more dependable lands it will provide summer grazing and adequate natural shelter for winter feed grounds and grazing.

**ASSESSED VALUE**

YEAR	ACRES	LAND	IMPROVEMENTS	OTHER	TOTAL
1947	263.10	\$ 968.00	\$ --	\$ --	\$ 968.00

**REMARKS RELATIVE TO ASSESSED VALUE** 1947 tax \$54.10 on 263.10 acres G.L.O. Survey acreage.

Assessed value bears no relationship to the present market value of properties in this area.

VALUATION OF LAND					
PRESENT USE	SOIL TYPE	TOPOGRAPHY	AREA	UNIT VALUE	TOTAL VALUE
Cropland (Bottom)	SandyClay	Undulating	30	\$ 35.00	\$ 1,050.00
"Brushed" Bottom - tillable	SandyClay	Undulating	30	25.00	750.00
Pasture (Upland)	Clay Loam	G. Rolling to Rough	170	7.50	1,275.00
Pasture (brush bottom and grassy swales)	Clay and SandyLoams	Level to Undulating	185	7.50	1,387.50
Pasture (brush and sandbar accretion area)	Loamy sand and sand	Level to Undulating	150.33	2.00	300.66
			565.33	TOTAL	\$ 4,763.16

VALUATION OF IMPROVEMENTS							
KIND	SIZE	CONSTRUCTION	ROOF	FOUNDATION	CONDITION	PRESENT VAL.*	SALVAGE VALUE
1. Log Shack	14x28x7	Logs	Comp. & Shgl.	None	V.Poor	\$ 100.00	None
Addition	10x20-6	Logs	Shgl.	None	V.Poor		
2. Barn(calf)	12x24-4 1/2-5	Frame	Board	None	V.Poor	25.00	None
3. Hen house	10x12-7	Concrete Walls & Floor	Cottonwood & Clay	Concrete Floor	Poor	50.00	None
4. Toilet	4x4-6/7	Cottonwood	Board	None	V.Poor	5.00	None
The buildings are for the most part constructed of cottonwood material except hen house. They are not habitable, have but little value and have no salvage value.							
TOTAL*						\$ 180.00	\$ None

\* Estimated contribution improvements to appraised market value of the property as a whole.

SALES AND OFFERS OF SALE OF NEARBY PROPERTIES							
GRANTOR	GRANTEE	DATE	DEED BOOK	PAGE	ACRES OR AREA	ACTUAL CONSIDERATION	PRICE PER ACRE
State Land Dept.	Stolson	9/22/50	Unrecorded		240.00	\$2500.00	\$10.83

COMPARISON OF ABOVE WITH PROPERTY APPRAISED The above tract consists of all upland pasture without improvements. It is fairly well located, gently to medium rolling in topography. It is fairly well grassed, affords fairly good grazing of average carrying capacity and is more desirable for season grazing than subject tract. No similar property has been sold to make a direct comparison with subject tract. Sales of somewhat similar lands in other areas were noted, and with appraisal experience of various types of lands were considered.

GROWING CROPS						
TYPE	ACRES	ESTIMATED YIELD PER ACRE	UNIT VALUE	GROSS MARKET VALUE	COSTS TO MATURE, HARVEST & MARKET	NET CASH VALUE
None			\$	\$	\$	\$

APPRAISAL OF TIMBER, MINERALS, ETC.

No timber of merchantable value. No proof of existing minerals. Oil and gas rights may be reserved by owners and are therefore not considered in this appraisal.

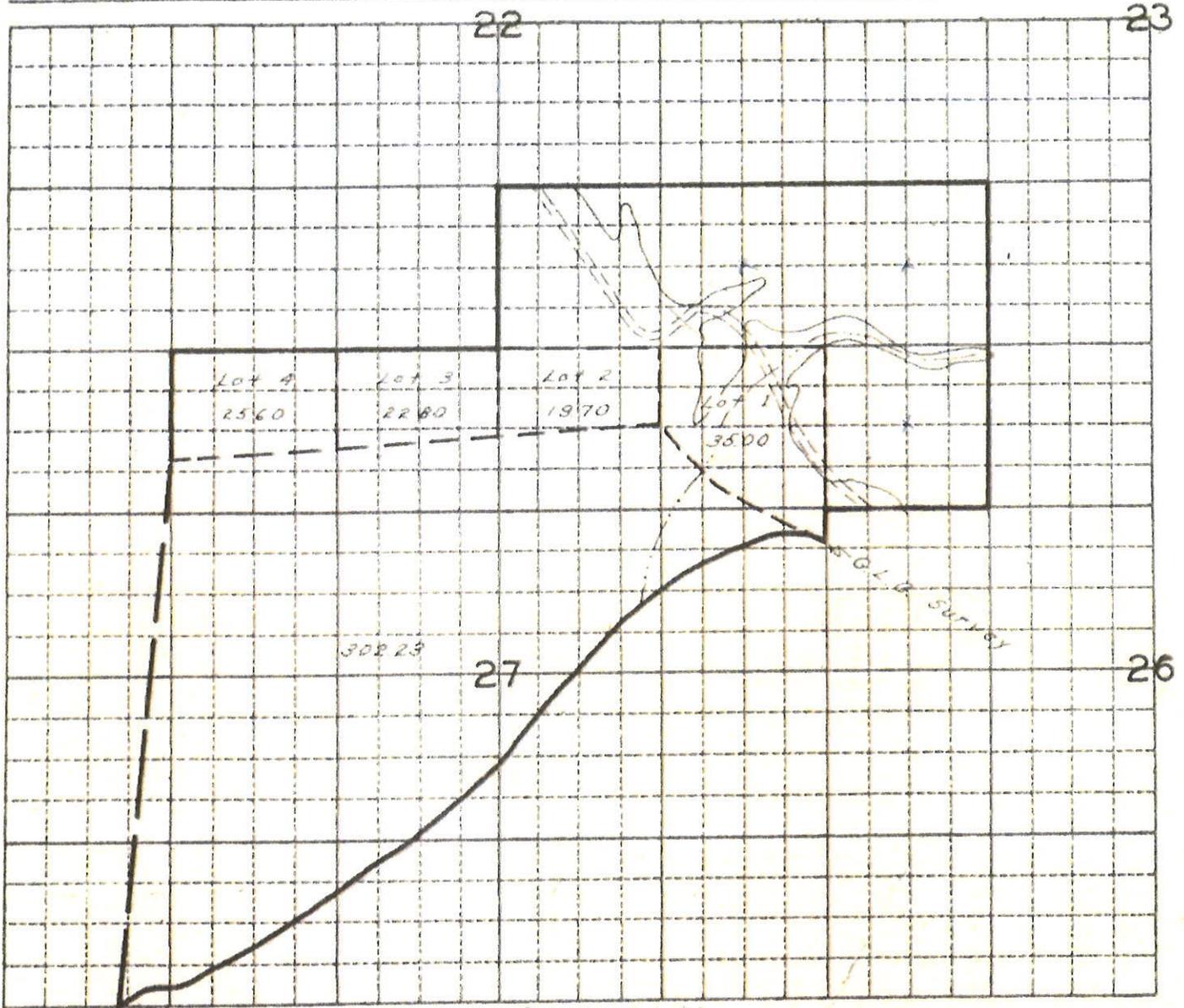
GENERAL REMARKS (Discuss principal factors affecting conclusions) A mediocre property which has had little recognizable value until recent years when there has been an increased demand for all lands adaptable to any agricultural use. The subject tract if utilized in a unit relationship with other lands could provide abundant water, yearlong grazing in open winters, and winter quarters for shelter and feeding of livestock. This is a saleable and rentable property

DEG FORM 241 (Cont.) at this time.  
1 Jan 46

Exhibit B to Comment

TRACT MAP (WITH GRID)

Project symbol No. Garrison Dam - Reservoir Area Tract No. V-1928  
 Name of owner Harrington Brothers  
 Field work by Jack Turnquist Date 1 February 1951  
 Description of tract State - North Dakota County Mountrail  
South half of the Southeast quarter (S $\frac{1}{2}$ SE $\frac{1}{4}$ ) of Section 22, Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 23, Northwest quarter of the Northwest quarter (NW $\frac{1}{4}$ NW $\frac{1}{4}$ ) of Section 26, Lots 1, 2, 3 and 4, of Section 27, all in Township 153 North, Range 93 West of the 5th P.M., plus accretions.



(Scale: 4 inches equals 1 mile)

CLASSES OF LAND

Crop land   
 Pasture land   
 Forest land   
 \*

Grades of each class of land must be shown on the map proper.

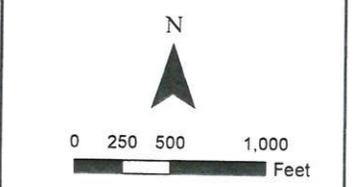
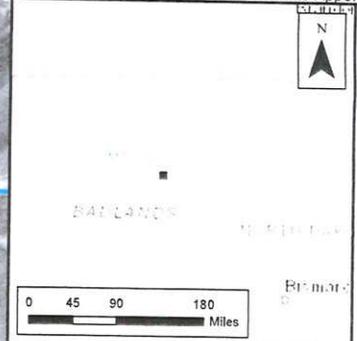
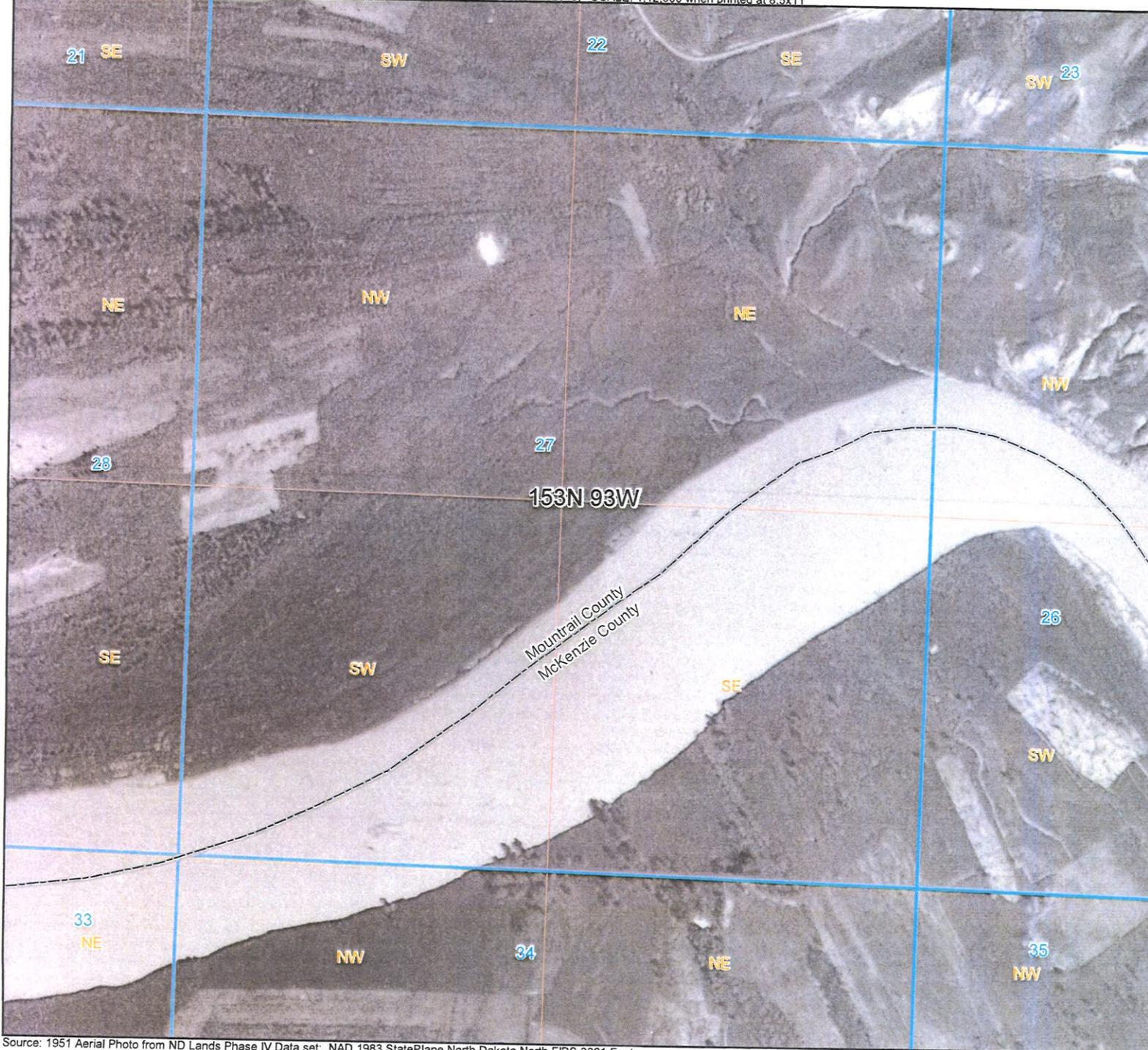
\* Name of any other class of land involves

I certify that this is an accurate map of Tract V-1928  
 based on Survey, Deed Description and G.L.O. Records  
 shows this tract to contain 565.33 acres, more or less  
 Name Jack Turnquist  
 Title Draftsman  
 Date 1 February 1951

Indicate whether map is based on General Land Office records, actual survey, deed description or actual survey.

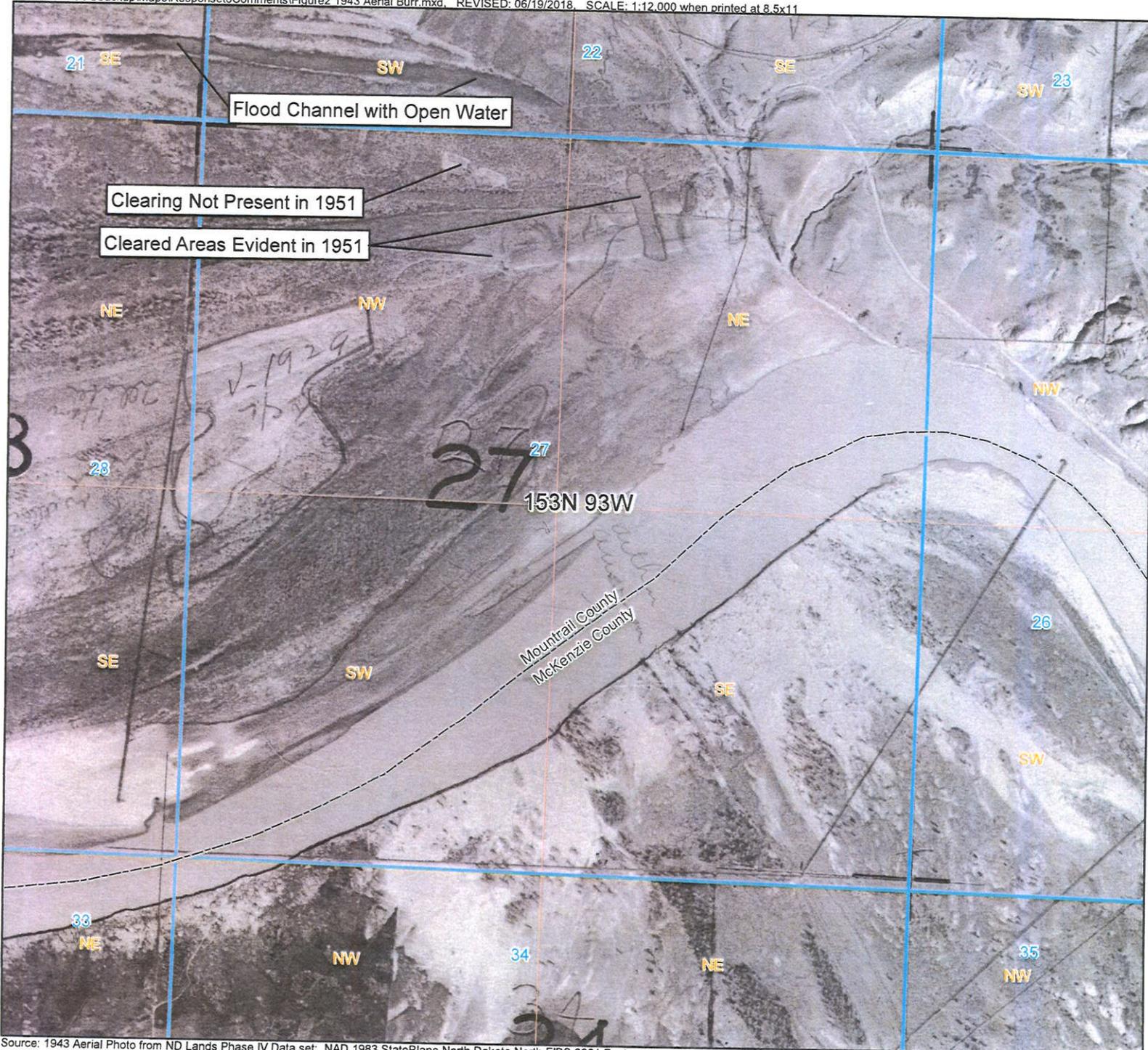
Exhibit B to Comment

**FIGURE 1**



**Figure 1**  
**1951 Aerial Photo**  
 T153N, R93W, Section 27  
 Public Comment  
 North Dakota Industrial  
 Commission Case  
 No.: 26584

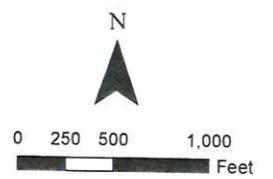
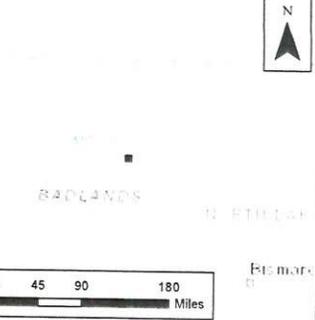
**FIGURE 2**



Flood Channel with Open Water

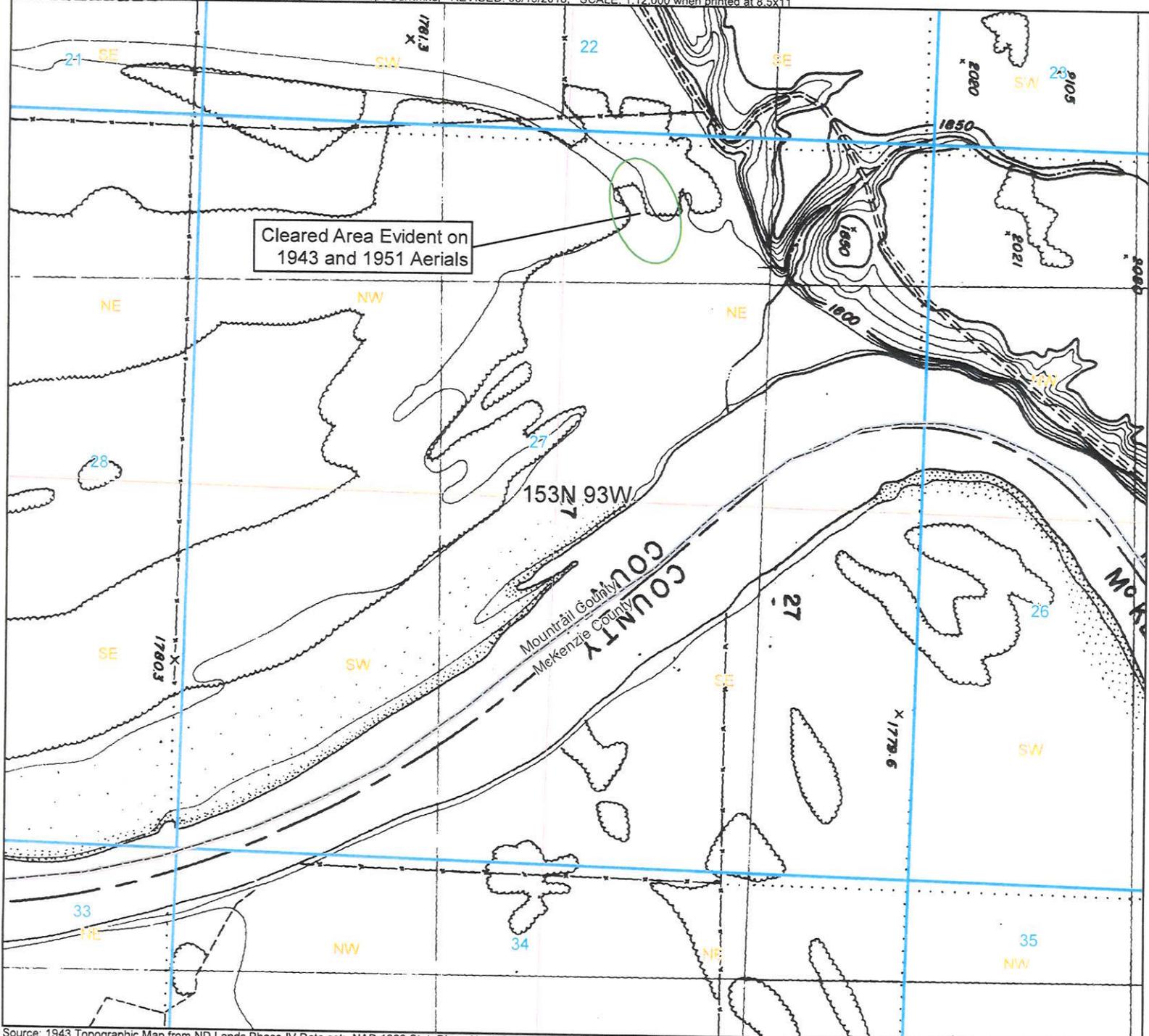
Clearing Not Present in 1951

Cleared Areas Evident in 1951

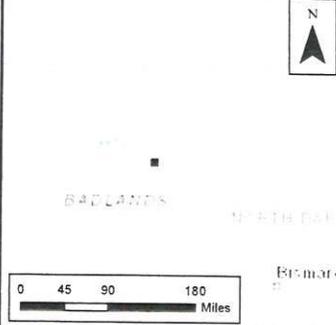


**Figure 2**  
**1943 Aerial Photo**  
 T153N, R93W, Section 27  
 Public Comment  
 North Dakota Industrial  
 Commission Case  
 No.: 26584

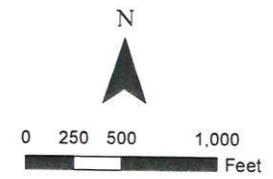
**FIGURE 3**



Cleared Area Evident on 1943 and 1951 Aerials

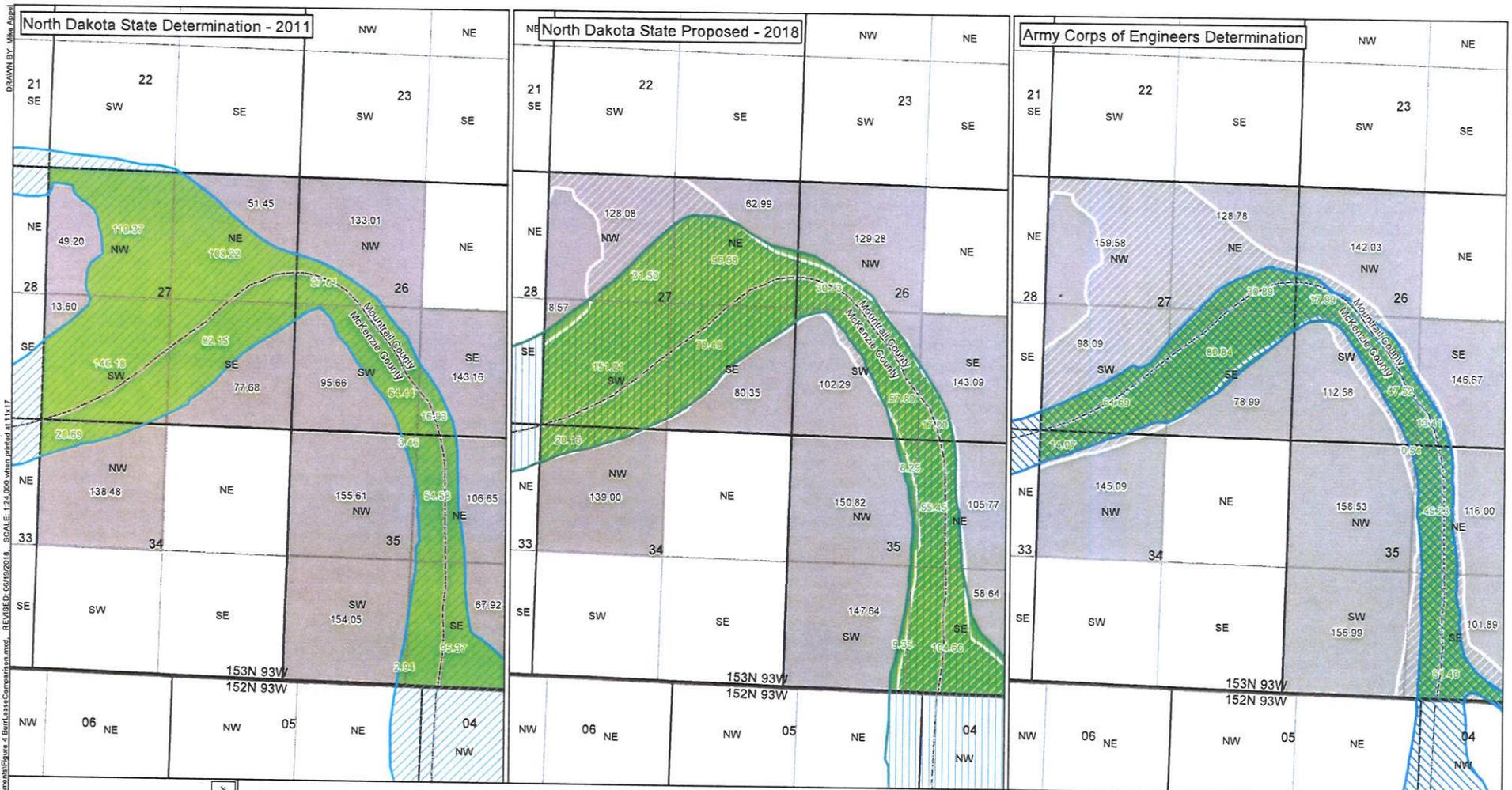


- Legend**
- County Boundary
  - PLSS Township
  - PLSS Section
  - PLSS Quarter



**Figure 3**  
**1943 Topographic Map**  
 T153N, R93W, Section 27  
 Public Comment  
 North Dakota Industrial  
 Commission Case  
 No.: 26584

**FIGURE 4**

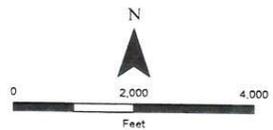


DRAWN BY: Mike Dapost  
 File Path: O:\Backup\Map\Responses\Comments\Figures & Burial\CaseComparison.mxd, REVISED: 09/19/2018, SCALE: 1:24,000, When printed at 11x17

**Legend**

- NOG Holding
- Non-NOG Holding
- Pre Sakakawea Missouri River (ND 2011)
- Pre Sakakawea Missouri River (ND 2018)
- Pre Sakakawea Missouri River (ACOE)
- Township Range (BLM)
- Section (BLM)
- Section Quarter (BLM)

Notes:  
 ACOE: Army Corp of Engineers  
 ND: North Dakota Land Board  
 Areas in US Acres.



**Figure 4**  
**Comparison of 2011 OHWM**  
**versus 2018 Proposed OHWM**  
 T153N, R93W, Section 27  
 Public Comment  
 North Dakota Industrial Commission Case No.: 26584

Source: Esri - World Topographic Map; NAD 1983 StatePlane North Dakota North FIPS 3301 Feet

**FIGURE 5**

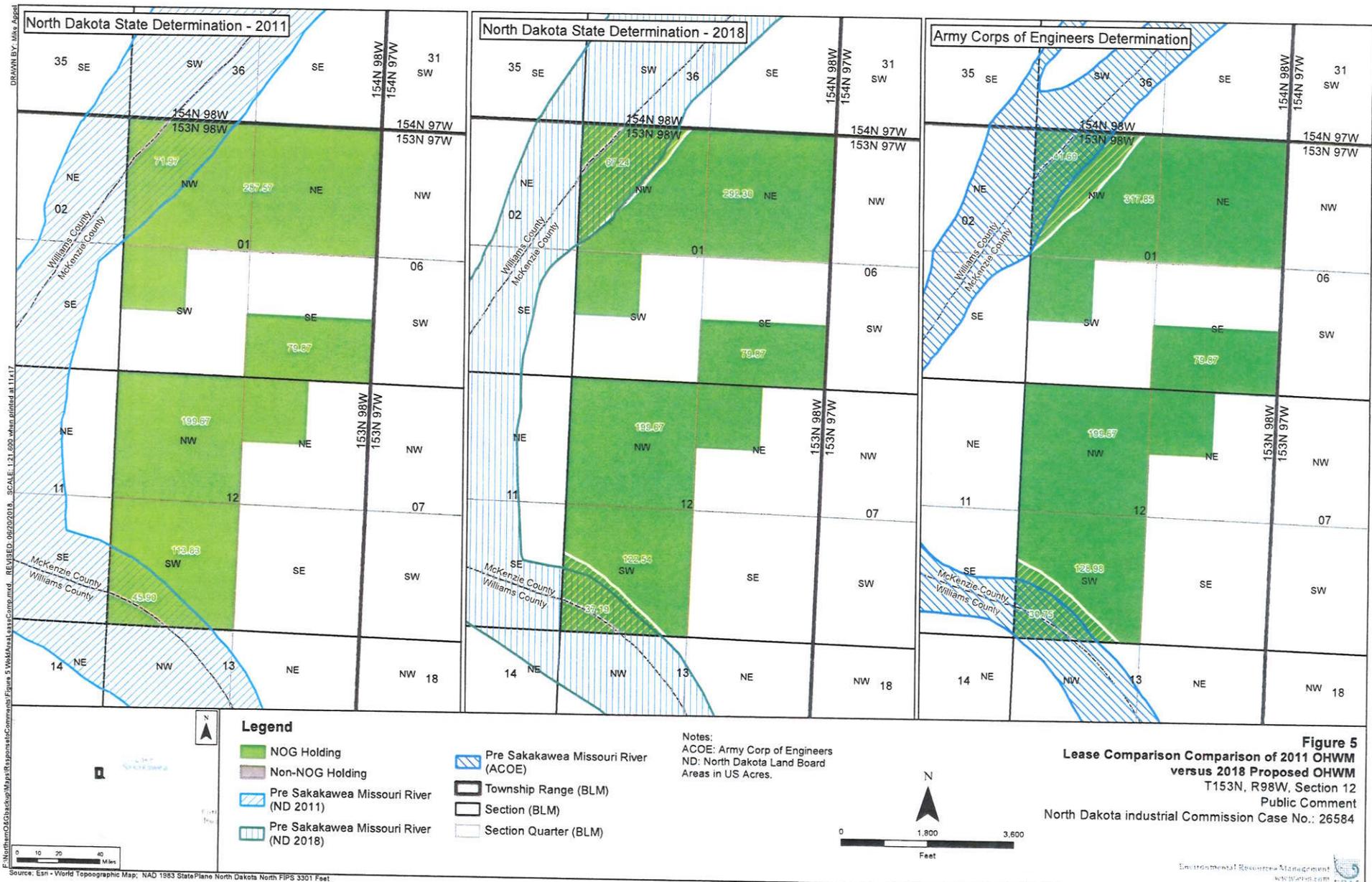


Figure 5

**OBJECT IDS 185 AND 186**  
**BARTLETT & WEST 2011**

OBJECTID	Transect	Comment	Photo_Date	Date	Confidence	Township	Range	Section	Photo_File	Topo
1	LS15410030L2	Cut bank, shadowing on wall, shading of upland vegetation	Aug. 1958	4/7/2010	Yes	154	100	30	BUL-2V-131	ga015_1943
2	LS15410030L1	Color change in photo, vegetation change near river, '43 topo elevation change	Aug. 1958	4/7/2010	Yes	154	100	30	BUL-2V-131	ga015_1943
3	LS15410030L3	Cut bank, shadowing on wall, vegetation change, old oxbow above OHWL	Aug. 1958	4/7/2010	Yes	154	100	30	BUL-2V-131	ga015_1943
4	LS15410125R1	Mature trees vs. low vegetation, '43 topo lines, clear riverbank	Aug. 1958	4/7/2010	Yes	154	100	30	BUL-2V-131	ga015_1943
5	LS15410136R1	River channel and cut above, Mature vegetation above and water below, willow flat below channel	Aug. 1958	4/7/2010	Yes	154	101	25	BUL-2V-131	ga015_1943
6	LS15410135R2	Mature vegetation along river edge, color change, '43 topo elevation change, on main river channel	Aug. 1958	4/7/2010	Yes	154	101	36	BUL-2V-130	ga015_1943
7	LS15410031L1	Clear change from main channel, mature vegetation, cut bank, old oxbow above OHWL	Aug. 1958	4/7/2010	Yes	154	101	36	BUL-2V-130	ga015_1943
8	LS15410031L2	Long line of mature trees into cut bank; willow flat west of tree line; turning point of high bank, riverbank north of tree line, old oxbow above OHWL	Aug. 1958	4/7/2010	Yes	154	100	31	BUL-2V-131	ga015_1943
9	LS15310006L1	Edge of willow area vs. row of trees below cultivated field, old oxbow above OHWL	Aug. 1958	4/7/2010	Yes	153	100	31	BUL-2V-131	ga015_1943
10	LS15310006L2	Abrupt change in vegetation, old water channel above OHWL with mature trees; willows below OHWL, old oxbow above OHWL	Aug. 1958	4/7/2010	Yes	153	100	6	BUL-2V-131	ga015_1943
11	LS15310005L1	Vegetation change, potentially willows above, follows '43 topo, old oxbow above OHWL	Aug. 1958	4/7/2010	Yes	153	100	6	BUL-2V-84	ga015_1943
12	LS15310009L3	Cut bank with willows below, steep hills above, old oxbow above OHWL	Aug. 1958	4/7/2010	NO	153	100	5	BUL-2V-84	ga015_1943
13	LS15310008L1	Above a smaller channel lined by willows, trees and open above the OHWL, ridge apparent in 2009 aerial imagery and 1943 photo	Aug. 1958	4/7/2010	Yes	153	100	9	BUL-2V-82	ga019_1943
14	LS15310008L2	Above a smaller channel lined by willows, trees and open above the OHWL, ridge apparent in 2009 aerial imagery and 1943 photo	Aug. 1958	4/7/2010	Yes	153	100	8	BUL-2V-83	ga015_1943
15	LS15310009L1	Above a willow flat, below start of larger vegetation	Aug. 1958	4/7/2010	Yes	153	100	8	BUL-2V-83	ga015_1943
16	LS15310009L2	Above a small channel, below a bank, at turn in river to a cut bank, '43 topo shows rise in elevation	Aug. 1958	4/7/2010	Yes	153	100	9	BUL-2V-83	ga015_1943
17	LS15310101R1	Cut bank, vegetation line, scattered trees above.	Aug. 1958	4/7/2010	Yes	153	100	9	BUL-2V-83	ga019_1943
18	LS15310101R2	Above willow flat, below cut bank noted on photo, Vegetation line	Aug. 1958	4/7/2010	Yes	153	101	1	BUL-2V-85	ga015_1943
19	LS15310006R1	Above willow flat, below cut bank noted on photo, vegetation line	Aug. 1958	4/7/2010	Yes	153	101	1	BUL-2V-85	ga015_1943
20	LS15310006R2	Above willow flat, below cut bank noted on photo, vegetation line, appears to be upland drain above	Aug. 1958	4/7/2010	Yes	153	100	6	BUL-2V-85	ga015_1943
21	LS15310007R1	Larger, more dense vegetation above OHWL, shorter stature below, apparent small river in 2009 aerials indicating elevation change	Aug. 1958	4/7/2010	Yes	153	100	6	BUL-2V-85	ga015_1943
22	LS15310007R2	Larger, more dense vegetation above OHWL, shorter stature below, apparent small river in 2009 aerials indicating elevation change	Aug. 1958	4/7/2010	Yes	153	100	7	BUL-2V-84	ga015_1943
23	LS15310008R1	Larger, more dense vegetation above OHWL, shorter stature below, longer willow flat	Aug. 1958	4/7/2010	Yes	153	100	7	BUL-2V-84	ga015_1943
24	LS15310008R2	Cut bank at main river channel, evidence of farming or haying, clear riverbank and '43 topo line	Aug. 1958	4/7/2010	Yes	153	100	8	BUL-2V-84	ga015_1943
25	LS15310009R1	Apparent bank and '43 topo line	Aug. 1958	4/7/2010	Yes	153	100	8	BUL-2V-83	ga015_1943
26	LS15310009R2	Turn in peninsula, mature trees vs. barren ground, clear bank	Aug. 1958	4/9/2010	Yes	153	100	9	BUL-2V-46	ga015_1943
27	LS15310016R1	Change in vegetation density, shrubs and open vs. trees, '43 topo shows elevation change	Aug. 1958	4/9/2010	Yes	153	100	9	BUL-2V-46	ga015_1943
28	LS15310016R2	Depositional levee, some trees forming and establishing below OHWL, vegetation more dense and taller above OHWL, color change	Aug. 1958	4/9/2010	Yes	153	100	16	BUL-2V-46	ga015_1943
29	LS15310017R1	Depositional levee, some trees forming and establishing below OHWL, vegetation more dense and taller above OHWL, color change	Aug. 1958	4/9/2010	Yes	153	100	16	BUL-2V-46	ga015_1943
30	LS15310020R1	Depositional levee, vegetation more dense and taller above OHWL, color change, below is relatively barren	Aug. 1958	4/9/2010	Yes	153	100	17	BUL-2V-46	ga015_1943
31	LS15310020R2	Vegetation more dense and taller above OHWL, color change, lower structure below	Aug. 1958	4/9/2010	Yes	153	100	20	BUL-2V-46	ga015_1943
32	LS15310019R1	Willow flat below OHWL, dense, more mature vegetation and trees above, at turn in river	Aug. 1958	4/9/2010	Yes	153	100	20	BUL-2V-46	ga016_1943
33	LS15310019R2	Cut bank, '43 topo elevation change	Aug. 1958	4/9/2010	Yes	153	100	19	BUL-2V-45	ga016_1943
34	LS15310016L1	Cut bank, at edge of main channel, vegetation above, water below	Aug. 1958	4/9/2010	Yes	153	100	19	BUL-2V-45	ga016_1943
35	LS15310016L2	Cut bank, at edge of main channel, vegetation above, water below, two-tracks above OHWL	Aug. 1958	4/9/2010	Yes	153	100	16	BUL-2V-47	ga019_1943
36	LS15310026L3	Cut bank at main channel with wooded vegetation above, '43 topo shows elevation change	Aug. 1958	4/9/2010	Yes	153	100	16	BUL-2V-47	ga015_1943
37	LS15310020L1	Cut bank at main channel with wooded vegetation above, '43 topo shows elevation change, cultivated field and road within 1/4 mile	Aug. 1958	4/9/2010	Yes	153	100	16	BUL-2V-47	ga015_1943
38	LS15310020L2	Bank of main river channel, some wooded vegetation above, two-tracks above	Aug. 1958	4/9/2010	Yes	153	100	20	BUL-2V-47	ga016_1943
39	LS15310020L3	Bank of main river channel, some wooded vegetation above, cultivated or hayed field 175ft above.	Aug. 1958	4/9/2010	Yes	153	100	20	BUL-2V-47	ga016_1943
40	LS15310030R1	Cut bank, vertical barren area along main channel, topo shows steep elevation change	Aug. 1958	4/9/2010	Yes	153	100	20	BUL-2V-47	ga016_1943
41	LS15310030R2	Cut bank, vertical barren area along main channel, topo shows steep elevation change	Aug. 1958	4/9/2010	Yes	153	100	30	BUL-1V-68	ga016_1943
42	LS15310029R1	Cut bank, vertical barren area along main channel, topo shows steep elevation change	Aug. 1958	4/9/2010	Yes	153	100	30	BUL-1V-68	ga016_1943
43	LS15310032R1	Cut bank, tree line above OHWL, apparent bank on main channel	Aug. 1958	4/9/2010	Yes	153	100	29	BUL-1V-68	ga016_1943
44	LS15310032R2	Along wooded vegetation adjacent to hay field, along main channel	Aug. 1958	4/9/2010	Yes	153	100	32	BUL-1V-68	ga016_1943
45	LS15310033R1	Along cut bank, along main channel, upland vegetation, trees	Aug. 1958	4/9/2010	Yes	153	100	32	BUL-1V-68	ga016_1943
46	LS15310033R2	Along clear bank on main river channel, cleared field above, river below	Aug. 1958	4/9/2010	Yes	153	100	33	BUL-1V-67	ga016_1943
47	LS15310034R1	Along clear bank on main river channel, cleared field above, river below	Aug. 1958	4/9/2010	Yes	153	100	33	BUL-1V-67	ga020_1943
48	LS15310034R2	North side is cut bank, turn in river, wooded above OHWL, lacking wooded vegetation below OHWL	Aug. 1958	4/9/2010	Yes	153	100	34	BUL-1V-67	ga020_1943
49	LS15310034R3	Wooded vegetation above OHWL, low structure vegetation below	Aug. 1958	4/9/2010	Yes	153	100	34	BUL-1V-66	ga020_1943
50	LS15210006R1	Farmstead above, main river channel below, end of willow flat to the north	Aug. 1958	4/9/2010	Yes	152	100	34	BUL-1V-66	ga020_1943
51	LS15210005R1	Apparent cut on over bank, wooded dense vegetation above, fields behind trees	Aug. 1958	4/9/2010	Yes	152	100	6	BUL-1V-44	ga020_1943
52	LS15210005R2	Apparent bank along river channel, hay field above, section lines demarcated on 1958 photo are incorrect	Aug. 1958	4/9/2010	Yes	152	100	5	BUL-1V-44	ga020_1943
53	LS15210008R1	Apparent bank along river channel, hay or crop field above.	Aug. 1958	4/9/2010	Yes	152	100	5	BUL-1V-44	ga020_1943
54	LS15210008R2	Apparent bank along river channel, hay or crop field above, begins turn in river	Aug. 1958	4/9/2010	Yes	152	100	8	BUL-1V-44	ga020_1943
55	LS15210009R1	Apparent bank along river channel, wooded area to west and beginning of willow flat to the east, turns away from main channel	Aug. 1958	4/9/2010	Yes	152	100	8	BUL-1V-44	ga020_1943
56	LS15210009R2	Bank above secondary channel, willow flat below, wooded trees above, old oxbow behind	Aug. 1958	4/9/2010	Yes	152	100	9	BUL-1V-44	ga020_1943
57	LS15210010R1	Apparent bank, behind secondary channel, willow flat below, wooded area above, hay field between and behind LS15210009R2 and LS15210010R1, old oxbow behind	May-43	4/9/2010	Yes	152	100	9	MRD-8-114	ga020_1943
58	LS15210010R2	Behind secondary channel, transitional area, less than 50% tree species, apparent vegetation change along older bank, old oxbow behind	Aug. 1958	4/9/2010	Yes	152	100	10	BUL-1V-47	ga022_1943
59	LS15210003R1	Behind secondary channel, transitional area, less than 50% tree species, apparent vegetation change along older bank, old oxbow behind	Aug. 1958	4/9/2010	No	152	100	10	BUL-1V-47	ga022_1943
60	LS15210002R1	Behind secondary channel, transitional area, less than 50% tree species, apparent vegetation change along older bank, old oxbow behind	Aug. 1958	4/9/2010	No	152	100	2	BUL-1V-47	ga022_1943

OBJECTID	Transect	Comment	Photo_Date	Date	Confidence	Township	Range	Section	Photo_File	Topo
61	LS15210002R2	Secondary river channel, apparent bank above, trees behind, islands in front of channel	Aug. 1958	4/9/2010	Yes	153	100	2	BUL-1V-47	ra022_1943
62	LS15310029L1	Transition area between low, shrub and tree vegetation	Aug. 1958	4/9/2010	Yes	153	100	20	BUL-1V-67	ra016_1943
63	LS15310029L2	Transition area between low, shrub and tree vegetation, few trees below, but not 50%	Aug. 1958	4/9/2010	Yes	153	100	29	BUL-1V-67	ra016_1943
64	LS15310029L3	Transition area between low, shrub and tree vegetation, lacking vegetation below	Aug. 1958	4/9/2010	Yes	153	100	29	BUL-1V-67	ra016_1943
65	LS15310032L1	Transition area, area between OHWL and river is narrowing from upstream	Aug. 1958	4/9/2010	Yes	153	100	29	BUL-1V-67	ra016_1943
66	LS15310033L1	Along main river channel, narrow band of vegetation below a cultivated field above OHWL	Aug. 1958	4/9/2010	Yes	153	100	32	BUL-1V-67	ra016_1943
67	LS15310033L2	Along main river channel, narrow band of vegetation below a cultivated field above OHWL	Aug. 1958	4/9/2010	No	153	100	33	BUL-1V-67	ra016_1943
68	LS15310034L1	Along main river channel with few island forming, vegetation behind, potentially willow shrubs, hayed field 500' from OHWL	Aug. 1958	4/9/2010	No	153	100	33	BUL-1V-67	ra016_1943
69	LS15310034L2	River turns along cut bank, '43 topo shows steep change in elevation	Aug. 1958	4/9/2010	No	153	100	34	BUL-1V-66	ra020_1943
70	LS15310034L3	Vegetation transition line, dense above, low stature below	Aug. 1958	4/9/2010	Yes	153	100	34	BUL-1V-66	ra020_1943
71	LS15310035L1	Along main river channel, dense wooded vegetation above	Aug. 1958	4/9/2010	Yes	153	100	34	BUL-1V-66	ra020_1943
72	LS15210005L1	Along main river channel, dense wooded vegetation above, cultivated area within 100'	Aug. 1958	4/9/2010	Yes	153	100	35	BUL-1V-66	ra020_1943
73	LS15210005L2	Along main river channel, upland is dense wooded vegetation	Aug. 1958	4/9/2010	Yes	152	100	9	BUL-1V-44	ra020_1943
74	LS15210004L1	Transition area between shrubs and trees, taller vegetation above, willow flat below	Aug. 1958	4/9/2010	Yes	152	100	5	BUL-1V-44	ra020_1943
75	LS15210004L2	Behind secondary channel, above willow flat, below dense trees	Aug. 1958	4/9/2010	Yes	152	100	4	BUL-1V-44	ra020_1943
76	LS15210004L3	Above secondary channel, dense trees above, islands with low willows	Aug. 1958	4/9/2010	Yes	152	100	4	BUL-1V-44	ra020_1943
77	LS15210003L1	Above secondary channel, dense trees above, islands with low willows	Aug. 1958	4/9/2010	Yes	152	100	4	BUL-1V-47	ra022_1943
78	LS15210003L2	Along main river channel, sandy terrain below, wooded vegetation above	Aug. 1958	4/9/2010	Yes	152	100	3	BUL-1V-47	ra022_1943
79	LS15309933L1	Vegetation line between willow flat and trees, field within 160'	Aug. 1958	4/9/2010	Yes	153	99	31	BUL-1V-62	ra022_1943
80	LS15309933L2	Vegetation line between willow flat and trees	Aug. 1958	4/9/2010	Yes	153	99	31	BUL-1V-62	ra022_1943
81	LS15309933L1	Vegetation line between willow flat and trees	Aug. 1958	4/9/2010	Yes	153	99	31	BUL-1V-62	ra022_1943
82	LS15309933L2	Vegetation line between willow flat and trees	Aug. 1958	4/9/2010	Yes	153	99	32	BUL-1V-62	ra022_1943
83	LS15309933L1	On main channel, dense tree area above, farmed field 800' to the north	Aug. 1958	4/9/2010	Yes	153	99	32	BUL-1V-62	ra022_1943
84	LS15309933L2	On main channel, dense tree area above	Aug. 1958	4/9/2010	Yes	153	99	33	BUL-1V-61	ra025_1943
85	LS15309933L3	On main river channel, vegetation above, farmed field 250' to the north	Aug. 1958	4/9/2010	Yes	153	99	33	BUL-1V-61	ra025_1943
86	LS15309934L1	On main river channel, vegetation on old clearing above, farmed field 320' to the north	Aug. 1958	4/9/2010	Yes	153	99	33	BUL-1V-61	ra025_1943
87	LS15309934L2	On main river channel and on an old channel, vegetation established, some upland areas are cultivated, beginning of old oxbow	Aug. 1958	4/9/2010	Yes	153	99	34	BUL-1V-61	ra025_1943
88	LS15309935L1	A bank above willow flat, upland vegetated with scattered trees and fields, beginning of old oxbow	Aug. 1958	4/9/2010	No	153	99	34	BUL-1V-59	ra025_1943
89	LS15309935L2	A bank above willow flat, upland vegetated with scattered trees and fields, beginning of old oxbow	Aug. 1958	4/9/2010	No	153	99	35	BUL-1V-59	ra025_1943
90	LS15309935L3	Entrance to oxbow, trees above OHWL, barren below with some low willows	Aug. 1958	4/9/2010	No	153	99	35	BUL-1V-59	ra025_1943
91	LS15309936L1	Trees above OHWL, barren below	Aug. 1958	4/9/2010	No	153	99	35	BUL-1V-59	ra025_1943
92	LS15309932R1	On main river channel, fields above, narrow band of dense vegetation with trees	Aug. 1958	4/9/2010	No	153	99	36	BUL-1V-59	ra025_1943
93	LS15309932R2	Near main river channel, dense vegetation between fields upland, two-track above	Aug. 1958	4/9/2010	Yes	153	99	32	BUL-1V-62	ra022_1943
94	LS15309932R3	Appears to be willow flats, barren areas, and hayed grass areas below, two-track on tilled fields above, old river channel area	Aug. 1958	4/9/2010	No	153	99	32	BUL-1V-62	ra022_1943
95	LS15309933R1	Appears to be willow flats, barren areas, and hayed grass areas below, two-track on tilled fields above, old river channel area	Aug. 1958	4/9/2010	No	153	99	32	BUL-1V-61	ra022_1943
96	LS15210001R1	Appears to be willow flats, barren areas, and hayed grass areas below, two-track on tilled fields above, old river channel area	Aug. 1958	4/9/2010	No	152	100	1	BUL-1V-49	ra025_1943
97	LS15209906R1	Cut bank of old river channel, willows and hayed grass below, Topo shows steep elevation change	Aug. 1958	4/9/2010	No	152	99	6	BUL-1V-49	ra025_1943
98	LS15209906R2	Cut bank of old river channel, willows and hayed grass below, Topo shows steep elevation change	Aug. 1958	4/9/2010	No	152	99	6	BUL-1V-49	ra025_1943
99	LS15209905R1	Cut bank of old river channel, willow below, topo shows steep elevation change	Aug. 1958	4/9/2010	No	152	99	5	BUL-1V-58	ra025_1943
100	LS15209905R2	Cut bank of main river channel, no vegetation below, topo shows steel elevation change	Aug. 1958	4/9/2010	Yes	152	99	5	BUL-1V-58	ra025_1943
101	LS15309935R1	Cut bank of main river channel, no vegetation below, trees above, topo shows steel elevation change	Aug. 1958	4/9/2010	Yes	152	99	5	BUL-1V-58	ra025_1943
102	LS15410131L1	Main river channel, construction behind, follows the line area where vegetation has not been disturbed	Aug. 1958	4/12/2010	Yes	154	101	31	BUL-2V-90	ra007_1943
103	LS15410132L1	On secondary channel behind willow sandbar, higher denser vegetation above	Aug. 1958	4/12/2010	Yes	154	101	32	BUL-2V-127	ra007_1943
104	LS15410132L2	On main river channel, above there are trees and shrubs for 300' and the rest fields	Aug. 1958	4/12/2010	Yes	154	101	32	BUL-2V-127	ra007_1943
105	LS15410132L3	On main river channel, narrow band of trees and fields behind, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	32	BUL-2V-127	ra007_1943
106	LS15410133L1	Behind willow flat, below field, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	33	BUL-2V-127	ra007_1943
107	LS15410133L2	Main river channel, upland is old field with two-track adjacent to river, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	33	BUL-2V-127	ra007_1943
108	LS15410134L1	On main river channel behind sandbar, upland is field and two-track, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	33	BUL-2V-127	ra007_1943
109	LS15410134L2	Main river channel, upland is old field with two-track adjacent to river, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	34	BUL-2V-128	ra011_1943
110	LS15410134L3	Behind willow sandbar, field upland, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	34	BUL-2V-128	ra011_1943
111	LS15410135L1	Above willow flat, upland is old river bed with trees, trees following old levees and expanding out, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	35	BUL-2V-130	ra011_1943
112	LS15410135L2	Above willow flat, fields above with scattered trees, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	Yes	154	101	35	BUL-2V-130	ra011_1943
113	LS15410135L3	Above willow flat, fields above with scattered trees, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	No	154	101	35	BUL-2V-130	ra011_1943
114	LS15410135L1	Above willow flat, upland is corner of cleared field, drainage fields above levee construction, '43 COE photos show old river bed to the north	Aug. 1958	4/12/2010	No	154	101	25	BUL-2V-130	ra011_1943
115	LS15410125L2	Above willow flat, upland vegetation modified, drainage fields above levee construction	Aug. 1958	4/12/2010	No	154	101	25	BUL-2V-130	ra015_1943
116	LS15410125L3	Above willow flat, upland vegetation modified, drainage fields above levee construction	Aug. 1958	4/12/2010	No	154	101	25	BUL-2V-130	ra015_1943
117	LS15310106R3	On main river channel, wooded area with mature trees above, near bridge, old river channel behind	Aug. 1958	4/12/2010	No	153	101	25	BUL-2V-127	ra007_1943
118	LS15410132R1	Along tree line, vegetation more dense above and high stature, old river channel behind	Aug. 1958	4/12/2010	Yes	154	101	32	BUL-2V-127	ra007_1943
119	LS15410132R2	Along tree line, vegetation more dense above and high stature, old river channel behind	Aug. 1958	4/12/2010	Yes	154	101	32	BUL-2V-127	ra007_1943
120	LS15410133R1	Along tree line, vegetation more dense above and high stature, old river channel behind	Aug. 1958	4/12/2010	Yes	154	101	33	BUL-2V-127	ra007_1943

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121	LS15310104R1	Along tree line, vegetation more dense above and high stature, old river channel behind	Aug. 1958	4/12/2010	Yes	153	101	4	BUL-2V-127	ga011_1943
122	LS15310103R1	Along tree line, vegetation more dense above and high stature, old river channel behind	Aug. 1958	4/12/2010	Yes	153	101	3	BUL-2V-128	ga011_1943
123	LS15310103R2	Along tree line, vegetation more dense above and high stature, old river channel behind, homestead adjacent, some standing water below	Aug. 1958	4/12/2010	Yes	153	101	3	BUL-2V-128	ga011_1943
124	LS15310103R3	Along back channel, below hayed field	Aug. 1958	4/12/2010	Yes	153	101	3	BUL-2V-128	ga011_1943
125	LS15310102R1	Behind old channel with willow flat, below field	Aug. 1958	4/12/2010	Yes	153	101	3	BUL-2V-128	ga011_1943
126	LS15310102R2	Behind old channel with willow flat, below field	Aug. 1958	4/12/2010	Yes	153	101	2	BUL-2V-130	ga011_1943
127	LS15410136R1	Cut bank along main river channel, upland is wooded and fields	Aug. 1958	4/12/2010	Yes	153	101	2	BUL-2V-130	ga011_1943
128	LS15410136R2	Along wooded tree line, narrow willow flat below	Aug. 1958	4/12/2010	Yes	154	101	36	BUL-2V-130	ga011_1943
129	LS15410136R3	Along main river channel cut bank	Aug. 1958	4/12/2010	Yes	154	101	36	BUL-2V-130	ga015_1943
130	LS15309926R1	Cut on main river channel, wooded vegetation upland, may include some wetland vegetation from runoff	Aug. 1958	4/12/2010	Yes	154	101	36	BUL-2V-130	ga015_1943
131	LS15309936R2	Cut on main river channel, wooded vegetation upland, may include some wetland vegetation from runoff	Aug. 1958	4/12/2010	Yes	153	99	36	BUL-1V-58	ga025_1943
132	LS15309831R1	Above willow flat with more wooded species above	Aug. 1958	4/12/2010	Yes	153	99	36	BUL-1V-57	ga027_1943
133	LS15309831R2	Above wetland area in sandbar flat, trees above	Aug. 1958	4/12/2010	Yes	153	98	31	BUL-1V-57	ga027_1943
134	LS15309832R1	Above wetland area in sandbar flat, trees above	Aug. 1958	4/12/2010	Yes	153	98	31	BUL-1V-57	ga027_1943
135	LS15309832R2	Above channel area in sandbar flat, trees above	Aug. 1958	4/12/2010	Yes	153	98	32	BUL-1V-57	ga027_1943
136	LS15309832R3	Above secondary channel and willow flat, below field	Aug. 1958	4/12/2010	Yes	153	98	32	BUL-1V-57	ga027_1943
137	LS15309833R1	Above secondary channel and willow flat, below wooded area and field	Aug. 1958	4/12/2010	Yes	153	98	32	BUL-1V-56	ga027_1943
138	LS15309828R1	On main channel, upland is wooded areas between fields	Aug. 1958	4/12/2010	Yes	153	98	33	BUL-1V-56	ga027_1943
139	LS15309833R2	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	Yes	153	98	28	BUL-1V-55	ga027_1943
140	LS15309834R1	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	33	BUL-1V-54	ga030_1943
141	LS15309834R2	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	34	BUL-1V-54	ga030_1943
142	LS15309834R3	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	34	BUL-1V-54	ga030_1943
143	LS15309826R1	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	34	BUL-1V-54	ga030_1943
144	LS15309826R2	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	26	BUL-1V-54	ga030_1943
145	LS15309826R3	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	26	BUL-1V-54	ga030_1943
146	LS15309823R1	Old river bed area, primarily low & clumped willows, some trees but not many, fields are within area but have obvious drains, adjacent uplands steep & have significant runoff drainages influencing the area	Aug. 1958	4/12/2010	No	153	98	26	BUL-1V-54	ga030_1943
147	LS15309926L1	River is turning and creating an oxbow, OHWL is drawn at waters edge, vegetation is low with some trees, wet areas and fields apparent above OHWL	Aug. 1958	4/12/2010	No	153	99	23	BUL-1V-53	ga029_1943
148	LS15309926L2	River is turning and creating an oxbow, OHWL is drawn at waters edge, vegetation is low with some trees, wet areas and fields apparent above OHWL	Aug. 1958	4/12/2010	No	153	99	26	BUL-1V-59	ga025_1943
149	LS15309926L3	River is turning and creating an oxbow, OHWL is drawn at waters edge, vegetation is low with some trees, wet areas and fields apparent above OHWL	Aug. 1958	4/12/2010	No	153	99	26	BUL-1V-59	ga025_1943
150	LS15309923L1	Cut bank with steep elevations above	Aug. 1958	4/12/2010	No	153	99	26	BUL-1V-59	ga025_1943
151	LS15309923L2	Cut bank with steep elevations above	Aug. 1958	4/12/2010	No	153	99	23	BUL-1V-59	ga025_1943
152	LS15309924L1	Cut bank with steep elevations above	Aug. 1958	4/12/2010	No	153	99	23	BUL-1V-59	ga025_1943
167	LS15309813L1	Willows below most likely sandbar with diamond, scattered trees above in linear formations	Aug. 1958	4/12/2010	No	153	99	24	BUL-1V-59	ga025_1943
168	LS15309814L1	Willows below most likely sandbar with diamond, scattered trees above in linear formations and a hayed area	Aug. 1958	4/19/2010	No	153	98	13	BUL-2V-61	ga029_1943
169	LS15309811L1	Along secondary channel, willow flat area, old river bed above	Aug. 1958	4/19/2010	No	153	98	14	BUL-2V-61	ga029_1943
170	LS15309811L2	Cut bank, elevation changes above, along main river channel	Aug. 1958	4/19/2010	No	153	98	11	BUL-2V-61	ga029_1943
171	LS15309811L3	Cut bank, elevation changes above, along main river channel	Aug. 1958	4/19/2010	Yes	153	98	11	BUL-2V-68	ga029_1943
172	LS15309802L1	Sandbar flat below, steep bank and road above	Aug. 1958	4/19/2010	Yes	153	98	11	BUL-2V-68	ga029_1943
173	LS15309802L2	In a willow flat, channel above as assumed to be from overland flow, cultivated fields above	Aug. 1958	4/19/2010	Yes	153	98	2	BUL-2V-68	ga029_1943
174	LS15309835L1	On main river channel, consistent with topo change, steep elevation change	Aug. 1958	4/19/2010	Yes	154	98	2	BUL-2V-68	ga029_1943
175	LS15409836L1	On main river channel, consistent with topo change, steep elevation change	Aug. 1958	4/19/2010	Yes	154	98	35	BUL-2V-68	ga029_1943
176	LS15409836L2	On main river channel, consistent with topo change, steep elevation change	Aug. 1958	4/19/2010	Yes	154	98	36	BUL-2V-68	ga029_1943
177	LS15409825L1	Above channel, behind willow sandbar, some fields above, topo shows elevation change	Aug. 1958	4/19/2010	Yes	154	98	36	BUL-2V-149	ga029_1943
178	LS15409730L1	Above willows and below field	Aug. 1958	4/19/2010	Yes	154	98	25	BUL-2V-149	ga029_1943
179	LS15409730L2	On main river channel, below field	Aug. 1958	4/19/2010	Yes	154	97	30	BUL-2V-149	ga032_1943
180	LS15409730L3	On main river channel, below tree growth, old river bed above	Aug. 1958	4/19/2010	Yes	154	97	30	BUL-2V-149	ga031_1943
181	LS15309824R1	On main river channel, below an older depositional area	Aug. 1958	4/19/2010	No	154	97	30	BUL-2V-149	ga031_1943
182	LS15309824R2	On main river channel, at steep bank above	Aug. 1958	4/19/2010	Yes	153	98	24	BUL-2V-61	ga030_1943
183	LS15309813R1	On main river channel, at steep bank above	Aug. 1958	4/19/2010	Yes	153	98	24	BUL-2V-61	ga030_1943
184	LS15309813R2	On main river channel, at steep bank above	Aug. 1958	4/19/2010	Yes	153	98	13	BUL-2V-61	ga029_1943
185	LS15309813R3	On main river channel, old river channel above with two-tracks through the area	Aug. 1958	4/19/2010	Yes	153	98	13	BUL-2V-61	ga029_1943
186	LS15309812R1	On main river channel, old river channel above with two-tracks and fields through the area	Aug. 1958	4/19/2010	Yes	153	98	13	BUL-2V-61	ga029_1943
187	LS15309811R1	Above willow flat, remnant back channel	Aug. 1958	4/19/2010	Yes	153	98	13	BUL-2V-68	ga029_1943
188	LS15309811R2	Above willow flat, remnant back channel	Aug. 1958	4/19/2010	Yes	153	98	11	BUL-2V-68	ga029_1943
189	LS15309802R1	On bank with field above	Aug. 1958	4/19/2010	Yes	153	98	11	BUL-2V-68	ga029_1943
190	LS15309801R1	Cut bank, fields above	Aug. 1958	4/19/2010	Yes	153	98	2	BUL-2V-68	ga029_1943
191	LS15409836R1	On cut bank along main channel	Aug. 1958	4/19/2010	Yes	153	98	1	BUL-2V-68	ga029_1943
192	LS15409836R2	On cut bank along main channel	Aug. 1958	4/19/2010	Yes	154	98	36	BUL-2V-68	ga029_1943
193	LS15409731R1	On cut bank along main channel, scattered trees and fields above	Aug. 1958	4/19/2010	Yes	154	98	36	BUL-2V-68	ga029_1943
194	LS15409730R2	On cut bank along main channel, scattered trees and fields above	Aug. 1958	4/19/2010	Yes	154	97	31	BUL-2V-149	ga032_1943
			Aug. 1958	4/19/2010	Yes	154	97	30	BUL-2V-150	ga032_1943

OBJECTID	Transect	Comment	Photo	Date	Confidence	Township	Range	Section	Photo File	Topo
195	LS15409730R2	On main river channel, willow flat below, scattered trees and fields above	Aug. 1958	4/19/2010	Yes	154	97	30	BUL-2V-150	ga032_1943
196	LS15409729R1	On main river channel, island forming below, above scattered trees and two-track to field	Aug. 1958	4/19/2010	Yes	154	97	29	BUL-2V-150	ga032_1943
197	LS15409729R2	Placement based on vegetation density, willows and channels below, above older river bed, two-tracks, fields, remnant channel segments above	Aug. 1958	4/19/2010	Yes	154	97	29	BUL-2V-150	ga032_1943
198	LS15409728R1	Placement based on vegetation density, willows and channels below, above older river bed, two-tracks, fields, remnant channel segments above	Aug. 1958	4/19/2010	Yes	154	97	29	BUL-2V-150	ga032_1943
199	LS15409728R2	Above back channel, narrow wooded banded field above	Aug. 1958	4/19/2010	Yes	154	97	28	BUL-2V-150	ga032_1943
200	LS15409727R1	Above back channel, narrow wooded banded field above	Aug. 1958	4/19/2010	Yes	154	97	28	BUL-2V-150	ga032_1943
201	LS15409727R2	On main river channel, dense wooded area above	Aug. 1958	4/19/2010	Yes	154	97	27	BUL-2V-152	ga035_1943
202	LS15409726R1	On main river channel, fields above	Aug. 1958	4/19/2010	Yes	154	97	27	BUL-2V-152	ga034_1943
203	LS15409723R1	On main river channel, fields above	Aug. 1958	4/19/2010	Yes	154	97	26	BUL-2V-152	ga034_1943
204	LS15409724L1	Above secondary channel, fields above	Aug. 1958	4/19/2010	Yes	154	97	23	BUL-2V-152	ga034_1943
205	LS15409724L2	On main river channel, fields above	Sept. 1951	4/19/2010	Yes	154	97	24	340-271	ga034_1943
206	LS15409724L3	On main river channel, fields above	Sept. 1951	4/19/2010	Yes	154	97	24	340-271	ga034_1943
207	LS15409619L1	On main river channel, fields above	Sept. 1951	4/19/2010	Yes	154	97	24	340-271	ga034_1943
208	LS15409630L1	On main river channel, fields above	Sept. 1951	4/19/2010	Yes	154	96	19	340-271	ga035_1943
209	LS15409630L2	Line of demarcations, between river flow direction, vegetation below shows east, west growth, above vegetation shows north, south growth with scattered trees along old levees. '43 topo shows sandbar below OHWL	Sept. 1951	4/19/2010	Yes	154	96	30	340-271	ga036_1943
210	LS15409629L1	On main river channel, wooded vegetation above, on old river channel	Sept. 1951	4/19/2010	Yes	154	96	30	340-271	ga036_1943
211	LS15409629L2	On main river channel, wooded vegetation above, on old river channel	Sept. 1951	4/19/2010	Yes	154	96	29	340-271	ga036_1943
212	LS15409629L3	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	96	29	340-271	ga036_1943
213	LS15409621L1	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	96	29	340-271	ga036_1943
214	LS15409628L1	On main river channel, wooded vegetation above, on old river channel	Sept. 1951	4/19/2010	Yes	154	96	21	340-271	ga036_1943
215	LS15409627L1	On main river channel, wooded vegetation above, on old river channel	Sept. 1951	4/19/2010	Yes	154	96	28	340-271	ga036_1943
216	LS15409627L2	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	96	27	340-271	ga036_1943
217	LS15409627L3	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	96	27	340-271	ga038_1943
218	LS15409626L1	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	96	27	340-271	ga038_1943
219	LS15409626L2	On main river channel, appears to be an old field above	Sept. 1951	4/19/2010	Yes	154	96	26	340-271	ga038_1943
220	LS15409723R2	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	96	26	340-271	ga038_1943
221	LS15409725R1	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	97	23	340-271	ga034_1943
222	LS15409726R2	Above secondary channel, sandbar willow flat below, fields above	Sept. 1951	4/19/2010	Yes	154	97	25	340-271	ga034_1943
223	LS15409736R1	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	97	26	340-271	ga035_1943
224	LS15409736R2	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	97	36	340-271	ga035_1943
225	LS15409631R1	Above sandbar willow flat, dense larger wooded vegetation above	Sept. 1951	4/19/2010	Yes	154	97	36	340-271	ga035_1943
226	LS15409630R1	Along main river channel cut, elevation change, field above	Sept. 1951	4/19/2010	Yes	154	96	31	340-271	ga035_1943
227	LS15409630R2	On main river channel, elevation change, potential fields above	Sept. 1951	4/19/2010	Yes	154	96	30	340-271	ga037_1943
228	LS15409629R1	On main river channel, elevation change, potential fields above	Sept. 1951	4/19/2010	Yes	154	96	30	340-271	ga037_1943
229	LS15409629R2	Above sandbar willow flat, '43 topo shows elevation change	Sept. 1951	4/19/2010	Yes	154	96	29	340-271	ga037_1943
230	LS15409628R1	Above sandbar willow flat, '43 topo shows elevation change	Sept. 1951	4/19/2010	Yes	154	96	29	340-271	ga037_1943
231	LS15409628R2	On main river channel, dense wooded area above, large island in river	Sept. 1951	4/19/2010	Yes	154	96	28	340-271	ga037_1943
153	LS15309924L2	Cut bank with trees and fields above	Sept. 1951	4/19/2010	Yes	154	96	28	340-271	ga037_1943
154	LS15309925L1	Cut bank with trees and fields above	Aug. 1958	4/12/2010	No	153	99	24	BUL-1V-58	ga025_1943
155	LS15309830L3	Cut bank with trees and fields above	Aug. 1958	4/12/2010	No	153	99	24	BUL-1V-58	ga025_1943
156	LS15309830L2	OHWL at obvious line between shrubs and trees	Aug. 1958	4/12/2010	No	153	98	30	BUL-1V-57	ga027_1943
157	LS15309831L1	On main river channel, near oxbow outlet, cut bank with trees above	Aug. 1958	4/12/2010	No	153	98	30	BUL-1V-57	ga027_1943
158	LS15309830L3	On main river channel, cut bank with trees above	Aug. 1958	4/12/2010	Yes	153	98	31	BUL-1V-57	ga027_1943
159	LS15309829L1	On main river channel, cut bank with trees and fields above	Aug. 1958	4/12/2010	Yes	153	98	30	BUL-1V-56	ga027_1943
160	LS15309829L2	On main river channel, cut bank with trees and fields above	Aug. 1958	4/12/2010	Yes	153	98	29	BUL-1V-56	ga027_1943
161	LS15309822L1	Cut bank, barren sandbar below, elevation changes above	Aug. 1958	4/12/2010	Yes	153	98	29	BUL-1V-56	ga027_1943
162	LS15309822L2	Cut bank, trees above, along main river channel	Aug. 1958	4/19/2010	Yes	153	98	22	BUL-2V-60	ga030_1943
163	LS15309823L1	Cut bank, trees above, along main river channel	Aug. 1958	4/19/2010	Yes	153	98	22	BUL-2V-60	ga030_1943
164	LS15309823L2	Cut bank, trees above, along main river channel	Aug. 1958	4/19/2010	Yes	153	98	23	BUL-2V-60	ga030_1943
165	LS15309824L1	Cut bank, scattered trees above, along main river channel	Aug. 1958	4/19/2010	Yes	153	98	23	BUL-2V-61	ga030_1943
166	LS15309813L1	Above willow flat with few trees, several trees above	Aug. 1958	4/19/2010	Yes	153	98	24	BUL-2V-61	ga030_1943
399	LS15210312L2	Wooded area with fields and irrigation canal above OHWL, OHWL on main channel	Aug. 1958	4/22/2010	Yes	153	98	13	BUL-2V-61	ga029_1943
400	LS15210207L1	Wooded area with fields and irrigation canal above OHWL, OHWL on main channel	Aug. 1958	4/22/2010	Yes	152	103	12	BUL-1V-38	ga004_1943
401	LS15210206L1	Wooded area with fields and irrigation canal above OHWL, OHWL on main channel	Aug. 1958	4/22/2010	Yes	152	102	7	BUL-1V-38	ga004_1943
402	LS15210206L2	Wooded area with fields above OHWL, OHWL on main channel	Aug. 1958	4/22/2010	Yes	152	102	6	BUL-1V-38	ga004_1943
403	LS15310234L1	Along main river channel, wetland vegetation above OHWL attributed to upland drains from fields above	Aug. 1958	4/22/2010	Yes	152	102	6	BUL-1V-38	ga004_1943
404	LS15310233L1	Along main river channel, fields above with drainage lines to river creating some wetland above OHWL	Aug. 1958	4/22/2010	Yes	153	102	34	BUL-2V-7	ga004_1943
405	LS15310233L2	OHWL above willow flat, fields above with drains to river, unable to determine vegetation type immediately	Aug. 1958	4/22/2010	Yes	153	102	33	BUL-2V-7	ga004_1943
406	LS15310228L1	OHWL above willow flat, hayed field directly above	Aug. 1958	4/22/2010	Yes	153	102	33	BUL-2V-7	ga004_1943

OBJECTID	Transect	Comment	Photo_Date	Date	Confidence	Township	Range	Section	Photo_File	Topo
407	LS15310228L2	Above willow flat with some hayed areas; upland includes hayed fields and several irrigation manipulations	Aug. 1958	4/22/2010	Yes	153	102	28	BUL-2V-8	ga004_1943
408	LS15310221L1	OHWL at elevation change in hayed area	Aug. 1958	4/22/2010	Yes	153	102	21	BUL-2V-8	ga004_1943
409	LS15310228L3	OHWL follows contour lines and wetland vegetation in back water channel, diverting north at this point, resuming it flow downstream	Aug. 1958	4/22/2010	Yes	153	102	28	BUL-2V-8	ga004_1943
410	LS15310221L2	Above channel where Trenton Lake enters into the river, sandbar willow below OHWL, trees above	Aug. 1958	4/22/2010	Yes	153	102	21	BUL-2V-8	ga004_1943
411	LS15310221L3	OHWL above sandbar willow flat and below field areas, irrigation canal about 1000' north of OHWL	Aug. 1958	4/22/2010	Yes	153	102	21	BUL-2V-8	ga004_1943
412	LS15310222L1	OHWL above willow flat, below row of trees along irrigation dam and fields	Aug. 1958	4/22/2010	Yes	153	102	22	BUL-2V-36	ga004_1943
413	LS15310222L2	Above willow flat, upland is a field	Aug. 1958	4/22/2010	Yes	153	102	22	BUL-2V-36	ga004_1943
414	LS15310222L3	Above sandbar willow flat, follows vegetation line and irrigation ditch	Aug. 1958	4/22/2010	Yes	153	102	22	BUL-2V-36	ga004_1943
415	LS15310223L1	Above sandbar willow flat, follows vegetation line and irrigation ditch	Aug. 1958	4/22/2010	Yes	153	102	22	BUL-2V-36	ga004_1943
416	LS15310226L1	Above sandbar willow flat, upland distinguished by tree growth and two-tracks	Aug. 1958	4/22/2010	Yes	153	102	23	BUL-2V-38	ga004_1943
417	LS15310226L2	Above willow flat, below hayed area with significant disturbance of trailing and cultivation	Aug. 1958	4/22/2010	Yes	153	102	26	BUL-2V-38	ga004_1943
418	LS15310225L1	Above sandbar willow flat, with one small hayed inclusion, upland area includes fields, road, and trails	Aug. 1958	4/22/2010	Yes	153	102	26	BUL-2V-5	ga004_1943
419	LS15310225L2	Above sandbar willow flat, with one small hayed inclusion, upland area includes fields, road, and trails	Aug. 1958	4/22/2010	Yes	153	102	25	BUL-2V-5	ga008_1943
420	LS15310225L3	Back water area, OHWL above back water channel, below upland road	Aug. 1958	4/22/2010	Yes	153	102	25	BUL-2V-5	ga008_1943
421	LS15310225L4	OHWL above sandbar willow flat, below wooded area with established trails	Aug. 1958	4/22/2010	Yes	153	102	25	BUL-2V-5	ga008_1943
422	LS15310130L1	On main river channel, upland low vegetation with established trails	Aug. 1958	4/22/2010	Yes	153	102	30	BUL-2V-5	ga008_1943
423	LS15310119L1	Above willow flat, below area with scattered trees and established trails	Aug. 1958	4/22/2010	Yes	153	101	19	BUL-2V-39	ga008_1943
424	LS15310119L2	Above willow flat, below area with scattered trees and established trails	Aug. 1958	4/22/2010	Yes	153	101	19	BUL-2V-39	ga007_1943
425	LS15310118L1	OHWL is between sandbar willow flat, and area with dense tree growth	Aug. 1958	4/22/2010	Yes	153	101	18	BUL-2V-39	ga007_1943
426	LS15310118L2	Follows lower channel in willow flat, drained fields above	Aug. 1958	4/22/2010	Yes	153	101	18	BUL-2V-39	ga007_1943
427	LS15310213L1	Cut bank with fields above	Aug. 1958	4/22/2010	Yes	153	102	13	BUL-2V-91	ga007_1943
428	LS15310112L1	Cut bank with fields above	Aug. 1958	4/22/2010	Yes	153	102	12	BUL-2V-91	ga007_1943
429	LS15310212L2	On main river channel, field upland	Aug. 1958	4/22/2010	Yes	153	102	12	BUL-2V-91	ga007_1943
430	LS15310201L1	On main river channel, upland is disturbed from railroad	Aug. 1958	4/22/2010	Yes	153	102	12	BUL-2V-91	ga007_1943
431	LS15310106L1	On main river channel, upland is disturbed from railroad	Aug. 1958	4/22/2010	Yes	153	102	11	BUL-2V-91	ga007_1943
432	LS15310106L2	On main river channel, upland is disturbed from railroad	Aug. 1958	4/22/2010	Yes	153	101	6	BUL-2V-91	ga007_1943
433	LS15210321R1	Above willow flat, trees and fields above	Aug. 1958	4/22/2010	Yes	152	103	6	BUL-1V-13	ga002_1943
434	LS15210315R1	Above willow flat, trees and fields above	Aug. 1958	4/22/2010	Yes	152	103	21	BUL-1V-13	ga002_1943
435	LS15210315R2	Along construction area for Furlong diversion, willows below OHWL	Aug. 1958	4/22/2010	Yes	152	103	15	BUL-1V-13	ga002_1943
436	LS15210315R3	Above older back channel, with wooded area above	Aug. 1958	4/22/2010	Yes	152	103	15	BUL-1V-13	ga002_1943
437	LS15210315R4	Above older back channel, with wooded area above	Aug. 1958	4/22/2010	Yes	152	103	15	BUL-1V-13	ga002_1943
438	LS15210310R1	Above older back channel, with wooded area above	Aug. 1958	4/22/2010	Yes	152	103	15	BUL-1V-13	ga002_1943
439	LS15210315R5	OHWL above willow flat, below wooded area	Aug. 1958	4/22/2010	Yes	152	103	10	BUL-1V-13	ga002_1943
440	LS15210315R6	OHWL above back channel, follows more mature tree growth	Aug. 1958	4/22/2010	Yes	152	103	15	BUL-1V-13	ga002_1943
441	LS15210323R1	Follows back channel along more mature tree growth	Aug. 1958	4/22/2010	Yes	152	103	15	BUL-1V-13	ga002_1943
442	LS15210323R2	OHWL above barren shore area and below established trees	Aug. 1958	4/22/2010	Yes	152	103	23	BUL-1V-11	ga002_1943
443	LS15210314R1	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	103	23	BUL-1V-11	ga002_1943
444	LS15210313R1	Cut bank along main river channel with small willow flat in front of bank, steep elevation change	Aug. 1958	4/22/2010	Yes	152	103	14	BUL-1V-11	ga002_1943
445	LS15210313R2	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	103	13	BUL-1V-11	ga005_1943
446	LS15210312R1	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	103	13	BUL-1V-11	ga005_1943
447	LS15210207R1	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	103	12	BUL-1V-38	ga005_1943
448	LS15210207R2	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	102	7	BUL-1V-38	ga004_1943
449	LS15210206R1	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	102	7	BUL-1V-38	ga004_1943
450	LS15210206R2	Cut bank along main river channel	Aug. 1958	4/22/2010	Yes	152	102	6	BUL-1V-38	ga004_1943
451	LS15310234R1	On cut bank behind secondary channel, willow flat island in front, fields upland	Aug. 1958	4/22/2010	Yes	152	102	6	BUL-1V-38	ga004_1943
452	LS15310234R2	Cut bank along main river channel, fields upland	Aug. 1958	4/22/2010	Yes	152	102	34	BUL-1V-28	ga004_1943
453	LS15310234R3	Cut bank along main river channel, upland is established wooded area	Aug. 1958	4/22/2010	Yes	153	102	34	BUL-1V-36	ga004_1943
454	LS15310227R1	Cut bank along main river channel, scattered trees and fields above	Aug. 1958	4/22/2010	Yes	153	102	34	BUL-2V-7	ga004_1943
455	LS15310227R2	Cut bank along main river channel, scattered trees and fields above	Aug. 1958	4/22/2010	Yes	153	102	27	BUL-2V-8	ga004_1943
456	LS15310227R3	On main river channel, field upland	Aug. 1958	4/22/2010	Yes	153	102	27	BUL-2V-8	ga004_1943
457	LS15310222R1	On main river channel, sandbar in front and field upland	Aug. 1958	4/22/2010	Yes	153	102	27	BUL-2V-37	ga004_1943
458	LS15310227R4	Sandbar willow below, field upland	Aug. 1958	4/22/2010	Yes	153	102	27	BUL-2V-37	ga004_1943
459	LS15310226R1	Sandbar willows flat below with numerous channels though it, hayed field upland	Aug. 1958	4/22/2010	Yes	153	102	27	BUL-2V-37	ga004_1943
460	LS15310226R2	Sandbar willows flat below with numerous channels though it, hayed field upland	Aug. 1958	4/22/2010	Yes	153	102	26	BUL-2V-6	ga004_1943
461	LS15310226R3	Dense vegetation below with channel though willows, farming has been attempted in a portion of it below OHWL, OHWL follows road with drier fields above	Aug. 1958	4/22/2010	Yes	153	102	26	BUL-2V-6	ga004_1943
462	LS15310236R1	OHWL above back channel and willow flat, upland includes a road and fields	Aug. 1958	4/22/2010	Yes	153	102	26	BUL-2V-6	ga004_1943
463	LS15310225R1	OHWL above willow flat, sparse vegetation with road and a line of trees above	Aug. 1958	4/22/2010	Yes	153	102	36	BUL-2V-6	ga004_1943
464	LS15310225R2	OHWL on cut bank, willow flat below, more mature vegetation and fields above	Aug. 1958	4/22/2010	Yes	153	102	25	BUL-2V-6	ga008_1943
465	LS15310130R1	OHWL on cut bank, willow flat below, more mature vegetation and fields above	Aug. 1958	4/22/2010	Yes	153	102	25	BUL-2V-5	ga008_1943
466	LS15310130R2	Depositional dirt from upland, row of trees above OHWL	Aug. 1958	4/22/2010	Yes	153	101	30	BUL-2V-5	ga008_1943

OBJECTID	Transect	Comment	Photo_Date	Date	Confidence	Township	Range	Section	Photo_File	Topo
467	LS15310130R3	On main channel, road directly above that parallels river channel	Aug. 1958	4/22/2010	Yes	153	101	30	BUL-2V-40	ga008_1943
468	LS15310120R1	On main channel, road directly above that parallels river channel	Aug. 1958	4/22/2010	Yes	153	101	20	BUL-2V-40	ga008_1943
469	LS15310120R2	On main channel, road directly above that parallels river channel	Aug. 1958	4/22/2010	Yes	153	101	20	BUL-2V-40	ga008_1943
470	LS15310117R1	On main channel, road directly above that parallels river channel	Aug. 1958	4/22/2010	Yes	153	101	20	BUL-2V-40	ga008_1943
471	LS15310118R1	On main channel, road directly above that parallels river channel	Aug. 1958	4/22/2010	Yes	153	101	17	BUL-2V-40	ga007_1943
472	LS15310118R2	OHWL is behind a mostly barren depositional area, upland vegetation is mature trees	Aug. 1958	4/22/2010	Yes	153	101	18	BUL-2V-40	ga007_1943
473	LS15310107R1	OHWL follows old back channel with various flow striations, upland is more dense vegetation and fields	Aug. 1958	4/22/2010	Yes	153	101	18	BUL-2V-91	ga007_1943
474	LS15310107R2	OHWL follows old back channel with various flow striations, upland is more dense vegetation and fields	Aug. 1958	4/22/2010	Yes	153	101	7	BUL-2V-91	ga007_1943
475	LS15310106R1	OHWL follows old back channel with various flow striations, upland is more dense vegetation and fields	Aug. 1958	4/22/2010	Yes	153	101	7	BUL-2V-91	ga007_1943
476	LS15310106R2	OHWL above sandbar willow flat with line of trees and road upland	Aug. 1958	4/22/2010	Yes	153	101	6	BUL-2V-91	ga007_1943
477	LS15309402L2	Cut bank on former White Earth River, creek combined with river in the north edge of section 2, OHWL follows cut bank	Sept. 1951	4/28/2010	Yes	153	94	6	BUL-2V-91	ga007_1943
478	LS15309402L3	Cut bank on former White Earth River, river combined with Missouri river in the north edge of section 2, OHWL follows cut bank	Sept. 1951	4/28/2010	Yes	153	94	2	340-275	ga051_1943
479	LS15309401L1	Cut bank on former White Earth River, river combined with Missouri river in the north edge of section 2, OHWL follows cut bank	Sept. 1951	4/28/2010	Yes	153	94	2	340-275	ga051_1943
480	LS15309401L2	Cut bank on former White Earth River, river combined with Missouri river in the north edge of section 2, OHWL follows cut bank	Sept. 1951	4/28/2010	Yes	153	94	1	340-275	ga051_1943
481	LS15309401L3	Cut bank on former White Earth River, river combined with Missouri river in the north edge of section 2, OHWL follows cut bank	Sept. 1951	4/28/2010	Yes	153	94	1	340-275	ga051_1943
482	LS15309306L1	Cut bank on former White Earth River, river combined with Missouri river in the north edge of section 2, OHWL follows cut bank	Sept. 1951	4/28/2010	Yes	153	94	1	340-275	ga051_1943
232	LS15409627R1	On main river channel, field above, large island in river	Sept. 1951	4/28/2010	Yes	153	93	6	340-275	ga051_1943
233	LS15409627R2	On main river channel, field above, large island in river	Sept. 1951	4/19/2010	Yes	154	96	27	340-271	ga037_1943
234	LS15409626R1	On main river channel, field above	Sept. 1951	4/19/2010	Yes	154	96	27	340-271	ga039_1943
235	LS15409626R2	On main river channel, '43 topo shows elevation change	Sept. 1951	4/19/2010	Yes	154	96	26	340-271	ga039_1943
236	LS15409626R3	Follows old channel, old island below OHWL, evidenced by '43 photos and follows 1800' '43 topo line	Sept. 1951	4/19/2010	Yes	154	96	26	340-271	ga038_1943
237	LS15409625R1	Follows old channel, old island below OHWL, evidenced by '43 photos and follows 1800' '43 topo line	Sept. 1951	4/20/2010	No	154	96	26	340-271	ga039_1943
238	LS15409624L1	On main river channel, fields above, cut bank	Sept. 1951	4/20/2010	No	154	96	25	340-271	ga039_1943
239	LS15409625L1	On main river channel, fields above, cut bank	Sept. 1951	4/20/2010	Yes	154	96	24	340-273	ga038_1943
240	LS15409530L1	On main river channel, fields above, cut bank	Sept. 1951	4/20/2010	Yes	154	96	25	340-273	ga038_1943
241	LS15409530L2	On secondary river channel, behind some islands, fields above	Sept. 1951	4/20/2010	Yes	154	95	30	340-273	ga040_1943
242	LS15409529L1	On secondary river channel, behind some islands, fields above	Sept. 1951	4/20/2010	Yes	154	95	30	340-273	ga040_1943
243	LS15409529L2	On secondary river channel, behind some islands, fields above	Sept. 1951	4/20/2010	Yes	154	95	29	340-273	ga040_1943
244	LS15409529L3	On main river channel, below stabilized oxbow area with trees above	Sept. 1951	4/20/2010	Yes	154	95	29	340-273	ga041_1943
245	LS15409533L1	On main river channel, below stabilized oxbow area with trees above	Sept. 1951	4/20/2010	Yes	154	95	29	340-273	ga041_1943
246	LS15409528L1	At edge of sandbar willow flat in oxbow, below older oxbow area, less dense vegetation and scattered trees above	Sept. 1951	4/20/2010	Yes	154	95	33	340-273	ga041_1943
247	LS15409528L2	At edge of sandbar willow flat in oxbow, below older oxbow area, less dense vegetation, trails below believe to be associated with pipeline in area	Sept. 1951	4/20/2010	No	154	95	28	340-273	ga041_1943
248	LS15409521L1	At edge of sandbar willow flat in oxbow, below older oxbow area, less dense vegetation, trails below believe to be associated with pipeline in area	Sept. 1951	4/20/2010	No	154	95	28	340-273	ga041_1943
249	LS15409522L1	At edge of sandbar willow flat in oxbow, below older oxbow area, less dense vegetation, trails below believe to be associated with pipeline in area	Sept. 1951	4/20/2010	No	154	95	21	340-273	ga041_1943
250	LS15409522L2	At edge of sandbar willow flat in oxbow, below older oxbow area, less dense vegetation, trails below believe to be associated with pipeline in area	Sept. 1951	4/20/2010	No	154	95	22	340-273	ga041_1943
251	LS15409526L1	On main river channel, behind islands, wooded growth above	Sept. 1951	4/20/2010	No	154	95	22	340-273	ga042_1943
252	LS15409625R2	Follows old channel, old island below OHWL, evidenced by '43 photos and follows 1800' '43 topo line	Sept. 1951	4/20/2010	Yes	154	95	26	340-273	ga042_1943
253	LS15409531R1	Follows old channel, old island below OHWL, evidenced by '43 photos and follows 1800' '43 topo line	Sept. 1951	4/20/2010	No	154	96	25	340-273	ga039_1943
254	LS15409531R2	Follows old channel, old island below OHWL, evidenced by '43 photos and follows 1800' '43 topo line	Sept. 1951	4/20/2010	No	154	95	31	340-273	ga039_1943
255	LS15409531R3	Follows old channel, old island below OHWL, evidenced by '43 photos and follows 1800' '43 topo line	Sept. 1951	4/20/2010	No	154	95	31	340-273	ga041_1943
256	LS15409532R1	Along main river channel, where it appears back channel enters river	Sept. 1951	4/20/2010	No	154	95	31	340-273	ga041_1943
257	LS15409532R2	On main river channel, wooded vegetation and fields above	Sept. 1951	4/20/2010	No	154	95	32	340-273	ga041_1943
258	LS15409533R1	On main river channel, wooded vegetation and fields above	Sept. 1951	4/20/2010	Yes	154	95	32	340-273	ga041_1943
259	LS15409533R2	On main river channel, wooded vegetation and fields above	Sept. 1951	4/20/2010	Yes	154	95	33	340-273	ga041_1943
260	LS15409534R1	On main river channel, wooded vegetation and fields above, turns above a small sandbar willow flat	Sept. 1951	4/20/2010	Yes	154	95	33	340-273	ga041_1943
261	LS15409527R1	On main river channel, wooded vegetation and fields above, turns along wood line edge downstream	Sept. 1951	4/20/2010	Yes	154	95	34	340-273	ga041_1943
262	LS15409527R2	Along edge of sandbar willow flat, below wooded vegetation	Sept. 1951	4/20/2010	Yes	154	95	27	340-273	ga041_1943
263	LS15409526R1	Along edge of sandbar willow flat, below wooded vegetation	Sept. 1951	4/20/2010	Yes	154	95	27	340-273	ga043_1943
264	LS15409526R2	Along edge of sandbar willow flat, below wooded vegetation	Sept. 1951	4/20/2010	Yes	154	95	26	340-273	ga043_1943
265	LS15409525R1	Along edge of sandbar willow flat, below wooded vegetation	Sept. 1951	4/20/2010	Yes	154	95	26	340-273	ga043_1943
266	LS15409536R1	On main river channel, trees above	Sept. 1951	4/20/2010	Yes	154	95	25	340-273	ga043_1943
267	LS15409526L2	On main river channel, trees above	Sept. 1951	4/20/2010	Yes	154	95	26	340-273	ga043_1943
268	LS15409526L3	On back channel, above sandbar willow flat, taller more mature trees above	Sept. 1951	4/20/2010	Yes	154	95	26	340-273	ga042_1943
269	LS15409525L1	On back channel, above sandbar willow flat, taller more mature trees above	Sept. 1951	4/20/2010	Yes	154	95	26	340-273	ga042_1943
270	LS15409525L2	On back channel, above sandbar willow flat, taller more mature trees above	Sept. 1951	4/20/2010	Yes	154	95	25	340-273	ga042_1943
271	LS15409430L1	On wider back channel, island below and taller more mature trees above	Sept. 1951	4/20/2010	Yes	154	95	25	340-273	ga042_1943
272	LS15409430L2	On wider back channel, island below and taller more mature trees above	Sept. 1951	4/20/2010	Yes	154	94	30	340-273	ga042_1943
273	LS15409431R1	On main river channel, cut bank, '43 topo shows elevation change	Sept. 1951	4/20/2010	Yes	154	94	30	340-273	ga043_1943
274	LS15409431R2	On main river channel, cut bank, '43 topo shows elevation change	Sept. 1951	4/20/2010	Yes	154	94	31	340-273	ga043_1943
275	LS15409431R3	On main river channel, cut bank, '43 topo shows elevation change, beginning of older oxbow downstream	Sept. 1951	4/20/2010	Yes	154	94	31	340-273	ga043_1943

OBJECTID	Transect	Comment	Photo_Date	Date	Confidence	Township	Range	Section	Photo_File	Topo
276	LS15409429L1	Above sandbar willow flat behind back channel, more mature vegetation above	Sept. 1951	4/20/2010	Yes	154	94	29	340-275	ra047_1943
277	LS15409429L2	Above sandbar willow flat behind back channel, more mature vegetation above	Sept. 1951	4/20/2010	Yes	154	94	29	340-275	ra047_1943
278	LS15409428L1	Above sandbar willow flat behind back channel, more mature vegetation above	Sept. 1951	4/20/2010	Yes	154	94	28	340-275	ra047_1943
279	LS15409428L2	Above sandbar willow flat behind back channel, more mature vegetation above	Sept. 1951	4/20/2010	Yes	154	94	28	340-275	ra047_1943
280	LS15409428L3	On main channel, cut bank, steep elevation change above	Sept. 1951	4/20/2010	Yes	154	94	28	340-275	ra047_1943
281	LS15409427L1	On main channel, cut bank, steep elevation change above	Sept. 1951	4/20/2010	Yes	154	94	28	340-275	ra047_1943
282	LS15409427L2	On main channel, cut bank, steep elevation change above	Sept. 1951	4/20/2010	Yes	154	94	27	340-275	ra047_1943
283	LS15409435L1	On main channel, cut bank, steep elevation change above	Sept. 1951	4/20/2010	Yes	154	94	27	340-275	ra051_1943
284	LS15409435L2	On main channel, cut bank, steep elevation change above	Sept. 1951	4/20/2010	Yes	154	94	35	340-275	ra051_1943
285	LS15309402L1	Cut bank, field directly above	Sept. 1951	4/20/2010	Yes	154	94	35	340-275	ra051_1943
286	LS15309307L1	Above willows behind back channel, steep elevation changes upland	Sept. 1951	4/20/2010	Yes	153	94	2	340-275	ra051_1943
287	LS15309307L2	Above willows behind back channel, steep elevation changes upland	Sept. 1951	4/20/2010	Yes	153	93	7	340-275	ra051_1943
288	LS15309308L1	Above sandbar willow flat, behind back channel, upland change to older river bed	Sept. 1951	4/20/2010	Yes	153	93	7	340-275	ra058_1943
289	LS15309317L1	On main river bank, farmland upland	Sept. 1951	4/20/2010	Yes	153	93	8	340-275	ra058_1943
290	LS15309317L2	On main river bank, farmland upland	Sept. 1951	4/20/2010	Yes	153	93	17	340-275	ra058_1943
291	LS15309320L1	On main river bank, mature vegetation upland	Sept. 1951	4/20/2010	Yes	153	93	17	340-275	ra058_1943
292	LS15309320L2	On main river bank, mature vegetation upland	Sept. 1951	4/20/2010	Yes	153	93	20	340-275	ra058_1943
293	LS15309620L3	On main river bank, mature woodland vegetation upland	Sept. 1951	4/20/2010	Yes	153	93	20	340-275	ra059_1943
294	LS15409432R1	On main river channel, old river bed upland, '43 topo shows elevation change	Sept. 1951	4/20/2010	Yes	153	90	20	340-275	ra059_1943
295	LS15409432R2	On main river channel, old river bed upland, '43 topo shows elevation change	Sept. 1951	4/20/2010	Yes	154	94	32	340-275	ra047_1943
296	LS15409433R1	On main river channel, old river bed upland, '43 topo shows elevation change	Sept. 1951	4/20/2010	Yes	154	94	32	340-275	ra047_1943
297	LS15409433R2	On main river channel, mature vegetation on upland peninsula	Sept. 1951	4/20/2010	Yes	154	94	33	340-275	ra047_1943
298	LS15409428R1	Elevation change above a barren area on main river channel, mature vegetation upland	Sept. 1951	4/20/2010	Yes	154	94	33	340-275	ra047_1943
299	LS15409434R1	Vegetation changes at OHWL, mature upland vegetation, sandbar willows below on back channel	Sept. 1951	4/20/2010	Yes	154	94	28	340-275	ra047_1943
300	LS15409433R3	Vegetation changes at OHWL, mature upland vegetation, sandbar willows below on back channel	Sept. 1951	4/20/2010	Yes	154	94	34	340-275	ra047_1943
301	LS15409433R4	Vegetation changes at OHWL, mature upland vegetation, sandbar willows below on back channel, large island formed between back channel and main channel	Sept. 1951	4/20/2010	Yes	154	94	33	340-275	ra047_1943
302	LS15309404R1	Vegetation changes at OHWL, mature upland vegetation, sandbar willows below on back channel, large island formed between back channel and main channel	Sept. 1951	4/20/2010	Yes	154	94	33	340-275	ra047_1943
303	LS15309404R2	Vegetation changes at OHWL, mature upland vegetation, behind a smaller back channel with sandbar willow flat	Sept. 1951	4/20/2010	Yes	153	94	4	340-275	ra047_1943
304	LS15309409R1	Along steep edge of upland, sandbar willow flat below	Sept. 1951	4/20/2010	Yes	153	94	4	340-275	ra047_1943
305	LS15309410R1	Along steep edge of upland, sandbar willow flat below	Sept. 1951	4/20/2010	Yes	153	94	9	340-275	ra047_1943
306	LS15309410R2	On bank of main channel, below steep upland elevation change, cut bank	Sept. 1951	4/20/2010	Yes	153	94	10	340-275	ra047_1943
307	LS15309410R3	On bank of main channel, below steep upland elevation change, cut bank	Sept. 1951	4/20/2010	Yes	153	94	10	340-275	ra047_1943
308	LS15309411R1	On bank of main channel, below steep upland elevation change, cut bank	Sept. 1951	4/20/2010	Yes	153	94	10	340-275	ra051_1943
309	LS15309411R2	Sandbar willows below OHWL, elevation change with mature vegetation upland	Sept. 1951	4/20/2010	Yes	153	94	11	340-275	ra051_1943
310	LS15309412R1	Sandbar willows below OHWL, elevation change with field upland	Sept. 1951	4/20/2010	Yes	153	94	11	340-275	ra051_1943
311	LS15309412R2	On main river channel, elevation change and woodland vegetation upland	Sept. 1951	4/20/2010	Yes	153	94	12	340-275	ra051_1943
312	LS15309320R1	On main river channel, elevation change and woodland vegetation upland	Sept. 1951	4/20/2010	Yes	153	94	12	340-275	ra051_1943
313	LS15309318R1	On main river channel, elevation change and field upland	Sept. 1951	4/20/2010	Yes	153	93	7	340-275	ra051_1943
314	LS15309318R2	On main river channel, elevation change and mature vegetation upland	Sept. 1951	4/20/2010	Yes	153	93	18	340-275	ra051_1943
315	LS15309317R1	On main river channel, elevation change and mature vegetation upland	Sept. 1951	4/20/2010	Yes	153	93	18	340-275	ra058_1943
316	LS15309317R2	Above sandbar willow flat with trees above, follows back channel	Sept. 1951	4/20/2010	Yes	153	93	17	340-275	ra058_1943
317	LS15309320R1	Follows back channel, above sandbar willow flat, old river bed behind	Sept. 1951	4/20/2010	Yes	153	93	17	340-275	ra058_1943
318	LS15309320R2	Follows back channel, above sandbar willow flat, old river bed behind	Sept. 1951	4/20/2010	Yes	153	93	20	340-275	ra058_1943
319	LS15309320R3	On main river channel behind sandbar, old river bed behind	Sept. 1951	4/20/2010	Yes	153	93	20	340-275	ra059_1943
320	LS15309329L1	On main river bank, on elevation change, mature vegetation upland	Sept. 1951	4/20/2010	Yes	153	93	20	340-275	ra059_1943
321	LS15309329L2	Above barren sand area on main river channel, mature vegetation above	Sept. 1951	4/20/2010	Yes	153	93	29	340-301	ra059_1943
322	LS15309328L1	Above area with little vegetation, along main river channel, more mature vegetation above	Sept. 1951	4/20/2010	Yes	153	93	29	340-301	ra059_1943
323	LS15309328L2	Along flow line, slight change in vegetation cover, trees developing above on old river bed	Sept. 1951	4/20/2010	Yes	153	93	28	340-301	ra059_1943
324	LS15309327L1	Along flow line, slight change in vegetation cover, trees developing above on old river bed	Sept. 1951	4/20/2010	Yes	153	93	27	340-301	ra059_1943
325	LS15309327L2	Along vegetation line, created by backwater flooding, trees and fields above OHWL	Sept. 1951	4/20/2010	Yes	153	93	27	340-301	ra059_1943
326	LS15309328L3	Along vegetation line, created by backwater flooding, trees and fields above OHWL	Sept. 1951	4/20/2010	Yes	153	93	27	340-301	ra059_1943
327	LS15309321L1	Along vegetation line, created by backwater flooding, trees and fields above OHWL	Sept. 1951	4/20/2010	Yes	153	93	28	340-301	ra059_1943
328	LS15309322L1	Along vegetation line, created by backwater flooding, trees and fields above OHWL	Sept. 1951	4/20/2010	Yes	153	93	21	340-301	ra059_1943
329	LS15309327L3	Along vegetation line, created by backwater flooding, trees above OHWL	Sept. 1951	4/20/2010	Yes	153	93	22	340-301	ra059_1943
330	LS15309326L1	On main river channel, at elevation change	Sept. 1951	4/20/2010	Yes	153	93	27	340-301	ra059_1943
331	LS15309326L2	On main river channel, cut bank at elevation change	Sept. 1951	4/20/2010	Yes	153	93	26	340-301	ra066_1943
332	LS15309326L3	On main river channel, cut bank at elevation change, two-track above	Sept. 1951	4/20/2010	Yes	153	93	26	340-301	ra066_1943
333	LS15309335L1	On main river channel, mature trees upland	Sept. 1951	4/20/2010	Yes	153	93	26	340-301	ra066_1943
334	LS15309335L2	Above sandbar willow flat, upland with mature trees	Sept. 1951	4/20/2010	Yes	153	93	35	340-301	ra066_1943
335	LS15209304L1	Above back channel cut, mature trees upland, island in front of channel	Sept. 1951	4/20/2010	Yes	152	93	4	340-301	ra066_1943

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336	LS15209304L2	On main river channel, mature trees upland								
337	LS15209304L3	Above sandbar willow flat on main river channel, mature trees upland	Sept. 1951	4/20/2010	Yes	152	93	4	340-301	pa066_1943
338	LS15209310L1	Above sandbar willow flat on main river channel, mature trees upland	Sept. 1951	4/20/2010	Yes	152	93	4	340-301	pa066_1943
339	LS15209310L2	On main river channel, houses upland	Sept. 1951	4/20/2010	Yes	152	93	10	340-301	pa066_1943
340	LS15209311L1	On main river channel, two-track and major drainage upland, drainage enter river downstream	Sept. 1951	4/20/2010	Yes	152	93	10	340-301	pa066_1943
341	LS15209311L2	On main river channel, just below where drainage enters river, steep topo change	Sept. 1951	4/20/2010	Yes	152	93	11	340-301	pa066_1943
342	LS15209311L3	On main river channel, steep topo change, cut bank	Sept. 1951	4/20/2010	Yes	152	93	11	340-301	pa074_1943
343	LS15209314L1	On main river channel, steep topo change, cut bank	Sept. 1951	4/20/2010	Yes	152	93	11	340-301	pa074_1943
344	LS15309329R1	On topo change, above a sandbar with a band of sandbar willow	Sept. 1951	4/20/2010	Yes	152	93	14	340-301	pa074_1943
345	LS15309329R2	On main river channel, at topo elevation change, two-track on upland	Sept. 1951	4/20/2010	Yes	152	93	29	340-301	pa059_1943
346	LS15309332R1	On main river channel, at topo elevation change, two-track on upland	Sept. 1951	4/20/2010	Yes	153	93	29	340-301	pa059_1943
347	LS15309333R1	On main river channel, at topo elevation change, field upland	Sept. 1951	4/20/2010	Yes	153	93	29	340-301	pa059_1943
348	LS15309333R2	On main river channel, at topo elevation change, field upland	Sept. 1951	4/20/2010	Yes	153	93	33	340-301	pa059_1943
349	LS15309334R1	On main river channel, at topo elevation change, field upland	Sept. 1951	4/20/2010	Yes	153	93	33	340-301	pa059_1943
350	LS153093327R1	On main river channel, at topo elevation change, field upland	Sept. 1951	4/20/2010	Yes	153	93	34	340-301	pa059_1943
351	LS15309327R2	On main river channel, at topo elevation change, on old river bed	Sept. 1951	4/20/2010	Yes	153	93	27	340-301	pa059_1943
352	LS15309326R1	Follows water line on willow flat, field upland	Sept. 1951	4/20/2010	Yes	153	93	27	340-301	pa066_1943
353	LS15309335R1	On main river channel, topo change	Sept. 1951	4/20/2010	Yes	153	93	26	340-301	pa066_1943
354	LS15309335R2	On flow line above willow flat	Sept. 1951	4/20/2010	Yes	153	93	35	340-301	pa066_1943
355	LS15209305R1	On flow line above willow flat	Sept. 1951	4/20/2010	Yes	153	93	35	340-301	pa066_1943
356	LS15209305R2	On main river channel, small elevation change	Sept. 1951	4/20/2010	Yes	152	93	5	340-301	pa066_1943
357	LS15209304R1	On flow line, above willow flat	Sept. 1951	4/20/2010	Yes	152	93	5	340-301	pa066_1943
358	LS15209309R1	On main river channel, topo change, field upland	Sept. 1951	4/20/2010	Yes	152	93	5	340-301	pa066_1943
359	LS15209310R1	On main river channel, topo change, field upland	Sept. 1951	4/20/2010	Yes	152	93	9	340-301	pa066_1943
360	LS15209310R2	On main river channel, topo change, old depositional area with trees upland	Sept. 1951	4/20/2010	Yes	152	93	10	340-301	pa066_1943
361	LS15209310R3	On main river channel, topo change, old depositional area with trees upland	Sept. 1951	4/20/2010	Yes	152	93	10	340-301	pa066_1943
362	LS15209311R1	Above depositional willow flat with trees upland	Sept. 1951	4/20/2010	Yes	152	93	10	340-301	pa067_1943
363	LS15209314R1	Above depositional willow flat with trees upland	Sept. 1951	4/20/2010	Yes	152	93	11	340-301	pa067_1943
364	LS15409729L1	On main river channel, cut bank, mature trees upland, small willow trees on turning point of main river channel	Sept. 1951	4/20/2010	Yes	152	93	14	340-301	pa067_1943
365	LS15409720L1	OHWL based on vegetation structure, low willows below and taller trees above	Aug. 1958	4/21/2010	Yes	154	97	29	BUL-2V-189	pa031_1943
366	LS15409720L2	OHWL above marshy area indicated by standing water, OHWL dissects trees area based on density of trees, more trees above OHWL vs. scattered trees below and indication of saturation area based on appearance of two-track	Aug. 1958	4/21/2010	Yes	154	97	20	BUL-2V-189	pa031_1943
367	LS15409720L3	OHWL above marshy area, upland has a row of trees in front of a silty barren area from drainage	Aug. 1958	4/21/2010	Yes	154	97	20	BUL-2V-189	pa031_1943
368	LS15409720L4	OHWL is above back channel, standing water below	Aug. 1958	4/21/2010	Yes	154	97	20	BUL-2V-189	pa031_1943
369	LS15409721L1	On cut bank, upland steep elevation change with barren hills, standing water below OHWL	Aug. 1958	4/21/2010	Yes	154	97	21	BUL-2V-189	pa031_1943
370	LS15409721L2	On cut bank, upland steep elevation change with barren hills, standing water below OHWL	Aug. 1958	4/21/2010	Yes	154	97	21	BUL-2V-189	pa031_1943
371	LS15409721L3	On cut bank, upland steep elevation change with barren hills, standing water below OHWL	Aug. 1958	4/21/2010	Yes	154	97	21	BUL-2V-189	pa031_1943
372	LS15409722L1	On cut bank, standing water below OHWL	Aug. 1958	4/21/2010	Yes	154	97	21	BUL-2V-189	pa031_1943
373	LS15409722L2	On cut bank, standing water below OHWL	Aug. 1958	4/21/2010	Yes	154	97	22	BUL-2V-188	pa034_1943
374	LS15409714L1	On cut bank, standing water below OHWL, Tobacco Garden Creek on upland above, low structure vegetation with two-tracks in area	Aug. 1958	4/21/2010	Yes	154	97	22	BUL-2V-186	pa034_1943
375	LS15409714L2	On cut bank, marshy below, above OHWL steep elevation change, fields upland	Aug. 1958	4/21/2010	Yes	154	97	14	BUL-2V-186	pa034_1943
376	LS15409723L1	On cut bank, along main river channel, sandbar in front, upland includes farmstead, roads and fields	Aug. 1958	4/21/2010	Yes	154	97	14	BUL-2V-186	pa034_1943
377	LS15309829L3	OHWL below mature trees, above willow flat with hayed fields	Aug. 1958	4/21/2010	Yes	154	97	23	BUL-2V-186	pa034_1943
378	LS15309821L1	OHWL below mature trees, above willow flat with hayed fields	Aug. 1958	4/21/2010	Yes	153	98	29	BUL-1V-55	pa027_1943
379	LS15309821L2	OHWL below mature trees, above willow flat with hayed fields, steep elevation change	Aug. 1958	4/21/2010	Yes	153	98	21	BUL-1V-55	pa027_1943
380	LS15309821L3	OHWL below mature trees, above willow flat with hayed fields, steep elevation change	Aug. 1958	4/21/2010	Yes	153	98	21	BUL-1V-55	pa027_1943
381	LS15210321L1	Above a mostly barren sandbar flat with vegetation beginning establishment on the farther downstream, mature trees on large old oxbow above that is farmed (1958), topo lines indicate low cut bank	Aug. 1958	4/21/2010	Yes	153	98	21	BUL-1V-55	pa027_1943
382	LS15210316L1	On main river channel, mature trees on large old oxbow above that is farmed (1958) above an irrigation ditch 1500' above bank, area within 1500' is drained, but does include some barren areas with wetland veg	Aug. 1958	4/22/2010	Yes	152	103	21	BUL-1V-13	pa002_1943
383	LS15210316L2	Above sandbar willow flat, below established trees, willow flats above assumed from drained field	Aug. 1958	4/22/2010	Yes	152	103	16	BUL-1V-13	pa002_1943
384	LS15210309L1	OHWL lies between an area with low dense sandbar willows below with mature trees and fields above with developed roads	Aug. 1958	4/22/2010	Yes	152	103	16	BUL-1V-13	pa002_1943
385	LS15210309L2	OHWL follows wooded line, fields above with developed roads, upland drainage channel, sandbar willow flat below	Aug. 1958	4/22/2010	Yes	152	103	9	BUL-1V-13	pa002_1943
386	LS15210309L3	Above willow flat, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	9	BUL-1V-34	pa001_1943
387	LS15210304L1	Above willow flat, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	9	BUL-1V-34	pa001_1943
388	LS15210303L1	cut channel on main river course, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	4	BUL-1V-34	pa001_1943
389	LS15210303L2	cut channel on main river course, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	3	BUL-1V-34	pa001_1943
390	LS15210303L3	cut channel on main river course, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	3	BUL-1V-34	pa001_1943
391	LS15210311L1	cut channel on main river course, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	3	BUL-1V-35	pa001_1943
392	LS15210311L2	cut channel on main river course, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	11	BUL-1V-35	pa001_1943
393	LS15210311L3	cut channel on main river course, upland is blocked from over land drainage above from irrigation canal and roads, follows '43 topo line	Aug. 1958	4/22/2010	Yes	152	103	11	BUL-1V-35	pa002_1943
394	LS15210314L1	On main river channel, below wooded area on depositional peninsula	Aug. 1958	4/22/2010	Yes	152	103	11	BUL-1V-35	pa002_1943
395	LS15210314L2	near end of depositional peninsula; barren sandbar below with island developing; developed vegetation above OHWL	Aug. 1958	4/22/2010	Yes	152	103	14	BUL-1V-11	pa002_1943

OBJECTID	Transect	Comment	Photo_Date	Date	Confidence	Township	Range	Section	Photo_File	Topo
396	LS15210313L1	On main river channel, below wooded area on depositional peninsula	Aug_1958	4/22/2010	Yes	152	103	13	BUL-1V-11	ga005_1943
397	LS15210313L2	Wooded area with fields above OHWL, OHWL on main channel	Aug_1958	4/22/2010	Yes	152	103	13	BUL-1V-11	ga005_1943
398	LS15210312L1	Wooded area with fields and irrigation canal above OHWL, OHWL on main channel	Aug_1958	4/22/2010	Yes	152	103	12	BUL-1V-11	ga005_1943

Testimony of Jon C. Patch, P.E.  
At the Special Hearing of the  
North Dakota Industrial Commission  
Concerning the

Wenck Study of the Ordinary High Water Mark of the Historical Missouri River Prior to the  
Creation of Garrison Reservoir.

June 26<sup>th</sup>, 2018

Good morning, my name is Jon C. Patch. I am here to provide comments to the commission on the Wenck Study of the Ordinary High Water Mark of the Historical Missouri River prior to the creation of Garrison Reservoir. I am a trained hydrogeologist and professional engineer and have worked in the field of hydrology for the past 36 years. I am currently the Director of the Water Appropriation Division of the North Dakota State Water Commission. I am here in a personal capacity and not as a representative of the Water Commission or Office of the State Engineer. I am representing the family of my recently passed mother, Lois Jean Wilkinson Patch, and the whole Wilkinson Clan, the descendants of my grandparents, J.T. and Evelyn Wilkinson.

My comments will be generally supportive of the work Wenck did and the methods they used to determine where the OHWM existed prior to the creation and flooding of man-made Lake Sakakawea. I do take exception with their reliance on language for OHWM determination that came about long after the lands were properly acquired and titles transferred to the USA using practices for OHWM determination that were accepted at the time and were unchallenged by the State of North Dakota until relatively recently.

But to start with the areas I'm in agreement with, I am very supportive of Wenck's development and use of a HEC-RAS model in estimating the pre-dam OHWM. Once a model is calibrated and validated the results are clear, logical, and unambiguous. The modeled water surface elevation makes logical sense and human error and bias are greatly reduced. Confidence in any model and the results of the simulations need to have real world data to compare against to calibrate the model and validate the assumptions. They had this data in the long term stream gage record from the USGS operated gage located on the Missouri River near Williston. The gage data provided a great statistical basis for the probabilistic recurrence interval (RI) used in the model. Wenck recommends using a flow recurrence interval of 2 years or a 50% chance of a stage level returning in any given year. That recurrence interval seems reasonable from a purely logical standpoint that land that is flooded more frequently than that would likely not be capable of being developed as farmland especially given that fact that these high flows usually occur in May and June as the flood waters from the snowmelt are peaking well after the time of planting.

The control of the model is excellent in that the Corps had developed pre-dam Missouri River cross sections that were used as the control sections in the model.

A key assumption in any hydraulic flow model is the choice of an appropriate Manning's n value. Wenck chose  $n=0.03$  which falls right in line with typical values of gravelly to weedy earth channels and clean straight natural streams.

[https://www.engineeringtoolbox.com/mannings-roughness-d\\_799.html](https://www.engineeringtoolbox.com/mannings-roughness-d_799.html)

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA  
DATE 6-26-18 CASE NO. 26584  
Introduced By Jon Patch  
Exhibit 1  
Identified By Jon Patch

I would like to speak to the details and comment primarily on the results of the study in the area of the Wilkinson mineral property which is located in the S1/2 NW1/4 and the SW1/4 of Section 12, and the NW1/4 of Section 13, T153N-R102W.

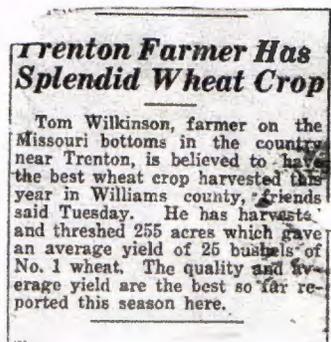
For reference, the Wilkinson tract is shown on page 174 as HH 3190 and falls between the USACE Sections at river miles RM1650.3 and RM1655.8. The tract is about 1.5 miles upstream from RM1650.3 therefore it is estimated to be about 25% of the distance between the two cross-sections. The pre-dam gradient of the river between these two cross sections is about 1.2 ft/mile.

Page 219 and 220 of the Wenck report shows the modeled RI=2 yr, n=0.03 elevation of 1844.47' at RM1650.3 and 1850.89' at RM1655.8 putting the interpolated model results near the Wilkinson property at 1846.07'.

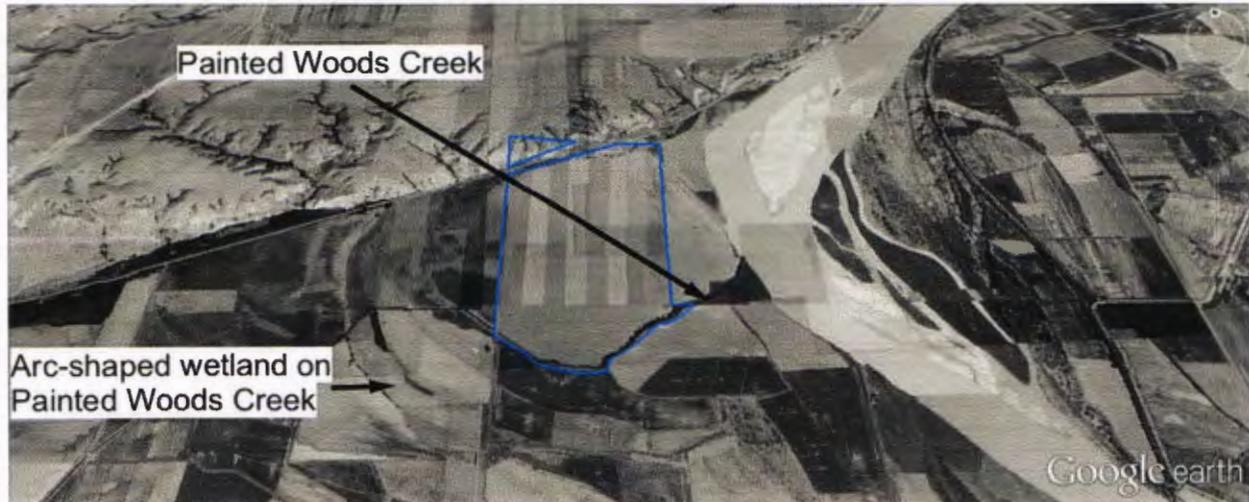
Nearly all of the Wilkinson property (HH 3190) falls between 1850-1851' elevation, a good four feet above the modeled historic (pre-dam) OHWM.

But, the coup-de-gras piece of evidence that puts to rest the notion that the Wilkinson property could possibly be below the OHWM at the time of the closing of Garrison Dam is an aerial photo taken in 1958 – years after the dam was closed but prior to its complete filling – that clearly shows the Wilkinson land was under cultivation and highly productive in growing ordinary agricultural crops. I'm enclosing a newspaper clipping that refers to the Wilkinson property.

*Hi Jan -  
Thought you'd find  
this interesting*



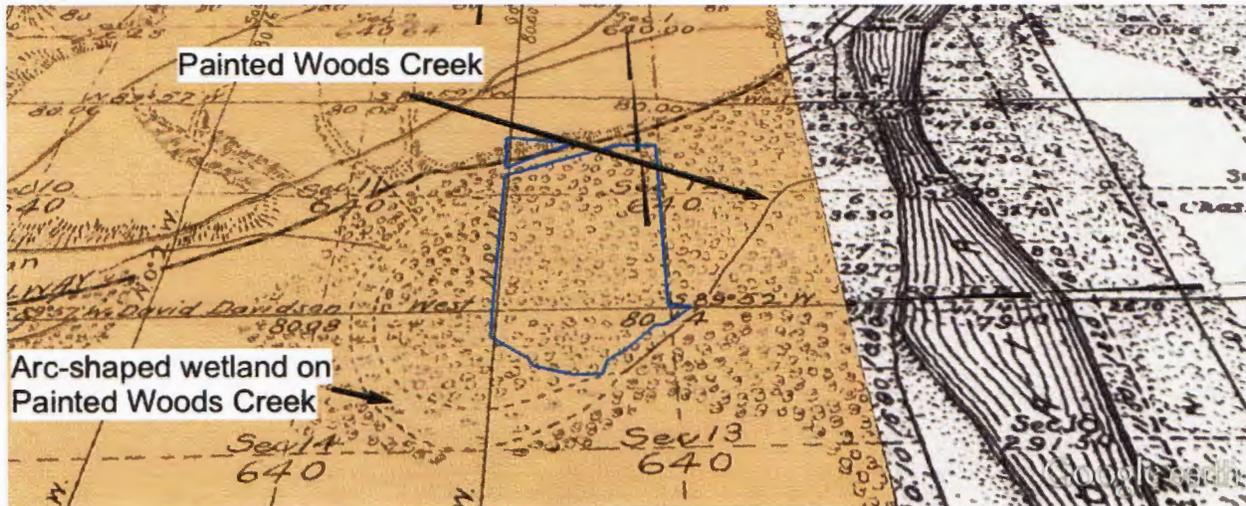
*1940 02 41*



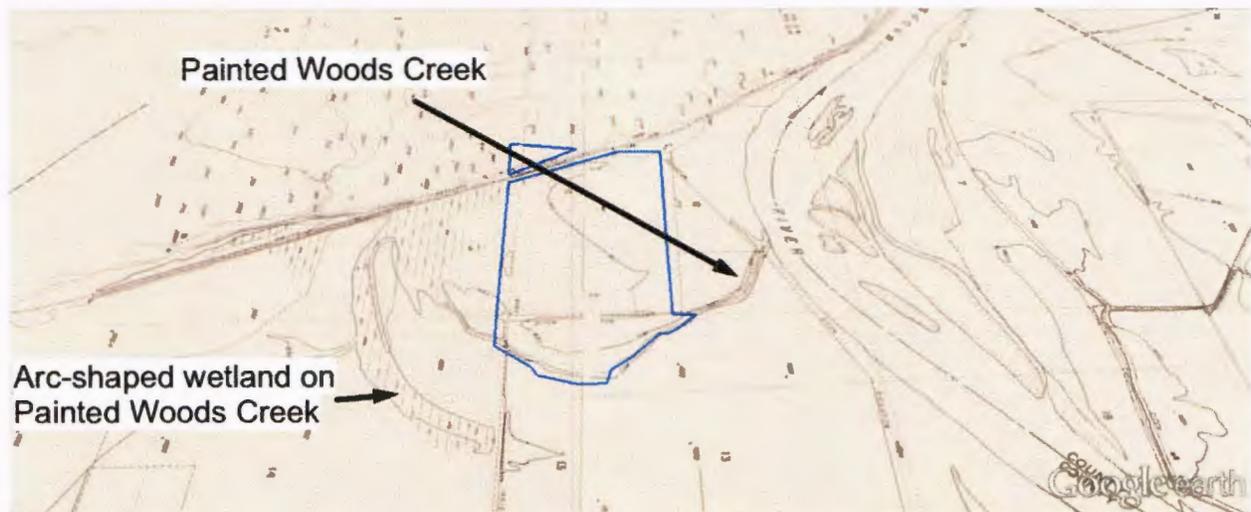
**1958 Aerial photo showing the farmed tracts of the Wilkinson Acres (outlined in blue)**

I concur with Wenck’s concluding remarks where they state “The OHWM analysis will focus more on aerial photography interpretation, geomorphic interaction of the channel and overbank and land use practices. Where farming practices are successfully employed yet fall below the anticipated 2- year flood elevation, such areas are withdrawn from consideration as below the OHWM.” The photographic evidence from both 1951 and 1958, as well as the modeled water level elevations confirm the Wilkinson acres are above the historic OHWM of the Missouri River.

I would also like to add into the record a topographic survey the Corps did in 1943 (sheet 3 and Sheet 7) that clearly show the elevation of the Wilkinson property to be above the pre-dam OHWM. I’d like to point out the physiographic feature they mapped – a wetland or marsh that occurs along Painted Woods Creek as it traverses across the bottomlands prior to it’s reforming into a defined watercourse and emptying into the Missouri River over a mile downstream.



**1901 General Land Office (GLO) Basemap (Wilkinson Acres outlined in blue)**



**1943 Corps of Engineers Survey (Wilkinson Acres outlined in blue)**

Also, the 1901 General Land Office (GLO) plots which established the original meets and bounds of the current public land survey system we use to define property boundaries to this day. There, again, the surveyors would make note of prominent physiographic features and mapped the aforementioned wetland/marsh that existed at the time.

I point out this marsh because later OHWM delineators used it as a faux OHWM of the Missouri River, solely based on their unreasonable reliance of using vegetative indicators of the OHWM. This was done for the Phase I survey, an OHWM delineation ordered by the State Land Board and State Engineer in 2009.

The point of disagreement have with the Wenck report is their statement on page 222 that “An OHWM analysis requires determining the flood event that leaves a ‘line below which the action of water is frequent enough either to prevent the growth of vegetation or to restrict its growth to

predominantly wetland species.’ ”

The directive from the legislature in NDCC 61-33.1-03(1) states:

The corps survey must be considered the presumptive determination of the ordinary high water mark of the historical Missouri riverbed channel, subject only to the review process under this section and judicial review as provided in this chapter.

Since the review that Wenck undertook was called for by that same legislation, they should’ve also used the criterion of 61-33.1-03(3)(d) that states: “Land where the high and continuous presence of water has destroyed its value for agricultural purposes, including hay land, generally must be considered within the ordinary high water mark. The value for agricultural purposes is destroyed at the level where significant, major, and substantial terrestrial vegetation ends or ceases to grow. Lands having agricultural value capable of growing crops or hay, but not merely intermittent grazing or location of cattle, generally must be considered above the ordinary high water mark”

Or, the Corps definition of OHWM:

33 CFR 329.11(a)(1)

The “ordinary high water mark” on non-tidal rivers is the line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank; shelving; changes in the character of soil; destruction of terrestrial vegetation; the presence of litter and debris; or other appropriate means that consider the characteristics of the surrounding areas.

In the above definition, I draw your attention to the words “destruction of terrestrial vegetation.” This is a common theme in other states that use the OHWM to determine state title of sovereign lands. North Dakota does not have the OHWM defined in statute. The current definition is defined by the agency in administrative code (NDAC 89-10). The language in admin code apparently comes from the Sprynczynatyk vs. Mills case where case-law from other states was quoted in the Court’s decision. The NDAC definition uses the term “restrict its growth to predominantly wetland species”. **There is a huge difference between destruction of terrestrial vegetation and restrict its growth to predominantly wetland species.**

The whole paradigm of OHWM delineation in North Dakota has shifted from one based in hydrology and hydraulics to one of botany and biology. In North Dakota, it’s not about finding the ordinary high watermark, rather, the ordinary high vegetative mark. They fall back into the mantra of we must use the vegetative species as the primary indicators. It’s as if the vegetation is no longer the “indicator”, it has become the “subject” of the investigation. It appears as though in their minds, the goal is to find the 50-50 line between terrestrial and aquatic plant species and in doing so, you have met the criterion of **predominantly wetland species**. But, by doing that, they’ve copped out on looking at all the other necessary things like, hydrology (which includes hydrogeology), geomorphology, and the visual inspection for the presence of a “mark”

as the name imports. The state developed guidelines for the delineation of the OHWM which they now feel is the bible for OHWM delineation in the state. But, it seems they have abandoned the general guidelines published in the “North Dakota Sovereign Land Management Plan” that states on page 8:

#### **General Guidelines for Ordinary High Water Mark Delineations**

The above definitions do provide some guidance for ordinary high water mark delineations in North Dakota, wherein the courts determined that hydrology and impacts upon the soil are the primary indicators, followed by vegetative impacts. But, beyond those definitions, the State of North Dakota does not have a specific set of standards or guidelines established for ordinary high water mark delineations.

[http://www.swc.nd.gov/pdfs/sovereign\\_land\\_management.pdf](http://www.swc.nd.gov/pdfs/sovereign_land_management.pdf)

So, it appears the North Dakota Sovereign Land Management Plan directly contradicts the ND State Engineer Ordinary High Water Mark Delineation Guidelines where vegetation rules!

The SE OHWM guidelines stand on very shaky ground and are highly subject to multiple interpretations. For instance, in the Wilkinson lawsuit, an affidavit was filed that states the SE guidelines demand that an OHWM delineation must be done “on the ground”. This simply isn’t true. Nowhere in the SE guidelines do the words “on the ground” appear. Moreover, the affidavit stated that “The Phase II Investigation did not involve an on-the-ground analysis as required by the Delineation Guidelines. The SE did not participate in this project and would not consider this a determination of the OHWM for either the time prior to creation of Lake Sakakawea or currently.”

However, that statement directly contradicts a December, 2014 letter sent to the BLM and signed by Todd Sando, SE and Lance Gaebe, Land Commissioner that stated:

In 2009, North Dakota initiated an Ordinary High Water Mark (OHWM) survey of the river channel of the Missouri River. Under present day, Lake Sakakawea, the historic channel, was determined based upon high resolution aerial photography from 1958, just prior to these lands being flooded from the construction of Garrison Dam. The survey was conducted using the OSE's January 2007 Ordinary High Water Mark Delineation Guidelines, a document developed to provide a scientific repeatable process for delineating the OHWM of the state's waterbodies.

<https://www.dropbox.com/s/9jcrxz60dvx8f67/2014%20sando%20gaebe%20letter.pdf?dl=0>

Getting back to the state’s reliance on using the vegetative indicators and finding the 50-50 line between upland and aquatic plant species, let me give you a real world example of the idiotic outcomes that will result when that method is applied without a sound basis or understanding of hydrology and hydraulics.

The Wilkinson acres and many others were swallowed up by the State of North Dakota based on that misinterpretation of the OHWM by the contractors and subcontractors that were acting under the direct guidance and consultation of the State Engineers office and the Land Department.

They unduly relied on finding a 50-50 line and blatantly ignored obvious indications that their 50-50 points were not OHWM marks of the Missouri River. The shoddy work would be laughable if the consequences weren't so serious. It has cost my family hundreds of thousands of dollars in out-of-pocket legal and expert fees, let alone the forgone royalties from the minerals we own.

By allowing botanists and biologists to run the show at the land department and State Engineers office, and contracted surveyors who do not understand hydrology and hydraulics at the consulting firm, you end up with these sort of results:

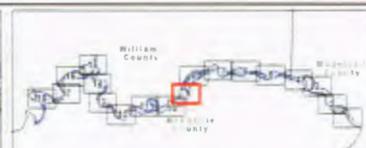
- Ordinary high water marks on a wetland along a non-navigable tributary over a mile away from the Missouri River.
- Ordinary high water marks that are feet higher downstream along the same bank of the river. Tell me, how does that logically happen?
- Ordinary High Water Marks that are up to seven plus feet different on points located on opposite banks of the river directly across from one another. Again, how is that logically possible?
- Ordinary High Water Marks that are established "on-the-ground" using vegetative indicators but done in late November when there isn't a green blade or leaf to be found anywhere in North Dakota.

[https://www.dropbox.com/s/w61ahemn8eqwnm7/Phase\\_I\\_silliness.pdf?dl=0](https://www.dropbox.com/s/w61ahemn8eqwnm7/Phase_I_silliness.pdf?dl=0)

[https://land.nd.gov/Docs/Minerals/OHWM1/MissouriPhotos/M15310213L5A\\_photos.pdf](https://land.nd.gov/Docs/Minerals/OHWM1/MissouriPhotos/M15310213L5A_photos.pdf)

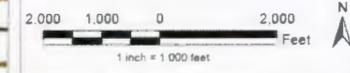
With the advancements in remote sensing – LiDAR, historic and recent annual aerial photography availability, real-time monitoring technology, LandSat, UAVs (drones), and many new technologies to come, it's time we update the guidelines for OHWM delineation and put a proper definition in statute.

Thank You and I'm more than willing to stand for questions.



- BLM PLSS Section Boundary
- BLM PLSS Qtr Qtr Section Boundary
- River Miles
- USACE Cross Section
- Ordinary High-Water Mark (OHWM)
- Recommend Correction to Account for More Recent Aerial Information
- Recommend Correction to Account for Frequently Flooded Accretion
- Recommend Correction to Account for Active Meandering (Reliction)

Notes  
 1. PLSS Sections and Quarter Sections: BLM National Public Land Survey System, Department of the Interior  
 2. 1951 Aerial Photographs (Source: ND Department of Mineral Resources)



NORTH DAKOTA DEPARTMENT OF MINERAL RESOURCES  
 OHWM Delineation



MAR 2018  
 Map 9 of 18

INDUSTRIAL COMMISSION  
 STATE OF NORTH DAKOTA

DATE 6-26-18 CASE NO. 26584  
 Introduced by Gary Hagen  
 Exhibit 1  
 Identified By Gary Hagen



The opposite applies to the 1943 photos. They are limited due to fact they are older; they were taken shortly after a significant flood event (168,000 cfs on March 31, see USGS data in Appendix C and ref. 4) that eroded much of the floodplain and washed out the OHWM; and the vegetation has less leaves for photo interpretation given the early spring date. There are significant other data that make the 1943 set useful as a secondary reference. Many of the 1943 photos have notes and delineated farmed areas on them that appear to match those found in the USACE appraisal documents at Riverdale. This information helped confirm appraisal data. They are also helpful in determining the progression of farming in the floodplain area when compared with the 1951 data set.

It should also be noted that the 1943 aerial photos were likely used to create the USGS 1943 topographic maps. The river bank in the maps was used by the USACE in establishing the property boundary along the river. This is the presumptive determination of the OHWM as stated in North Dakota Century Code chapter 61-33.1-03 para 1 (see Appendix A). Comparison of the river banks between 1943 and 1951 shows significant movement of the meander bends. This is the reason for a significant portion of the recommended OHWM modifications in this analysis.

The flooded area determined by the flow modeling and 1943 topographic maps as described above was reviewed in detail on the 1951 aerial photos. The OHWM was delineated as "that line below which the action of water is frequent enough either to prevent the growth of vegetation or to restrict its growth to predominantly wetland species". A stereoscope was used with overlapping aerial photos to better see three-dimensional landforms such as swales and to determine high and low areas.

Farmed and hayed areas were designated as above the OHWM. Accreted lands above the line which restrict vegetation to predominantly wetland species were also designated above the OHWM. Areas of low-lying and flat lands where the OHWM was impracticable to determine due to inconclusive aerial photography or inconclusive vegetation analysis was presumed to be above the OHWM.

### 5.5 APPRAISAL DOCUMENTS

Appraisal documents were prepared by the USACE to purchase easements prior to the construction of the dam. These documents often provide tables of acreages and maps that identify and delineate various land uses and even vegetation and soils for a particular property or tract. The value of the easement is determined from these land uses. The appraisal documents, especially the maps, provided excellent information to support the delineation of farmed areas that were not readily identifiable in some aerial photos.

### 5.6 REVIEW

The OHWM delineation was reviewed at various times during the process by geomorphologists, river engineers, wetland scientists with aerial photo interpretation expertise, and legal experts.

### 5.7 CONSIDERATION OF ERROR

The OHWM was carefully delineated with available information. As with every process there are sources of error. The primary sources for this work include the following:

- Aerial photo geo-referencing – See Section 4.1 for efforts made to minimize errors.



S02

ESW

W

SE

NENE

NWNE

SENE

T153N R098W S11

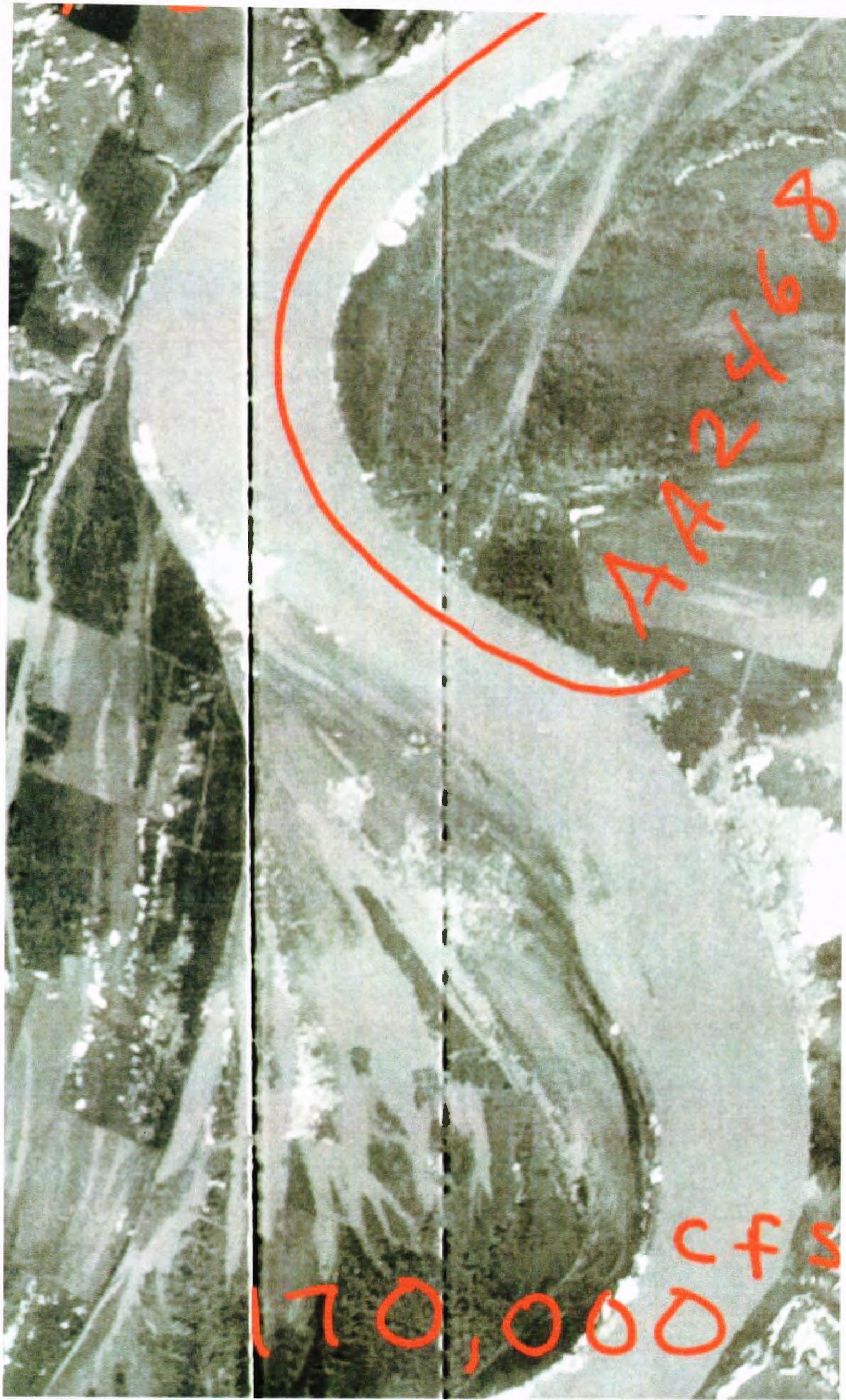
NESE

NESE

SESE

SESE





AA2468

170,000 CFS



WRONG!

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1949

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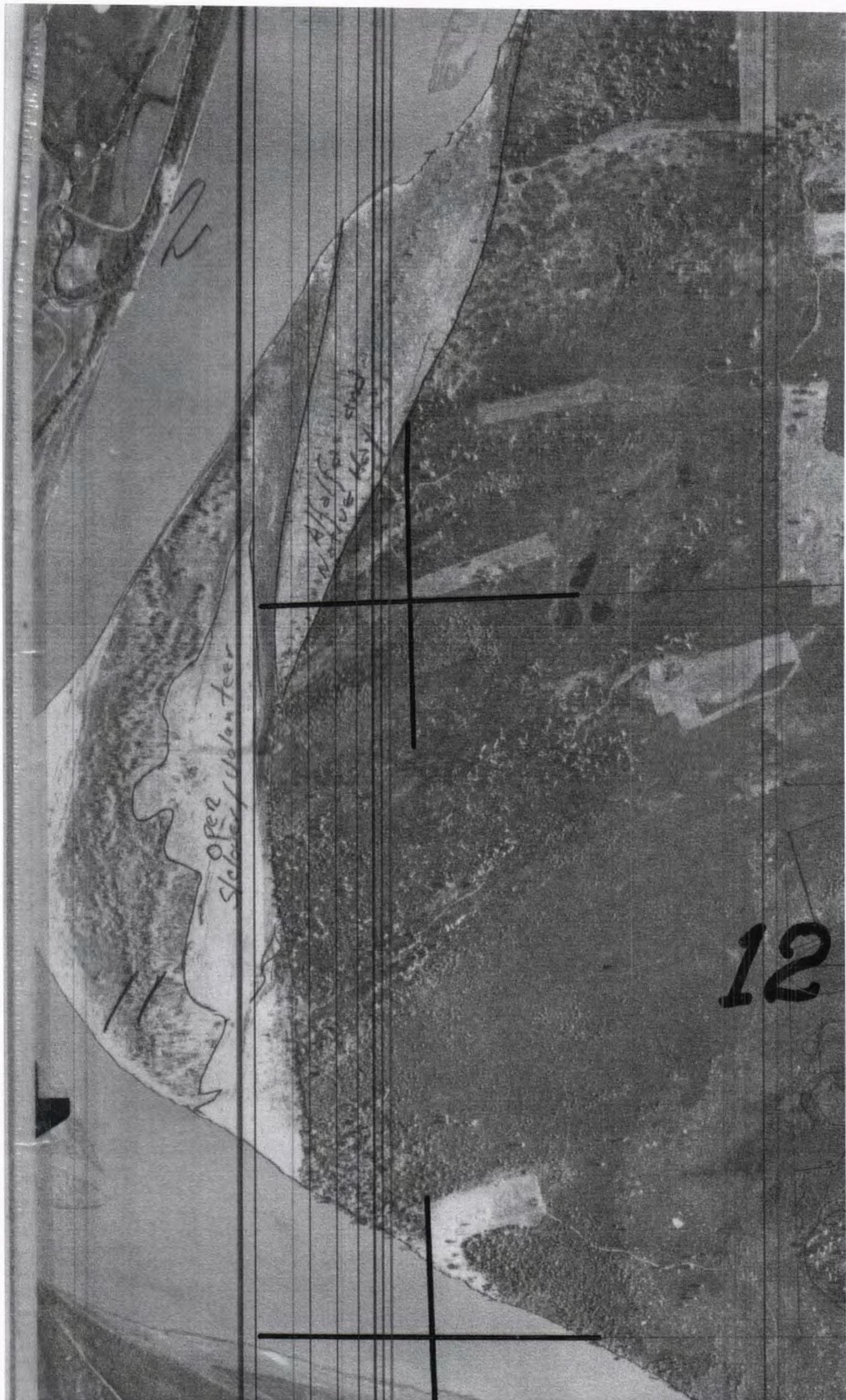
- Aerial photo geo-referencing - See Section 4.1 for efforts made to minimize errors.



Responsive partner. Exceptional outcomes.







2

Open Slab / Holantee

Pine / Holly / ...

12

Water Year	Date	Gage Height (feet)	Stream-flow (cfs)
1940	Jun. 10, 1940	7.74 <sup>2</sup>	45,200 <sup>6</sup>
1941	Sep. 09, 1941	7.34 <sup>2</sup>	47,100 <sup>6</sup>
1942	Jun. 13, 1942	9.45 <sup>2</sup>	69,500 <sup>6</sup>
1943	Mar. 30, 1943	17.26 <sup>2</sup>	204,000 <sup>6</sup>
1944	Jun. 22, 1944	11.69 <sup>2</sup>	121,000 <sup>6</sup>
1945	Jun. 29, 1945	8.90 <sup>2</sup>	70,800 <sup>6</sup>
1946	Jun. 15, 1946	7.92	53,300 <sup>6</sup>
1947	Mar. 24, 1947	18.01 <sup>2</sup>	210,000 <sup>6</sup>
1948	Jun. 10, 1948	9.54 <sup>2</sup>	78,300 <sup>6</sup>
1949	Jun. 15, 1949	8.02 <sup>2</sup>	49,700 <sup>1,6</sup>
1950	Apr. 17, 1950	11.08 <sup>2</sup>	110,000 <sup>6</sup>
1951	Apr. 08, 1951	12.50 <sup>2</sup>	140,000 <sup>6</sup>
1952	Apr. 01, 1952	17.76 <sup>1</sup>	170,000 <sup>6</sup>
1953	Jun. 19, 1953	9.14 <sup>2</sup>	73,400 <sup>6</sup>
1954	Apr. 08, 1954	10.17 <sup>1</sup>	70,000 <sup>2,6</sup>
1955	Apr. 03, 1955	10.30 <sup>1</sup>	70,000 <sup>2,6</sup>
1956	Jun. 03, 1956	8.55 <sup>2</sup>	67,800 <sup>6</sup>
1957	Jun. 11, 1957	9.67	77,000 <sup>6</sup>
1958	May 28, 1958	7.61 <sup>2</sup>	43,100 <sup>6</sup>
1959	Mar. 23, 1959	20.63 <sup>1</sup>	170,000 <sup>6</sup>
1960	Mar. 22, 1960	18.00 <sup>2</sup>	120,000 <sup>2,6</sup>
1961	Jun. 14, 1961	7.71 <sup>2</sup>	38,100 <sup>6</sup>
1962	Jun. 20, 1962	10.24 <sup>2</sup>	79,900 <sup>6</sup>
1963	Jun. 21, 1963	11.73	73,400 <sup>6</sup>
1964	Jun. 20, 1964	11.18 <sup>2</sup>	80,200 <sup>6</sup>
1965	Jun. 16, 1965	13.82 <sup>2</sup>	107,000 <sup>1,2,3,6,8</sup>

#### Peak Gage-Height Qualification Codes.

- 1 -- Gage height affected by backwater
- 2 -- Gage height not the maximum for the year

#### Peak Streamflow Qualification Codes.

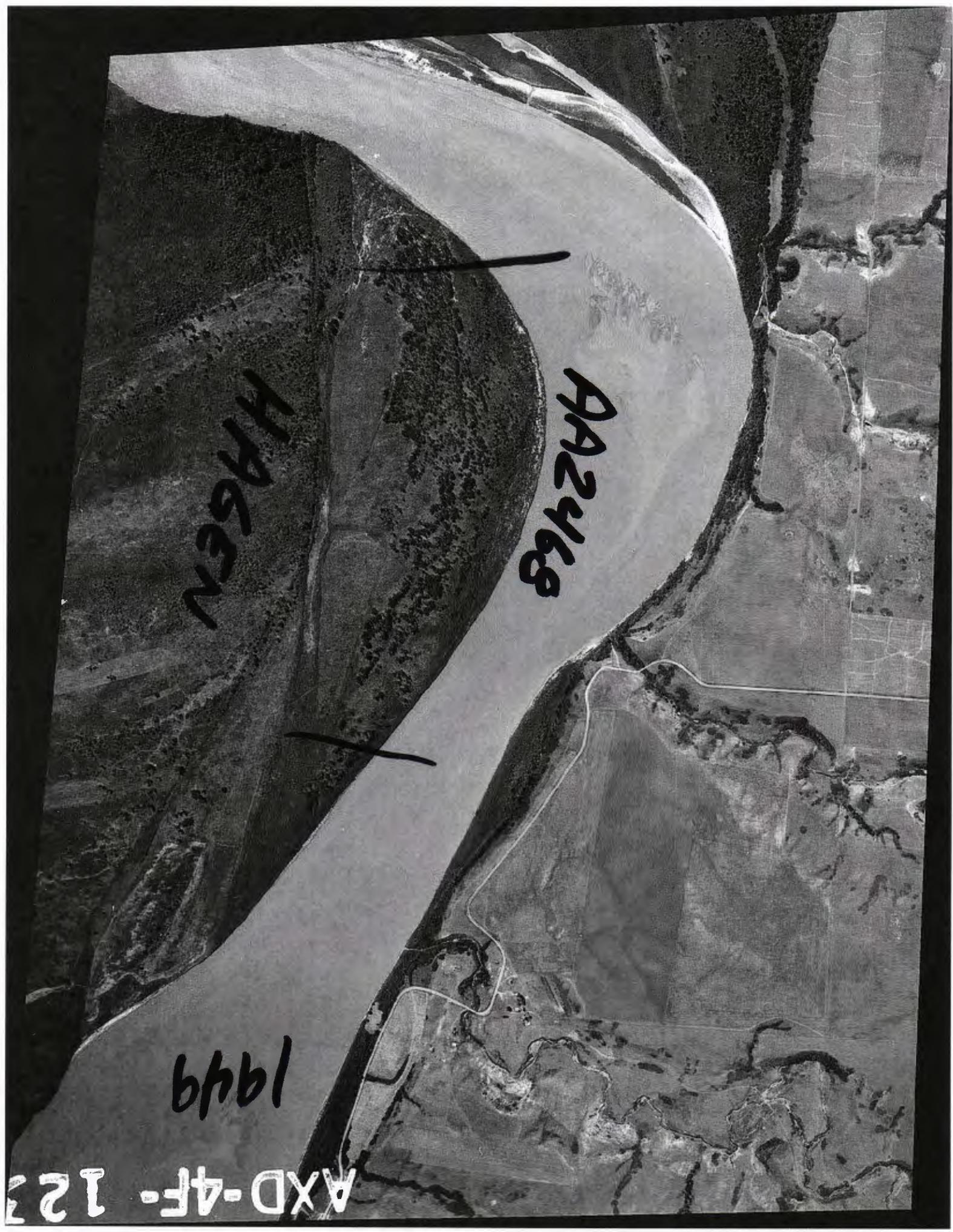
- 1 -- Discharge is a Maximum Daily Average
- 2 -- Discharge is an Estimate
- 3 -- Discharge affected by Dam Failure
- 5 -- Discharge affected to unknown degree by Regulation or Diversion
- 6 -- Discharge affected by Regulation or Diversion
- 8 -- Discharge actually greater than indicated value

HAGEN

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1999

AXD-4F-123



HAGSEN

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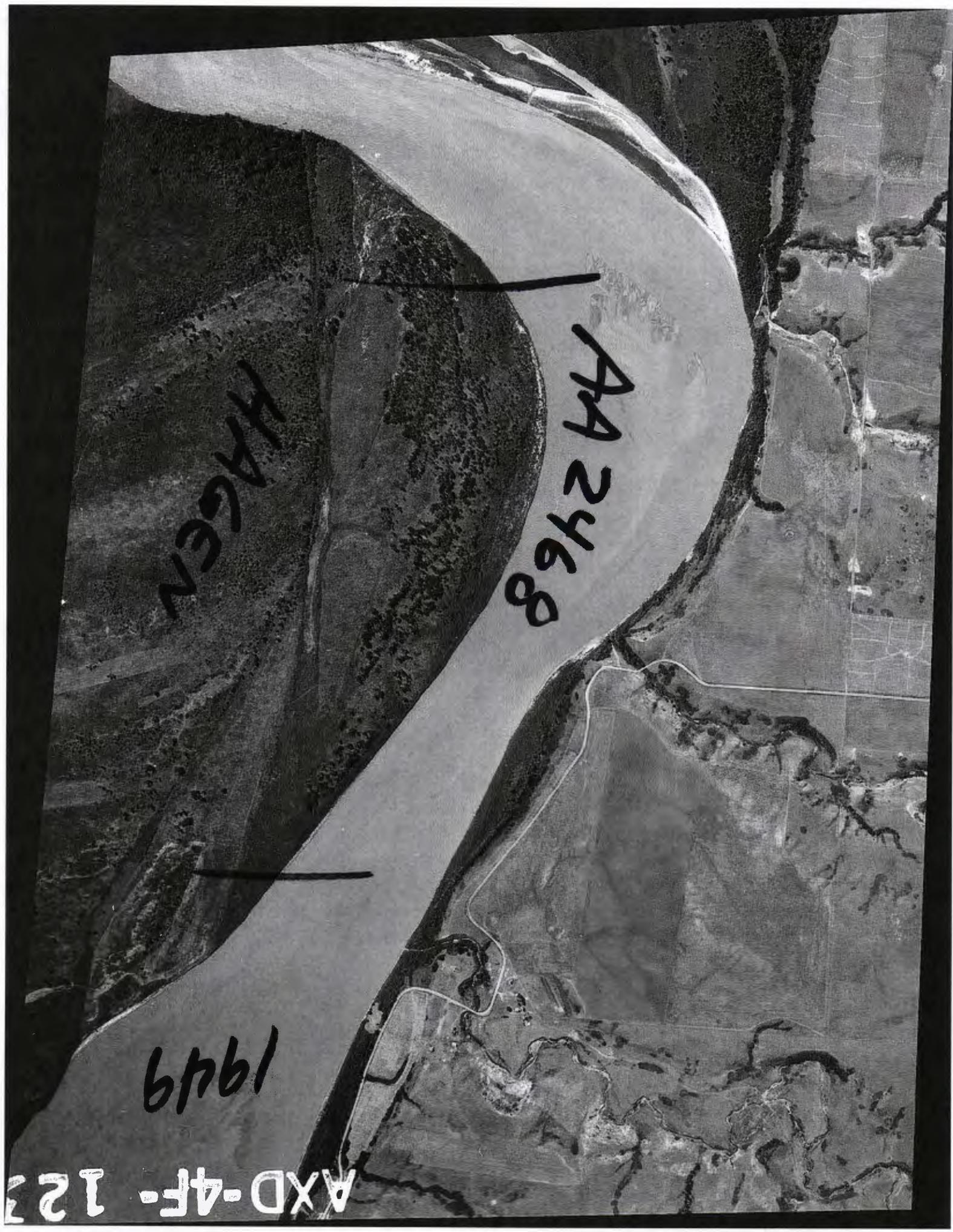


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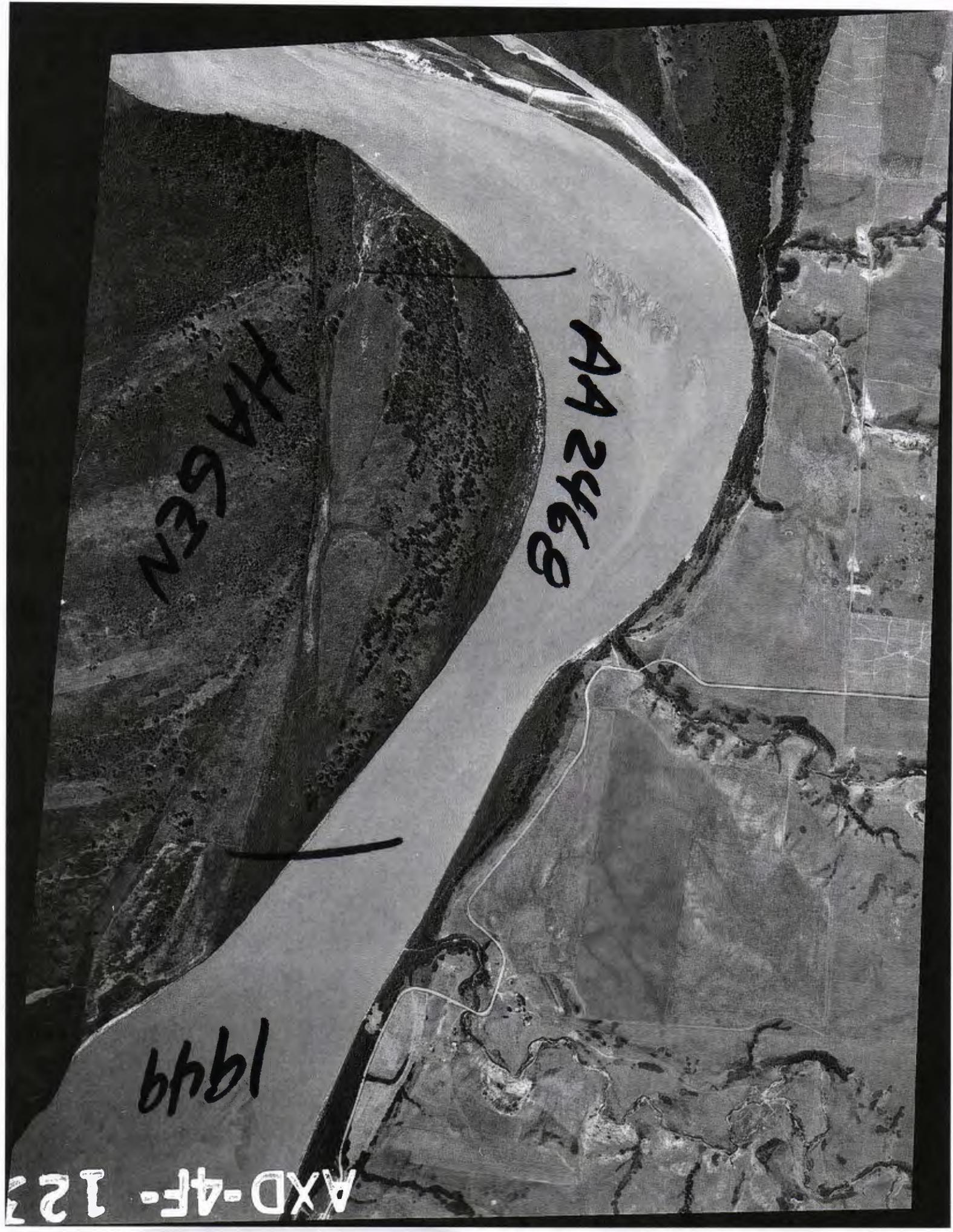


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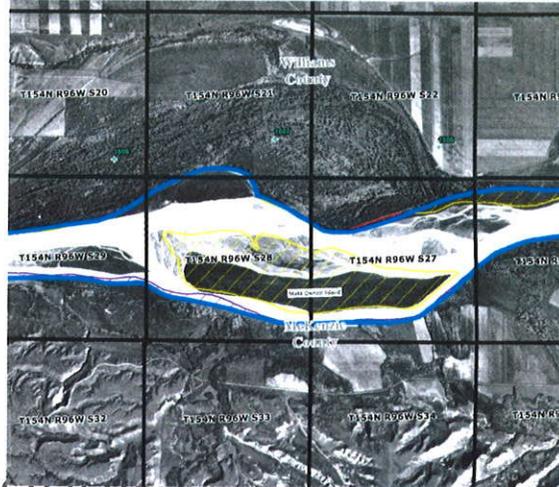


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# ORDINARY HIGH WATER MARK OF THE MISSOURI RIVER BED



April 17, 2018



Wenck Survey  
Tracts

(aka Whitetail Wave LLC Tracts)

154N096W27SESW

154N096W27SWSE

154N096W27SWSW

(aka Lot 8)

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA

DATE 6-26-18 CASE NO. 26584

Introduced By Lonney White

Exhibit 1

Identified By Lonney White

## **WHITETAIL WAVE LLC**

P.O. Box 21495 • Billings, Montana 59104 • 406.248.5627 • Cell 406.861.0832  
Street Address / 2146 Fairview Place • Billings, Montana 59102  
[lonneywhitejr@gmail.com](mailto:lonneywhitejr@gmail.com)

June 20, 2018

VIA Email: brkadrmas@nd.gov

North Dakota Industrial Commission-  
Department of Mineral Resources  
Oil and Gas Division  
Attn: B R Kadrmas  
1016 E. Calgary Ave.  
Bismarck, ND 58503-5512

Re: NDIC-The Dept of Mineral Resources  
June 26, 2018 Special Hearing Regarding The Wenck OHWM Survey

To the Department of Mineral Resources:

As per the North Dakota Industrial Commission Docket for Hearing Notice dated for Tuesday, June 26, 2018 @ 9:00 a.m., regarding delineation of the ordinary high water mark ("OHWM") received by the Commission on April 17, 2018, from Wenck Associates, Inc. ("Wenck"), I wish to submit the following comments.

I'm Lonney H. White, Jr., Sole Member of Whitetail Wave LLC ("Whitetail"), a Montana Limited Liability Company, who is a mineral owner under certain tracts of lands covered under Wenck's delineation of OHWM, received by the Commission on April 17, 2018 ("Wenck Survey"). The record title chain to mineral interest acquired by Whitetail ties back to H. B. Mendenhall and Carrie E. Mendenhall, the previous owners at the time of United States of America's taking of surface. **(See Attachment 1, Judgment On Declaration of Taking, dated 8/15/1953) (See Attachment 2, Y 2282 Appraisal Docs)**

For the purpose of this hearing and so that I may be able to more fully understand the Wenck Survey, as it applies specifically to three (3) tracts under which Whitetail owns a mineral interest, I request that you provide me with some additional help, information and consideration, either directly or through Wenck.

For your reference, see below a table that sets out information obtained from Wenck Survey-Table 2a OHWM Delineation Results, covering my three (3) Tracts. In addition to the six (6)

columns contain therein, I added columns 2 & 5 set out in red for reference and discussion purposes herein:

1	2	3	4	5	6	7	8
Wenck Survey Tracts  (aka Whitetail Wave LLC Tracts)	<b>Corps Segment Map Y Above OHWM (acres)</b>	USACE Survey (acres)	USACE Survey Below OHWM (acres)	<b>USACE Survey Above OHWM (acres)</b>	Project Area Below OHWM (acres)	Project Area Above OHWM (acres)	Net Change (acres)
154N096W27S ESW	<b>21.20</b>	21.90	1.90	<b>20.00</b>	4.50	17.40	2.60
154N096W27S WSE	<b>27.10</b>	26.60	2.10	<b>24.50</b>	4.20	22.40	2.10
154N096W27S WSW (aka Lot 8)	<b>20.72</b>	19.80	1.90	<b>17.90</b>	3.10	16.70	1.20
<b>TOTAL</b>	<b>69.02</b>	68.30	5.90	<b>62.40</b>	11.80	56.50	5.90

See # 11 below for breakout of 12.52 acres

<b>TOTAL</b>	<b>69.02</b>					<b>56.50</b>	<b>12.52</b>
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My request for help, information and consideration is as follows:

1. Regarding Column 2 & 3, can you explain why Column 3, USACE Survey was used and not Column 2, Corps Segment Map Y Survey? **(See Attachment 3, Corps Segment Map Y Survey)**
2. Regarding Column 3, can you provide me with a PDF Copy of the USACE Survey Plat used in Wenck Survey?
3. Regarding Column 3, are the USACE Survey points taken from work done under Column 2, Corps Segment Map Y Survey?
4. Regarding Table 2a Column 3, 4, 5, 6, 7 & 8, how were the areas computed and can you provide me with PDF Copies that highlights any and all details or documents specifically used in calculating the areas set out for each of my three tracts listed in Column 1?
5. Regarding Column 2 & 3, can you provide me with a PDF Copy of the Corps Segment Map Y with an overlay of the USACE survey, as well as overlays of the acreage amounts set out in Columns 4 through 7?
6. As a follow up to Question 4, regarding Column 1 Tracts specifically, what is the percentage of error in the calculations used to determine the acreage amounts set out in Columns 3 through 8?

7. Regarding Wenck Survey OHWM Delineation Maps 1-18, more specifically Map 6 of 18 that covers my Tracts set out in Column 1, please explain the georeferencing issues that are evident on Map 6 of 18. **(See Attachment 4, Wenck Survey OHWM Delineation Map 6 of 18)**
8. Did the Wenck Survey use, in any way, the Bartlett & West Phase II Survey ("Phase II Survey") and if not, why and if so, can you explain when and how it was used and why the Wenck Survey shows less Above OHWM Acres and more Below OHWM Acres than the Phase II Survey, covering my Tracts set out in Column 1? **(See Attachment 5, Bartlett & West Plats. Be advised, Whitetail has overlaid its tracts to one of the 3 attached Bartlett & West Plats)**
9. Regarding Column 1, please provide me with the metes and bounds legal description, for each of the three Tracts for the area laying Above the OHWM? If metes and bounds description cannot be provided, please explain why.
10. Regarding Column 1, please provide me with the metes and bounds legal description, for each of the three Tracts for the area laying Below the OHWM? If metes and bounds description cannot be provided, please explain why.
11. As a Owner under the three tracts in Column 1, I argue that Column 2 Corps Segment Map Y Survey should have been used as the starting point, or ground ZERO of the Wenck Survey due to distortions and georeferencing errors. By using Column 3, USACE Survey, containing 68.30 acres instead of Column 2, Corps Segment Map Y Survey, containing 69.02 acres, it appears as though I lose 0.72 acres ( $69.02 - 68.30 = 0.72$ ) . Additionally it appears that I lose 5.90 acres to OHWM, using certain USACE Survey data considered under Column 4, plus an additional 5.90 acres using certain other Survey data considered under Column 6. By not using the Column 2, Corps Segment Map Y Survey, I actually lose a net total of 12.52 acres to OHWM, rather than the Winck Survey 5.90 net loss acres set out in Column 8 ( $0.72 + 5.90 + 5.90 = 12.52$ ). Considering the above, can you please account for each of the acreage amounts that total the net 12.52 acres lost to the OHWM by providing me with details of any and all things considered that are specific to said acres?
12. Regarding Column 1 Tracts specifically, can you explain reasons why the Wenck Survey is right and the Corps Segment Map Y Survey is wrong? Why doesn't the Corps Segment Map Y Survey areas match those of the Wenck report Table 2a? Did the Wenck Survey take into account the Supplemental Plats by the USACE? In providing explanation, please consider that certain Response Letter, dated March 23, 2016 from Aden L. Seidlitz, Acting State Director of the United States Department of the Interior, Montana Bureau of Land Management to Mr. Lance D. Gaebe, Commissioner of the University and School Lands, ND Dept of Trust Lands and Mr. Todd Sands, State Engineer, ND State Water Commission, wherein, among other things, Mr. Seidlitz concludes  
*"...The COE Segment Maps are firmly grounded in guidance, methodology, and contemporaneous field investigations of the land prior to the effects of flooding. These Segment Maps are the most comprehensive evidence of the OHWM prior to the artificial*

*rising to create Lake Sakakawea. The Segment Maps were the basis for millions of dollars of appropriated funds being spent to acquire displaced uplands and were generated with determinations from in--the-field investigations by BLM, and involved from the BLM and ND SLD, and have gone uncontested for over 60 years.*

*Moreover, the BLM's Branch of Cadastral Survey Performed a quality check prior to incorporating them into the Supplemental Plats. The COE Segment Maps were overlaid onto aerial photography and evaluated for OHWM determination and riparian movement effects on land title. Miniscule differences were identified due to difference in dates of aerial photography compared to the dates of the field investigations and the constant movement of rivers. In these areas, deference was given to the Segment Maps due to the field-based reports and techniques and the fact that chain of land title was based upon them and were determined to have been executed in accordance with federal guidelines..." **(See Attachment 6, Response Letter, dated March 23, 2016 from Aden L. Seidlitz, Acting State Director of the United States Department of the Interior, Montana Bureau of Land Management)***

13. Further to Item 12 above, please be informed that I have had discussions with Cadastral Surveyors, Josh and Blaise with the United States Department of the Interior, Montana Bureau of Land Management, Billings Office, regarding the Wenck Survey, as it relates to my tracts. All discussions and information was provided to me as helpful information and not as a decision by the BLM. Through discussions with Josh and Blaise I have reached my own conclusion, as follows:

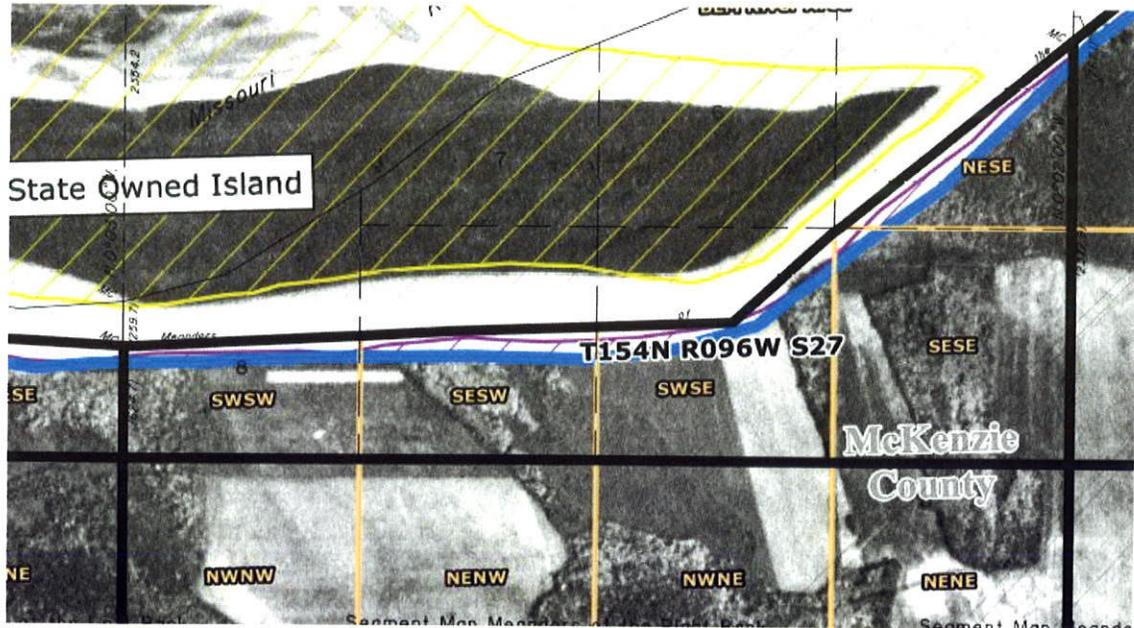
*This is my short analysis of the area in and around my Tracts. This is not a final opinion or decision. But rather a quick analysis to help Wenck identify differences between the Segment Map, Supplemental Plats and Wenck Survey.*

#### Conclusion

*-This area has a definable OHWM and the same feature (bank) was used by the COE Segment Map, verified by BLM Supplemental Plats, and Wencks Survey. The discrepancy lies in georeferencing Discrepancy/differences.*

#### The Discrepancy/Difference

-The difference between the Wenck Survey and BLM'S determination is between 80 and 170 feet. The difference between Wenck's OHWM and its georeferenced Segment Map is 0-120 feet. See below PDF - Lonney1 -The Black line is BLM's Segment Map OHWM, Pink is where Wenck says Segment Map is. Blue is their OHWM.



-Another point is that the Wenck survey gave no indication that BLM Black line was its representation of the OHWM prior to the lake.

#### The Cause of the Discrepancy/Difference

-The Wenck Survey says that their georeferencing average error was 48.5 feet. In BLM's Supplemental Plat reports they acknowledge some distortions of 100 feet, with most being around 30 ft. I would think that any line within 48.5 would become the presumptive OHWM.... I would expect that this area would be in the realm of having a 30-75 feet difference considering we definitely identified the same bank, and this is all the better a georeferencing process of old photos in a flooded river plain can achieve.

**However, this area definitely has greater error, which explains why there is a greater difference than expected (120-170 feet).**

Look at PDF -Lonney1 again, notice on the South boundary of the SWSW and SESW that there is an occupation that is approximately 100 feet South of the used GCDB section line.

This same offset is evident in the adjacent sections, indicating that there is around 100 feet of distortion in the georeferencing of this photo (over twice the

stated average). Once this error is corrected we have a difference of 20-70 which is what we would expect and should warrant acceptance of the Segment Map/BLM Supplemental Plat.

*This is the problem with ONLY georeferencing old photos compared to current photos **a mile away** from the original river (which is what Wenck did). Wencks procedure in doing this is very valid to start, however after that is complete, they should have evaluated things such as local control on a photo to adjust the section lines to. This local control is the BEST EVIDENCE of the section line. When one line that does not match up with the rest probably doesn't warrant adjustment, but when multiple visible lines of occupation show a 100 ft. distortion, that needs to be addressed by re-georeferencing to get the photo best overlaid on the section lines.*

14. In addition to owning an interest in Column 1 Tracts, I own an interest in Section 34, T154N-R96W, not covered by the Wenck Survey. With the completion of the Wenck Survey, was there ever a possibility that the OHWM travelled into Section 34, T154N-R96W? Is Section 34, T154N-R96W at risk to being taken or acquired by the State?
15. Was there any evidence on any of the information utilized in the Wenck Survey or previously by the State that created the possibility that the OHWM travelled into Section 34, T154N-R96W?
16. Why didn't the State accomplish the delineation of the OHWM when it claimed the island just north of Column 1 Tracts? **(See Attachment 3, Corps Segment Map Y Survey), (See Attachment 4, Wenck Survey OHWM Delineation Map 6 of 18)**
17. Regarding Wenck Survey Power Points, was full consideration given to each of the points of interest that I have highlighted in yellow, as the same applies specifically to my three Tract? Regarding the highlighted Overall Results, I request that additional numbers be added to provide for the Corps Segment Map Y Survey area. This should give a more accurate overview between actual survey areas. **(See Attachment 8, Partial Copy of Wenck Survey Power Points)**

## OVERALL RESULTS

(from River Mile 1482 to 1553.5).

USACE OHWM	16,687 acres
Project OHWM	27,089 acres
Total increase in OHWM	10,402 acres
Total increase in OHWM	162%



Thank you in advance for your help and assistance regarding the above matter. Please don't hesitate to contact me if you have any question or if anything further is need. It's my hope that upon further review and consideration given to the above, the Wenck Survey will be amended so as to utilize the Corps Segment Map Y Survey when determining the OHWM, as it relates to my tracts.

Regards,

***Lonney H. White, Jr.***

Whitetail Wave LLC  
Lonney H. White, Jr., Sole Member

w/Attachments

Attachment 1  
Judgment On Declaration of Taking

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NORTH DAKOTA  
SOUTHWESTERN DIVISION

FILED  
APR 17 1953  
BEATRICE A. HANCOCK, Clerk

UNITED STATES OF AMERICA,

Plaintiff,

Civil No. 2639 .

-vs-

3,059.56 Acres of Land, More or Less,  
Situate in McKenzie County, State of  
North Dakota; Harry B. Mendenhall, et al.,  
and Unknown Owners,

JUDGMENT ON DECLARATION  
OF TAKING

Defendants.

This day comes the Plaintiff in the above-entitled cause, the United States of America, by Harry Lashkowitz, Assistant United States Attorney for the District of North Dakota, and moves the Court to enter Judgment vesting title in the United States of America in fee simple, subject to existing easements for public roads and highways, public utilities, railroads and pipe lines, and the reservations of minerals to the land owners specifically set forth in paragraph three of the Declaration of Taking herein, in and to the property hereinafter described and described in the Declaration of Taking, as well as the Complaint herein.

Thereupon the Court proceeded to hear and pass upon said Motion, Complaint and Declaration of Taking, and finds as follows:

First- That each and all of the allegations in the Complaint and the Declaration of Taking are true; and that the United States of America is entitled to acquire property by eminent domain for the purposes set out and prayed in said Complaint.

Second - That a Complaint in condemnation was filed in the above-entitled action at the request of the Secretary of the Army, the authority empowered by law to acquire the lands described in the Complaint, under instructions from the Attorney General of the United States, the person authorized by law to direct the institution of such condemnation proceedings.

Third- That in said Complaint and Declaration of Taking a statement of the authority under which the public use for which said lands are taken is set out, and that the Secretary of the Army is the person authorized and empowered by law to acquire lands such as are described in the Complaint, which is in pursuance of and under the authority of the provisions of the Act of Congress approved February 26, 1931 (46 Stat. 1421, 40 U.S.C. Sec. 258a) and Acts supplementary to and amendatory thereof; the Acts of Congress approved April 24, 1888 (25 Stat. 94, 33 U.S.C. 591); March 1, 1917 (39 Stat. 948, 33 U.S.C. 701); December 22, 1944 (Public Law 534, 79th Congress, Second Session); also under the Civil Functions Appropriation Act, 1951 approved October 24, 1951 (Public Law 203, 82nd Congress); and that the public use for which said lands are taken is in connection with the construction and establish-

168  
ment of a project known as the Garrison Dam and Reservoir Project, the purpose of which is to adequately provide flood control in the basin of the Missouri River for the use and benefit of the public generally and for such other uses as may be authorized by Congress or by Executive Order.

Fourth- That a proper description of the lands sought to be taken sufficient for the identification thereof is set out in said Declaration of Taking.

Fifth- A statement of the estate or interest in said lands taken for said public use is set out in the Declaration of Taking.

Sixth- A plat showing the lands taken is set out.

Seventh- A statement is contained in said Declaration of Taking to the effect that the estimated amount of compensation for the taking of the property described therein, in the opinion of the Secretary of the Army, will probably be within any limits prescribed by Congress on the price to be paid therefor.

Eighth- A statement is contained in said Declaration of Taking of the sum of money estimated by the acquiring authority to be just compensation for all of the lands to be taken thereunder, together with all buildings and improvements thereon and appurtenances thereto, which is a total of \$ 277,000.00, and said sum has been deposited in the Registry of this Court.

And the Court having considered the Complaint in condemnation herein as it relates to the hereinafter described lands, Declaration of Taking, and the statutes in such case made and provided, and it appearing to the Court that the United States of America was and is entitled to take said described property and have title thereto vested in it pursuant to law, it is, therefore, considered by the Court, and it is the

ORDER AND JUDGMENT of the Court that title to the hereinafter described lands vested in the United States of America upon the filing of the Declaration of Taking herein and the deposit in the Registry of the Court of the sum of \$ 277,000.00 and the estate taken is the fee simple title, subject to existing easements for public roads and highways, public utilities, railroads and pipe lines and reserving, however, to the owner of the land or the owner of any interest therein, including third party lessees, their heirs, successors and assigns, all oil and gas rights therein, on or under said described lands, with full rights of ingress and egress for exploration, development, production and removal of oil and gas; upon condition that the oil and gas rights so reserved are subordinated to the right of the United States to flood and submerge the said lands permanently or intermittently in the

construction, operation and maintenance of the Garrison Dam and Reservoir, and that any exploration or development of such rights shall be subject to federal or state laws with respect to pollution of waters of the reservoir; provided further that the District Engineer, Corps of Engineers, Garrison District, or his duly authorized representative shall approve in furtherance of the exploration and/or development of such reserved interests, the type of any structure and/or appurtenances thereto now existing or to be erected in connection with such exploration and/or development, said structures and/or appurtenances thereto not to be of a material determined to create floatable debris.

IT IS FURTHER ORDERED that leave be and is hereby granted the United States of America to take immediate possession of all of the tracts of land in this action, to the extent of the interest to be acquired by the United States of America and proceed with such public works thereon as have been authorized by Congress.

The lands taken herein are situate in the County of Williams, State of North Dakota, and are described in Exhibit "A", attached hereto and made a part hereof.

This case is held open for such other and further orders, judgments and decrees as may be held necessary in the premises.

Dated this 15<sup>th</sup> day of August, 1953.

CHARLES J. VOGEL  
Judge, U. S. District Court.

The following described lands situate in McKenzie County, North Dakota, and more particularly described as follows:

TRACT NO. Y-2282 - Lot 5 of Section 25, Lot 7, South half of the Southeast quarter ( $S\frac{1}{2}SE\frac{1}{4}$ ), Southwest quarter of the Southwest quarter ( $SW\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, Lot 6 and those portions of the Southwest quarter of the Southeast quarter ( $SW\frac{1}{4}SE\frac{1}{4}$ ), and the Southeast quarter of the Southwest quarter ( $SE\frac{1}{4}SW\frac{1}{4}$ ) of Section 27 lying South of the Missouri River, Southeast quarter ( $SE\frac{1}{4}$ ), South half of the Northeast quarter ( $S\frac{1}{2}NE\frac{1}{4}$ ), Northwest quarter of the Northeast quarter ( $NW\frac{1}{4}NE\frac{1}{4}$ ) of Section 34, North half ( $N\frac{1}{2}$ ), North half of the South half ( $N\frac{1}{2}S\frac{1}{2}$ ), Southwest quarter of the Southwest quarter ( $SW\frac{1}{4}SW\frac{1}{4}$ ) of Section 35, all in Township 154 North, Range 96 West of the 5th P.M., plus accretions, Lot 4 of Section 2, Lots 1 and 2 of Section 3 in Township 153 North, Range 96 West of the 5th P.M., containing 1200.51 acres, more or less.

TRACT NO. Y-2284 - Lot 8, Northeast quarter of the Southwest quarter ( $NE\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, and also those portions of Northwest quarter of the Southwest quarter ( $NW\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, and Northeast quarter of the Southeast quarter ( $NE\frac{1}{4}SE\frac{1}{4}$ ) of Section 27, lying South and East of the Missouri River, all in Township 154 North, Range 96 West of the 5th P.M., plus accretions, containing 157.63 acres, more or less.

TRACT NO. Y-2288 - Lot 6 of Section 25 in Township 154 North, Range 96 West of the 5th P.M., plus accretions, containing 31.30 acres, more or less.

TRACT NO. Z-2332 - East half of the Southwest quarter ( $E\frac{1}{2}SW\frac{1}{4}$ ), Lots 4 and 5 of Section 31 in Township 154 North, Range 97 West of the 5th P.M., containing 156.58 acres, more or less.

TRACT NO. AA-2482 - North half of Lot 4 of Section 5, North half of Lot 1 in Section 6 in Township 153 North, Range 97 West of the 5th P.M., containing 39.86 acres, more or less.

TRACT NO. Z-2333 - South half of the Northeast quarter ( $S\frac{1}{2}NE\frac{1}{4}$ ), Southeast quarter ( $SE\frac{1}{4}$ ), of Section 31, Southwest quarter of the Northwest quarter ( $SW\frac{1}{4}NW\frac{1}{4}$ ), North half of the Southwest quarter ( $N\frac{1}{2}SW\frac{1}{4}$ ) of Section 32 in Township 154 North, Range 97 West of the 5th P.M., containing 360.00 acres, more or less.

TRACT NO. AA-2469 - Lots 3, 4 and 5, Southeast quarter of the Northwest quarter ( $SE\frac{1}{4}NW\frac{1}{4}$ ) of Section 1 in Township 153 North, Range 98 West of the 5th P.M., plus accretions, containing 152.50 acres, more or less.

TRACT NO. Z-2337 - West half of the Southeast quarter ( $W\frac{1}{2}SE\frac{1}{4}$ ), South half of the Southwest quarter ( $S\frac{1}{2}SW\frac{1}{4}$ ) of Section 32 in Township 154 North, Range 97 West of the 5th P.M., containing 160.00 acres, more or less.

TRACT NO. Z-2342 - Lot 7 of Section 28, Lots 5, 6, 7, and 8 of Section 29, Lots 7 and 8 of Section 30, that portion of the Northwest quarter of the Northeast quarter ( $NW\frac{1}{4}NE\frac{1}{4}$ ) lying South of the Missouri River, Northeast quarter of the Northeast quarter ( $NE\frac{1}{4}NE\frac{1}{4}$ ) of Section 31 in Township 154 North, Range 97 West of the 5th P.M., containing 258.44 acres, more or less.

TRACT NO. AA-2477 - Southeast quarter of the Northeast quarter ( $SE\frac{1}{4}NE\frac{1}{4}$ ), Northeast quarter of the Southeast quarter ( $NE\frac{1}{4}SE\frac{1}{4}$ ) of Section 1 in Township 153 North, Range 98 West of the 5th P.M., Lots 5 and 6 of Sec. 6 in Township 153 North, Range 97 West of the 5th P.M., containing 157.00 acres, more or less.

TRACT NO. Z-2344 - Lot 3 of Section 4 in Township 153 North, Range 97 West of the 5th P.M., containing 39.97 acres, more or less.

District Court of the United States

313 171

District of North Dakota

UNITED STATES OF AMERICA }
DISTRICT OF NORTH DAKOTA }

SS:

I, Beatrice A. McMichael, Clerk of the District Court of the United States for the District of North Dakota, do hereby certify that I have carefully compared the foregoing copy with the original thereof which is in my possession as such Clerk and that such copy is a correct transcript from such original. JUDGMENT ON DECLARATION OF TAKING in the matter of United States of America vs. 3,059.56 Acres of Land, More or Less, Situate in McKenzie County, State of North Dakota; Harry B. Mendenhall, et al., and Unknown Owners, - Civil No. 2639;

IN TESTIMONY WHEREOF I have hereunto set my hand and affixed the seal of said Court, at Fargo, in said District, this 17th day of August, A. D. 1953

Beatrice A. McMichael, Clerk
By Eula G. Baldwin, Deputy

Document No. 144027

Delinquent Taxes and Special Assessments, or Installments of said Assessments, paid or transferred on...

29
County Auditor
Deputy

OFFICE OF REGISTER OF DEEDS
STATE OF NORTH DAKOTA, COUNTY OF MCKENZIE
I hereby certify that the within instrument was filed in this office for record on the 17th day of Dec. A. D. 1953 at 11 o'clock A. M., and was duly recorded in Book 43 of 1953 on Page 167
E. T. Marshall
REGISTER OF DEEDS
Deputy

Fee 5.00

Attachment 2  
Y 2282 Appraisal Docs.

Project symbol No. Garrison Dam - Reservoir Area

Sheet No. Y-2282

Name of owner: H. B. Mendenhall

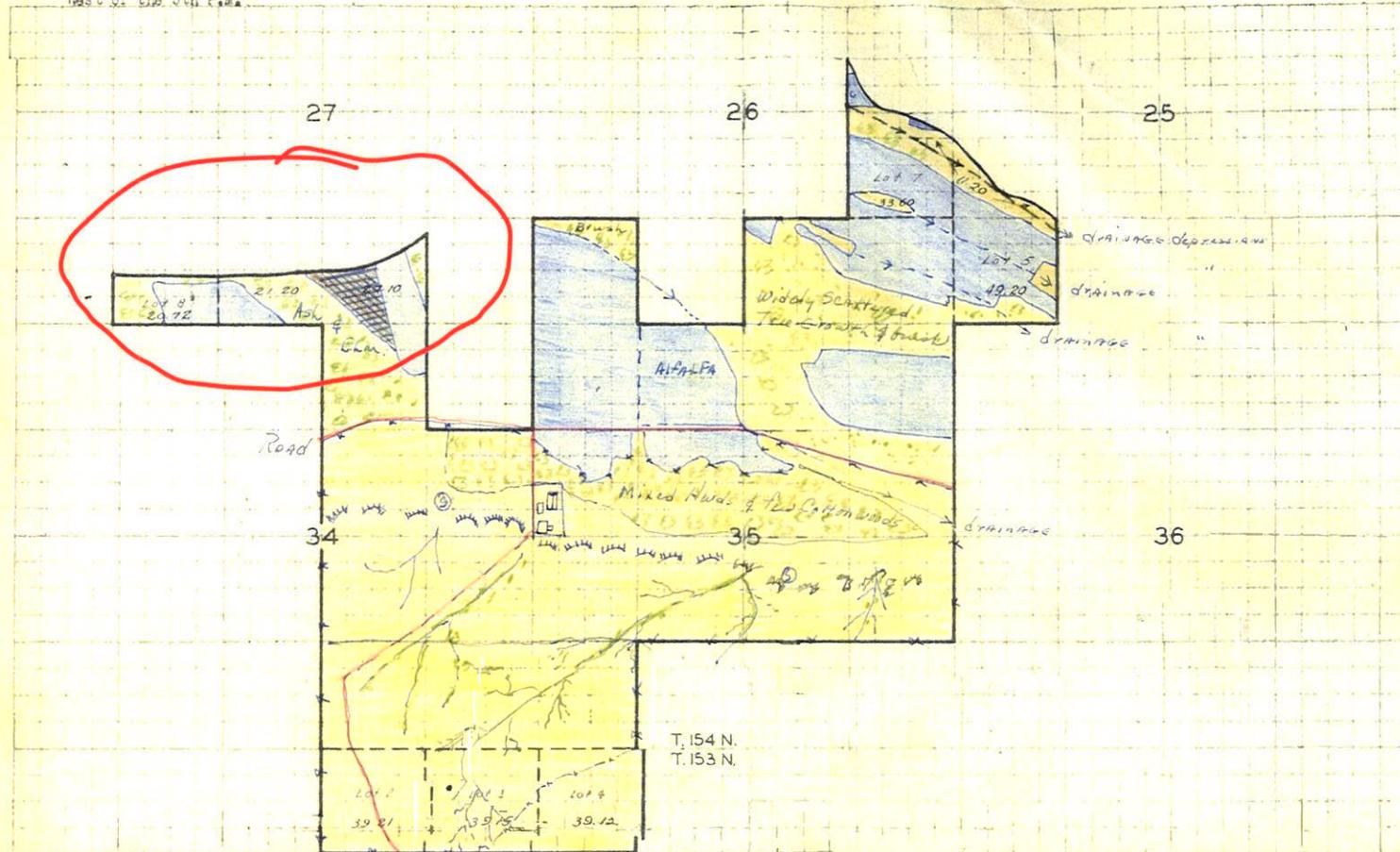
Field work by: Jack Turnquist

Date: 29 January 1951

Description of tract: State - North Dakota

County - McKenzie

Lot 6 of Section 26, Lot 7, South half of the Southeast quarter (S $\frac{1}{2}$ SE $\frac{1}{4}$ ), Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 26, Lot 8 and those portions of the Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), and the Southeast quarter of the Southwest quarter (SE $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 27 lying South of the Missouri River, Southeast quarter (SE $\frac{1}{4}$ ), South half of the Northeast quarter (S $\frac{1}{2}$ NE $\frac{1}{4}$ ), Northwest quarter of the Northeast quarter (NW $\frac{1}{4}$ NE $\frac{1}{4}$ ) of Section 34, North half (N $\frac{1}{2}$ ), North half of the South half (N $\frac{1}{2}$ S $\frac{1}{2}$ ), Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 35 all in Township 154 North, Range 96 West of the 5th P.M. plus accretions, Lot 4 of Section 2, Lots 1 and 2 of Section 3 in Township 153 North, Range 96 West of the 5th P.M.



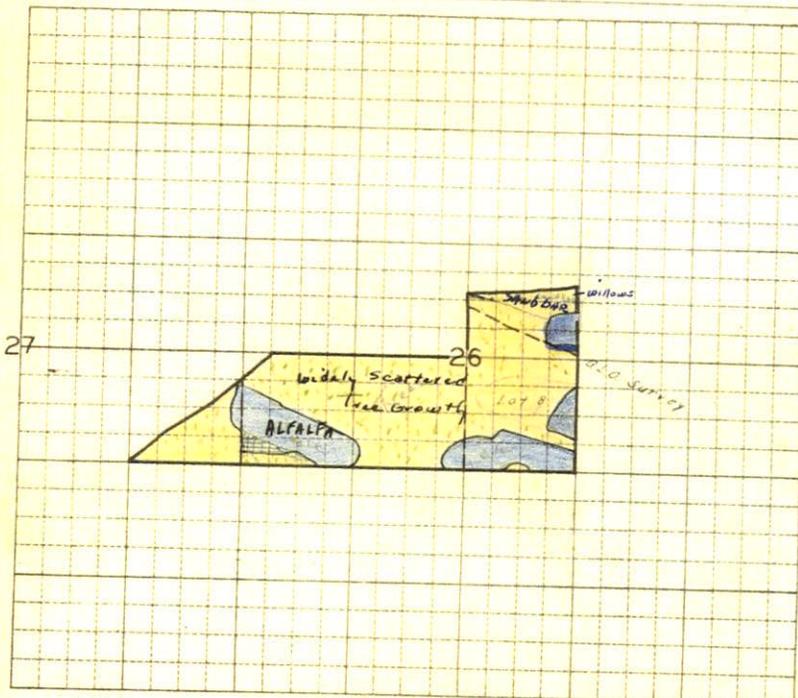
CLASSES OF LAND

Grass land  
Moisture rich & Trace of Grass Past. 150  
Forest land 50-100  
Tussock Grass - XXXX  
Grades of each class of land must be shown on the map page.  
A note of any other data of land involved

Y-2282  
Owner or Survey, Deed Desc. & G.L.O. Rods. which  
shows the total acreage 1200.51  
M.P.A. Jack Turnquist (revised 1 October 1951  
and 17 February 1953 by M.C.J.)

TRACT MAP (WITH GRID)

Project symbol No. Garrison Dam - Reservoir Area Tract No. Y-2284  
 Name of owner Carrie E. Mendenhall  
 Field work by Jack Turnquist Date 8 November 1950  
 Description of tract State - North Dakota County McKenzie  
Lot 8, Northeast quarter of the Southwest quarter (NE $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 26, and  
also those portions of Northwest quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of  
Section 26, and Northeast quarter of the Southeast quarter (NE $\frac{1}{4}$ SE $\frac{1}{4}$ ) of Section  
27, lying South and East of the Missouri River, all in Township 154 North, Range  
96 West of the 5th P.M., plus accretions.



CLASSES OF LAND

- Crop land
- Pasture land Woods
- Forest land Timber & Barren
- \*

Grades of each class of land must be shown on the map proper.  
 \* Name of any other class of land involved.

(Scale 4 inches equals 1 mile)

I certify that this is an accurate map of Tract Y-2284 based on Survey, Deed Desc. & G.L.O. Records, which shows this tract to contain 157.63 acres, more or less.  
 Name Jack Turnquist  
 Title Draftsman  
 Date 8 November 1950  
 Indicate whether map is based on General Land Office records, aerial survey, deed description or actual survey.

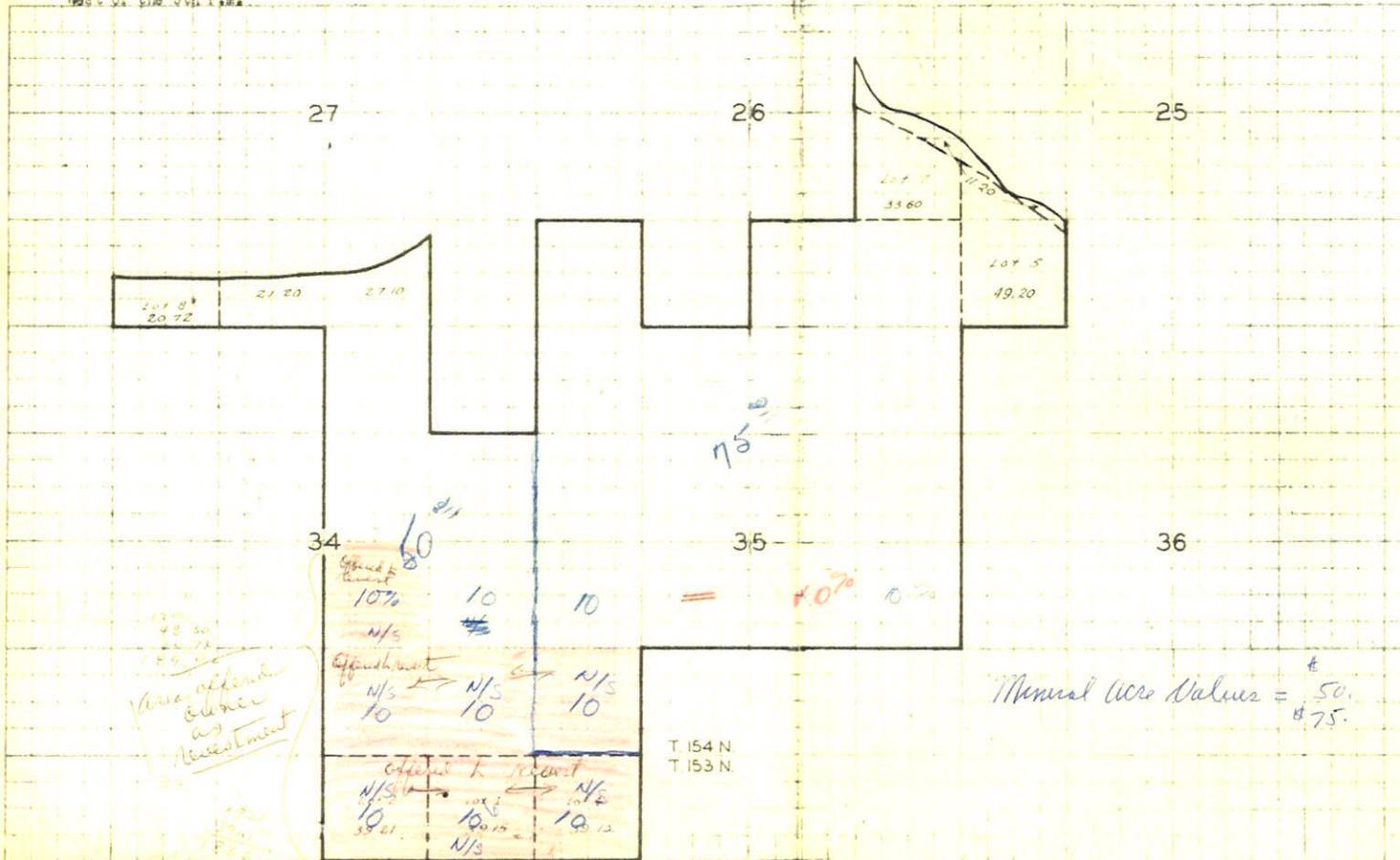


1951

TRACT MAP (111-6510)

Project symbol No. Garrison Dam - Reservoir Area Tract No. Y-2282  
 Name of owner H. B. Mendenhall  
 Field work by Jack Turnquist Date 29 January 1951  
 Description of tract State - North Dakota County - McKenzie

Lot 5 of Section 26, Lot 7, South half of the Southeast quarter (S $\frac{1}{2}$ SE $\frac{1}{4}$ ), Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 26, Lot 8 and those portions of the Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), and the Southeast quarter of the Southwest quarter (SE $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 27 lying South of the Missouri River, Southeast quarter (SE $\frac{1}{4}$ ), South half of the Northeast quarter (S $\frac{1}{2}$ NE $\frac{1}{4}$ ), Northwest quarter of the Northeast quarter (NW $\frac{1}{4}$ NE $\frac{1}{4}$ ) of Section 34, North half (N $\frac{1}{2}$ ), North half of the South half (N $\frac{1}{2}$ S $\frac{1}{2}$ ), Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 35 all in Township 154 North, Range 96 West of the 5th P.M. plus accretions, Lot 4 of Section 2, Lots 1 and 2 of Section 3 in Township 153 North, Range 96 West of the 5th P.M.



CLASSES OF LAND

Crop land \_\_\_\_\_  
 Pasture land \_\_\_\_\_  
 Forest land \_\_\_\_\_

Grades of each class of land must be shown on the map proper.

\* Name of any other class of land proposed.

Survey, Deed Desc. & S.L.O. Rods. which show the area, more or less  
 Jack Turnquist (revised 1 October 1951 and 17 February 1953 by M.C.J.)



Appraisal Supplement  
Impairment of Interest in Gas and Oil Rights

Tract No. 42284 Carroll E. Marshall                     , Rge.                       
 Name of Owner (Surface) (Tract Map Attached)  
 Acres 157.63

Acres which can be drilled out from onshore locations by vertical drilling methods under 40 acre spacing pattern                     .

Acres which cannot be drilled out from onshore locations by vertical drilling methods under 40 acre spacing pattern 157.63.

A. Impairment of Royalty Interest in Gas and Oil Rights:

Acres	Mineral Acre Value	Total Mineral Acre Value	Est. % of Impairment	Total Amount of Impairment
157.63	\$ 75 <sup>00</sup>	\$	20%	\$ 2364 <sup>00</sup>

Recommended Compensation for Impairment of Royalty Interest - - \$ 2365<sup>00</sup>

B. Impairment of Leasehold Interest in Gas and Oil Rights:

Acres	Impairment Per Acre	Amount of Impairment
	\$	\$

Recommended Compensation for Impairment of Leasehold Interest - - \$                     

C. Total of Impairment: Royalty and Leasehold - - \$                     

Remarks: *Oil & gas Minerals on this area have been greatly depreciated since time of taking because of dry hole in adjoining Section 36.*

D. The amounts above indicated are believed to be the impairment which results to the value of the gas and oil interests in this tract when such interests are reserved to owners and subordinated to the Government's right to flood permanently or intermittently. The amounts determined as impairment are substantiated by the best information available and by the opinions and recommendations provided by experts following study of the impairment problem. I certify that I have no present or intended future interest in this property.

Date of Valuation 7 Aug 1953

Date of Report 22 May 1956

                      
Appraiser

**APPRAISAL REPORT**

PROJECT Garrison Dam and Reservoir, North Dakota

TRACT Y-2282 and Y-2284

REVISED APPRAISAL

STATE North Dakota COUNTY, McKenzie CITY, DISTRICT, OR TOWNSHIP Twp. 154 N., Rge. 96 W.

PROPERTY OF H. B. Mendenhall and Carrie E. Mendenhall ADDRESS Charlson, North Dakota

LAND DESCRIPTION Owner Supervised (H. Jellesed, Charlson, North Dakota, does farming on part)

Tract No. Y-2282

Lot 5 of Section 25, Lot 7, South half of the Southeast quarter ( $S\frac{1}{2}SE\frac{1}{4}$ ), Southwest quarter of the Southwest quarter ( $SW\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, Lot 8 and those portions of the Southwest quarter of the Southeast quarter ( $SW\frac{1}{4}SE\frac{1}{4}$ ), and the Southeast quarter of the Southwest quarter ( $SE\frac{1}{4}SW\frac{1}{4}$ ) of Section 27 lying South of the Missouri River, Southeast quarter ( $SE\frac{1}{4}$ ), South half of the Northeast quarter ( $S\frac{1}{2}NE\frac{1}{4}$ ), Northwest quarter of the Northeast quarter ( $NW\frac{1}{4}NE\frac{1}{4}$ ) of Section 34, North half ( $N\frac{1}{2}$ ), North half of the South half ( $N\frac{1}{2}S\frac{1}{2}$ ), Southwest quarter of the Southwest quarter ( $SW\frac{1}{4}SW\frac{1}{4}$ ) of Section 35 all in Township 154 North, Range 96 West of the 5th P.M., plus accretions. Also Lot 4 of Section 2, Lots 1 and 2 of Section 3 in Township 153 North, Range 96 West of the 5th P.M.

Tract No. Y-2284

Lot 8, Northeast quarter of the Southwest quarter ( $NE\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, and also those portions of Northwest quarter of the Southwest quarter ( $NW\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, and Northeast quarter of the Southeast quarter ( $NE\frac{1}{4}SE\frac{1}{4}$ ) of Section 27, lying South and East of the Missouri River, all in Township 154 North, Range 96 West of the 5th P.M., plus accretions.

2/24/53  
blv

AREA (Acres) 1,358.14	APPRAISAL VALUATION	
	TOTAL PRESENT MARKET VALUE \$ 46,600.00	VALUE OF GROWING CROPS: SEVERANCE DAMAGES \$ None

I CERTIFY THAT I HAVE CAREFULLY EXAMINED THE ABOVE DESCRIBED PREMISES AND THE AMOUNT INDICATED REPRESENTS MY BEST UNBIASED JUDGMENT AS TO THE PRESENT MARKET VALUE OF THE FEE SIMPLE TITLE THERETO, EXCEPT AS OTHERWISE INDICATED. I DO FURTHER CERTIFY THAT I HAVE NO PRESENT OR INTENDED FUTURE INTEREST THEREIN.

DATE Reappraised 2/20/53  
8 August 1951

APPRAISER

RHP *Rales H. Papp*

APPROVED BY (Name and Title)

ENG FORM 1 Jan 46 241

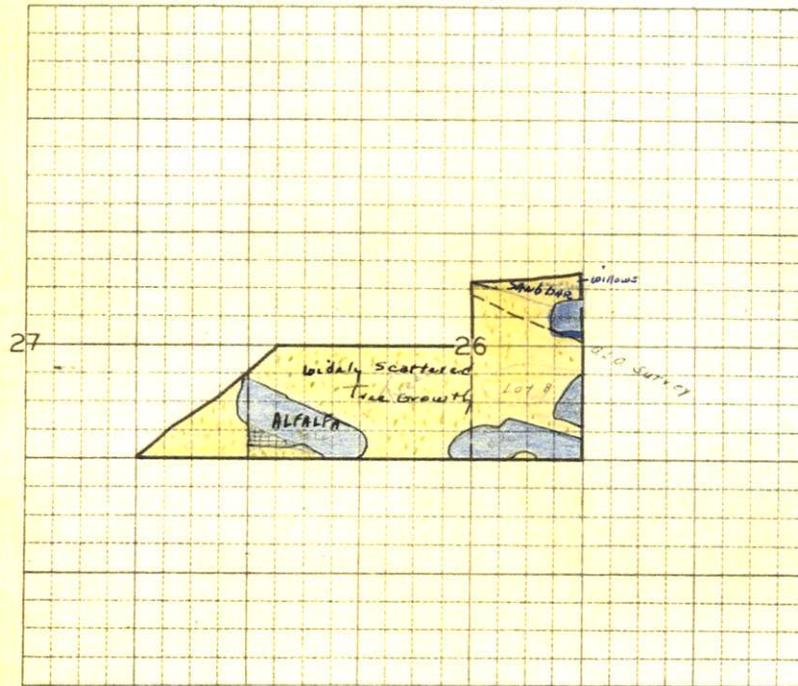
Incl #2 51

*Victor Lundeen* Chief, Appraisal Branch

3/5/53

TRACT MAP (WITH GRID)

Project symbol No. Garrison Dam - Reservoir Area Tract No. Y-2224  
 Name of owner Carrie E. Mendenhall  
 Field work by Jack Turnquist Date 8 November 1950  
 Description of tract State - North Dakota County McKenzie  
Lot 8, Northeast quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 26, and also those portions of Northwest quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 26, and Northeast quarter of the Southeast quarter (NE $\frac{1}{4}$ SE $\frac{1}{4}$ ) of Section 27, lying South and East of the Missouri River, all in Township 154 North, Range 96 West of the 5th P.M., plus accretions.



(Scale: 2 inches equals 1 mile)

CLASSES OF LAND

Crop land	
Pasture land <u>Willows</u>	
Forest land <u>Tree Growth</u>	
*	

Grades of each class of land must be shown on the map proper.  
 \* Name of any other class of land involved.

I certify that this is an accurate map of Tract Y-2224 based on Survey, Deed Desc. & G.L.C. Code, which shows this tract to contain 157.63 acres, more or less.  
 Name Jack Turnquist  
 Title Draftsman  
 Date 8 November 1950  
 Indicate whether map is based on General Land Office records, aerial survey, deed description or actual survey.





TRACT MAP (WITH GRID)

Project symbol No. Garrison Dam - Reservoir Area

Tract No. Y-2282

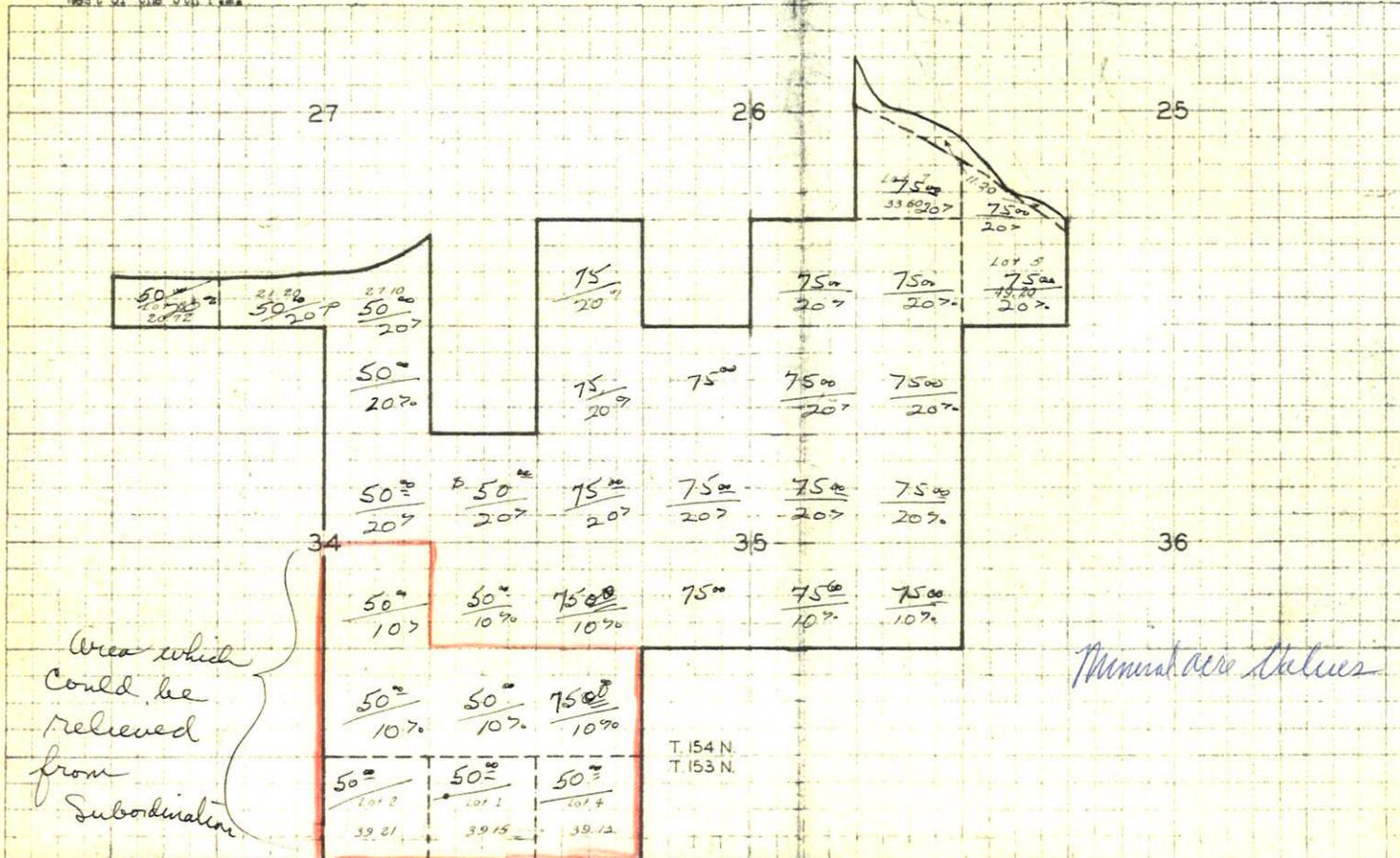
Name of owner. H. B. Mendenhall

Field work by Jack Turnquist

Date 29 January 1951

Description of tract State - North Dakota County - McKenzie

Lot 5 of Section 25, Lot 7, South half of the Southeast quarter (S $\frac{1}{2}$ SE $\frac{1}{4}$ ), Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 26, Lot 8 and those portions of the Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), and the Southeast quarter of the Southwest quarter (SE $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 27 lying South of the Missouri River, Southeast quarter (SE $\frac{1}{4}$ ), South half of the Northeast quarter (S $\frac{1}{2}$ NE $\frac{1}{4}$ ), Northwest quarter of the Northeast quarter (NW $\frac{1}{4}$ NE $\frac{1}{4}$ ) of Section 34, North half (N $\frac{1}{2}$ ), North half of the South half (N $\frac{1}{2}$ S $\frac{1}{2}$ ), Southwest quarter of the Southwest quarter (SW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 35 all in Township 15 $\frac{1}{2}$  North, Range 96 West of the 5th P.M. plus accretions, Lot 4 of Section 2, Lots 1 and 2 of Section 3 in Township 15 $\frac{1}{2}$  North, Range 96 West of the 5th P.M.



CLASSES OF LAND

Crop land \_\_\_\_\_

Pasture land \_\_\_\_\_

Forest land \_\_\_\_\_

Grades of each class of land must be shown on the map proper.

\* Name of any other class of land involved \_\_\_\_\_

Scale of map: \_\_\_\_\_

Verify that this is an accurate map of Tract Y-2282 based on Survey, Deed Desc. & G.L.O. Bds. which shows the tract to contain 1200.51 acres, more or less.

Made by Jack Turnquist (revised 1 October 1951 and 17 February 1953 by M.C.J.)

Date \_\_\_\_\_

Indicate whether map is based on Section Land Office records or on original survey plat, field notes or other source.

Appraisal Supplement  
Impairment of Interest in Gas and Oil Rights

Tract No. Y2284 Carrie E. Marshall Tract No. \_\_\_\_\_, Acre. \_\_\_\_\_  
 Name of Owner (Surface) (Tract Map Attached)  
 Acres 157.63

Acres which can be drilled out from onshore locations by vertical drilling methods under 40 acre spacing pattern \_\_\_\_\_.

Acres which cannot be drilled out from onshore locations by vertical drilling methods under 40 acre spacing pattern 157.63.

A. Impairment of Royalty Interest in Gas and Oil Rights:

Acres	Mineral Acre Value	Total Mineral Acre Value	Est. % of Impairment	Total Amount of Impairment
157.63	\$ 75 <sup>00</sup>	\$	20%	\$ 2364 <sup>00</sup>

Recommended Compensation for Impairment of Royalty Interest -- \$ 2365<sup>00</sup>

B. Impairment of Leasehold Interest in Gas and Oil Rights:

Acres	Impairment Per Acre	Amount of Impairment
	\$	\$

Recommended Compensation for Impairment of Leasehold Interest -- \$ \_\_\_\_\_

C. Total of Impairment: Royalty and Leasehold -- \$ \_\_\_\_\_

Remarks:

*Oil & gas minerals on this acre have been greatly depreciated since time of taking because of dry hole in adjoining Section 36.*

D. The amounts above indicated are believed to be the impairment which results to the value of the gas and oil interests in this tract when such interests are reserved to owners and subordinated to the Government's right to flood permanently or intermittently. The amounts determined as impairment are substantiated by the best information available and by the opinions and recommendations provided by experts following study of the impairment problem. I certify that I have no present or intended future interest in this property.

Date of Valuation 7 Aug 1953

Date of Report 22 May 1956

J. S. Anderson  
Appraiser

**APPRAISAL REPORT**

PROJECT Garrison Dam and Reservoir, North Dakota

TRACT Y-2282 and Y-2284

REVISED APPRAISAL

STATE North Dakota

COUNTY, McKenzie

CITY, DISTRICT, OR TOWNSHIP Twp. 154 N., Rge. 96 W.

PROPERTY OF H. B. Mendenhall and Carrie E. Mendenhall

ADDRESS Charlson, North Dakota

LAND DESCRIPTION Owner Supervised (H. Jellesed, Charlson, North Dakota, does farming on part)

Tract No. Y-2282

Lot 5 of Section 25, Lot 7, South half of the Southeast quarter ( $S\frac{1}{2}SE\frac{1}{4}$ ), Southwest quarter of the Southwest quarter ( $SW\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, Lot 8 and those portions of the Southwest quarter of the Southeast quarter ( $SW\frac{1}{4}SE\frac{1}{4}$ ), and the Southeast quarter of the Southwest quarter ( $SE\frac{1}{4}SW\frac{1}{4}$ ) of Section 27 lying South of the Missouri River, Southeast quarter ( $SE\frac{1}{4}$ ), South half of the Northeast quarter ( $S\frac{1}{2}NE\frac{1}{4}$ ), Northwest quarter of the Northeast quarter ( $NW\frac{1}{4}NE\frac{1}{4}$ ) of Section 34, North half ( $N\frac{1}{2}$ ), North half of the South half ( $N\frac{1}{2}S\frac{1}{2}$ ), Southwest quarter of the Southwest quarter ( $SW\frac{1}{4}SW\frac{1}{4}$ ) of Section 35 all in Township 154 North, Range 96 West of the 5th P.M., plus accretions. Also Lot 4 of Section 2, Lots 1 and 2 of Section 3 in Township 153 North, Range 96 West of the 5th P.M.

Tract No. Y-2284

Lot 8, Northeast quarter of the Southwest quarter ( $NE\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, and also those portions of Northwest quarter of the Southwest quarter ( $NW\frac{1}{4}SW\frac{1}{4}$ ) of Section 26, and Northeast quarter of the Southeast quarter ( $NE\frac{1}{4}SE\frac{1}{4}$ ) of Section 27, lying South and East of the Missouri River, all in Township 154 North, Range 96 West of the 5th P.M., plus accretions.

2/24/53  
blv

AREA (Acres)

1,358.14

APPRAISAL VALUATION

TOTAL PRESENT MARKET VALUE  
\$ 46,600.00

VALUE OF GROWING CROPS: SEVERANCE DAMAGES \$ None

I CERTIFY THAT I HAVE CAREFULLY EXAMINED THE ABOVE DESCRIBED PREMISES AND THE AMOUNT INDICATED REPRESENTS MY BEST UNBIASED JUDGMENT AS TO THE PRESENT MARKET VALUE OF THE FEE SIMPLE TITLE THERETO, EXCEPT AS OTHERWISE INDICATED. I DO FURTHER CERTIFY THAT I HAVE NO PRESENT OR INTENDED FUTURE INTEREST THEREIN.

DATE Reappraised 2/20/53  
8 August 1951

APPRAISER

RHP

*Ralph N. Papp*

APPROVED BY (Name and Title)

ENG FORM 1 Jan 46

241

Incl #2 51

*Victor Lundeen* Chief, Appraisal Branch

3/5/53

LOCATION, NEIGHBORHOOD, ETC.

See Attached Sheets

CHARACTER, TOPOGRAPHY AND ADAPTABILITY

See Attached Sheet

ASSESSED VALUE

YEAR	ACRES	LAND	IMPROVEMENTS	OTHER	TOTAL
1948	1437.12	\$ 2078	\$ ---	\$ ---	\$ 2078

REMARKS RELATIVE TO ASSESSED VALUE 1948 tax \$124.24

Assessed valuation bears no relation to present market values in this area.

### Location, Neighborhood, Etc.

This tract is 33 miles Northwest from Sanish, North Dakota, on a reasonably good earth surfaced township road which also serves as a daily mail route. Subject tract is nine miles Northwest from Charlson rural school and 10 miles Northwest from rural Lutheran Church. There is no RRA or telephone service on this tract.

This area is characterized by general farms, which combine the raising of cereal grains and flax with the production of above average beef cattle. Farms are both large and small along with a few ranches which includes a thousand or more acres of grazing land together with extensive acreages of bottom land. Farm operations are with tractor drawn power equipment. With few exceptions, the building improvements are below average mostly due to the high rate of tenancy in this immediate area. Farm buildings of resident owner operators are modest but very suitable. Lands of the area range from low level bottomlands of the Missouri flood plain to steeply rolling rough uplands and level plateaus which range in elevation from 160-200 feet above the flood plain. Soils of the flood plain vary in texture from fine sandy loams to silty clay loams of variable fertility and productive capacity. Soils of the uplands are mostly clay loams of variable texture utilized primarily for hay and grazing purposes. The most desirable lands of the flood plain are utilized for alfalfa and cash grains, while poorly drained phases of the flood plain, valley slopes and the uplands are used for feed crops, hay and grazing. Dry land farming which incorporates summer fallow practice is most common. Yields are variable, but have been excellent the past ten years. Average carrying capacity of grazing land is about 2.5 acres per a.u. month. Farm tenancy is about 25 per cent and the usual terms are 1/4 crop delivered and cash for improvements and pasture. Average rainfall is about 15 inches, with the major portion falling during the 4 1/2 month growing season. Drought is a major hazard in crop production and cold winters with snow and blizzard conditions present some hazard in stock production.

### Character, Topography and Adaptability

Subject tract incorporates 157.63 acres of land title of which is vested in name of Carrie E. Mendenhall, wife of H. B. Mendenhall, and 1203.02 acres vested in name of H. B. Mendenhall. The above acreage plus 460 acres of leased grazing land makes up a contiguous well balanced farm unit. The owner carries and cares for from 30-100 head of cattle and supervises the cropping operations which are carried on by H. Jellesed, Charlson, North Dakota, a neighbor, on a share rent basis.

The 340 acres of cropland is all located on the Missouri River flood plain. 75 acres are used for production of alfalfa and the balance for the production of feed grains and cash crops. The balance of the tract 1020 acres and the 460 acres leased are used for grazing with some native hay being cut in years of more abundant production.

The cropland soil is clay and silty clay loam, a well drained soil which requires specialized handling, but yields abundantly even in years of sub-normal rainfall. 100 acres of this bottomland cropland is a nearly level block very well located in relation to the buildings and feed lots. 200 acres of the cropland has a topography which is level to undulating except for a few drainage depressions, which do aid surface drainage without materially affecting tillage operations. This portion of the cropland while comparable in production to the above mentioned 100

acres, lies away some distance from the farmstead and in irregular non-contiguous fields which lessens the operational efficiency.

Approximately 400 acres of this tract is bottomland tree and brush pasture which provides along with crop residues very good grazing and shelter during the bad weather seasons of the year. The tree cover is predominately hardwood growth, with a few scattered cottonwoods and some shrubs and brush. The tree cover is open canopied and a reasonably good cover of tall grasses, sweet clover, bromus and Canada wild rye and bluestems is present. Considerable edible browse is also available. Stock water can be found at frequent intervals all along the bottoms. No special water development efforts were viewed in the bottom pasture. In addition to the above acreage, 60 acres of more dense tree and brush pasture is located in the Northwest corner of the tract. While this acreage is not quite as well adapted to grazing it provides the needed post and pole replacements for the unit. The post and pole stock in this portion of the tract has been given consideration in the overall land price as virtually no market for posts and poles exist locally.

The soils of the bottomland pasture range from poorly drained phases of silt and silt clay loams of light sandy loams of accreted lands. The topography is level to undulating being cut occasionally by drainage depressions.

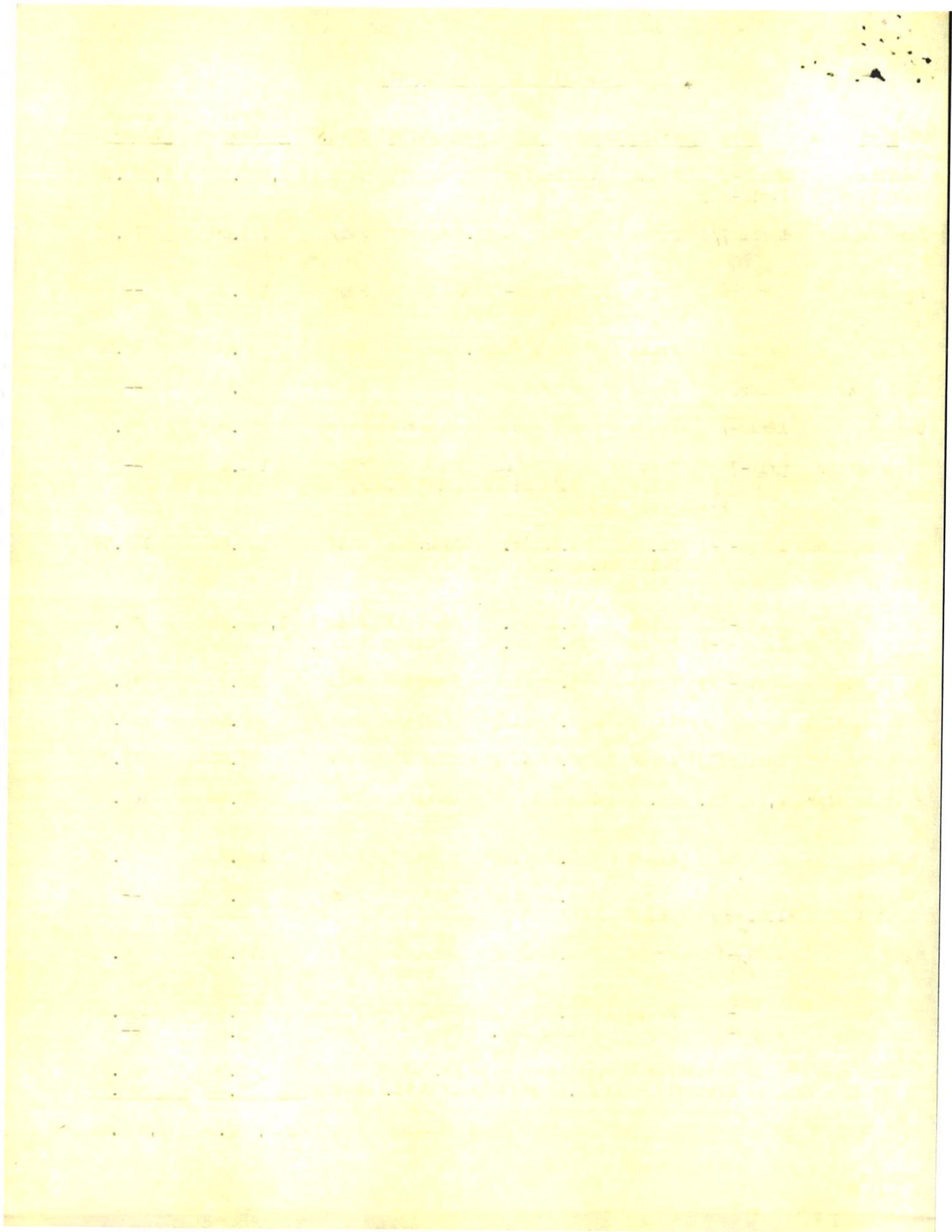
For summer pasture, this tract has 520 acres, plus a rented 460 acres of upland pasture. Topography of this portion is rolling to steep with large level plateaus at an elevation of 100-150 feet above the flood plain floor. The soils are predominantly clay loams rather thin and occasionally some stones. This upland pasture shows good management and it carries a very good stand of upland grasses, grama, western wheat, needle and thread, and edible sedges. The owner has two springs developed in this area which along with drainage water found in the draws through out the pasture provides a very good distribution of stock water. The draws which bisect this pasture acreage are for the most part gentle and carry a fairly good cover of grass and a spotted cover of tree growth which offers protection to stock. The tract is fenced around the perimeter and the only crossfences are between owned and leased tracts. Consideration for the value of the fence has been given in the overall value of the farm.

The balance of the tract is a 25 acre farmstead and feed lot. The farmstead has a good location, it is protected from the wind and snow on the North, West and East by a shelter belt of mixed hardwoods. It is situated about 20 rods from the township road. The feed lot covers about 15 acres, very good protection from wind and snow is provided by a dense growth of hardwoods. A spring is available right in the feed area and provides excellent water throughout the year.

The buildings on this tract are above average and some new construction, enlargement and repair have been carried on during the past 10-12 years, which have brought about a well balanced building situation. The owner started farming by purchasing a headquarter unit in 1921 during the later 1920's enlarged it some and finally rounded out his unit in 1944, by the purchase of 160 acres lying within his holdings.

VALUATION OF IMPROVEMENTS

<u>Kind</u>	<u>Size</u>	<u>Construction</u>	<u>Roof</u>	<u>Foundation</u>	<u>Cond.</u>	<u>Present Value</u>	<u>Salvage Value</u>
Dwelling Addition	24x32-8 ) 12x16-8 )	Frame	Shingles	Concrete	Good	\$ 6,500.00	\$ 1,000.00
Bunk House	16x22 7/8	Frame Stucco	Cedar Shgls.	Concrete	Fair	725.00	75.00
Log House	18x28x6	Log	Boards - Roll Roofing	None	Poor	100.00 <sup>w</sup>	--
Toilet	4x6x6	Frame	Cedar Shgls.	None	Good	50.00 <sup>w</sup>	10.00
Coal Shed	8x10x6	Frame	Boards	None	Poor	25.00 <sup>w</sup>	--
Garage	12x16-7	Frame	Roll Roofing	Concrete	Fair	200.00	75.00
Root Cellar	9x12-7	Dirt Walls Frame entrance	Plank and Pole Straw	None (Dirt Floor)	Fair	100.00 <sup>w</sup>	--
Chicken House	16x24-5-7	Fr. & Built Rite Siding	A.Shgls.	Concrete	Good	600.00	165.00
Barn Addition	24x30-12 16x30-5-12	Frame Frame	C.Shgls. C.Shgls.	Concrete Concrete	Fair ) Fair )	1,600.00	300.00
Grain Bin	10x12-7/9	Frame	R.Roofing	Concrete	Fair	75.00	15.00
Machine Shed	12-6x8 panels	Frame	R.Roofing	Concrete	Good	500.00	100.00
Grain Bin	10x14x7/9	Frame	R.Roofing	Concrete	Poor	75.00	15.00
2 Grain Bins	1,000 bu. cap.	Steel Metal		Scoria Base	Good	250.00	100.00
Granary	14x16x8	Frame	R.Roofing	Timber	Fair	100.00	20.00
Hog House Addition	8x12x6/9 10x14x6/9	Frame ) Frame )	A.Roofing	None	Poor	25.00 <sup>w</sup>	--
Shop	12x14-8	Frame	R.Roofing	Concrete & floor	Fair	175.00	35.00
Garage	16x24-8	Frame	R.Roofing	None	Good	500.00	150.00
Ice House	14x18-6	Log	Roof Bds. and paper	None	Poor	25.00 <sup>w</sup>	--
Windcharger and 16 batteries	4 steel post - 30 ft. tower					300.00	50.00
Windmill - Lindsay Brothers	- 30 ft. 4 post tower 8 ft. wheel					75.00	25.00
<b>TOTAL</b>						<b>\$12,000.00</b>	<b>\$2,135.00</b>



**DEEDS AND OFFERS OF SALE OF NEARBY PROPERTY**

GRANTOR	GRANTEE	DATE	DEED BOOK	PAGE	ACRES OR AREA	ACTUAL CONSIDERATION	PRICE PER ACRE
1. Gilbert Yttredahl	Woodrow Sveen	5/28/49	94	539	160	\$6700	\$41.87
2. Edward Goldberg Estate	J. Ernest Johnson	8/15/51	288	398	320	\$20500	64.06
3. Ilene A. Merk	Helga Lakken	6/6/50	297	44	160	1800	11.00

**COMPARISON OF ABOVE WITH PROPERTY APPRAISED** 1. Above tract composed of 150 acres of level to undulating silty clay cropland-10 acres of creek bottom-access fairly good, however, no buildings or fences. 2. 310 acres of cropland(clay loam), undulating to gently rolling topography, well improved and good access. 3. Upland grazing land with good cover of native grasses and sedges. Topography is rolling to steep. Soils-clay and clay loam. No improvements. Water is available but not well situated for maximum utilization. Subject tract cropland very similar in soil type and topography to #1 above, further it is tied with sufficient upland grazing land to form a suitable diversified unit. Subject

**GROWING CROPS**

TYPE	ACRES	ESTIMATED YIELD PER ACRE	UNIT VALUE	GROSS MARKET VALUE	COSTS TO MATURE, HARVEST & MARKET	NET CASH VALUE
tract croplands similar in productive capacity and development but not as to exact type and access is inferior to #2 above. Subject tract upland grazing land similar in type and topography to #3, however, it is fenced, has good stock water development and is tied in with a good feed producing base. Adequate buildings are situated on subject tract. Consideration has been given the increase in land values since dates of above sales.			\$	\$	\$	\$

**APPRAISAL OF TIMBER, MINERALS, ETC.**

Timber on tract consists of mixed hardwood which has potential for posts and poles, however, market for such products is restrained and affects value adversely. Consideration has been given the wood products in the overall land value. No consideration has been given in this appraisal to the value of mineral rights except as such value may have been reflected in recent sales of comparable properties where fee simple title without mineral reservation has been conveyed.

**GENERAL REMARKS (Discuss principal factors affecting conclusions)**

Desirability and saleability of this tract is good. Access is fair. This unit while not large is well balanced with better than average producing capacity from both cereal grain and grass producing standpoints. It is reasonably well improved and is well adapted to its present use.

**VALUATION OF LAND**

PRESENT USE	L TYPE	TOPOGRAPHY	AREA	UNIT VALUE	TOTAL VALUE
Bottom Cropland	Silty Clay Loam	Level	100	\$ 60.00	\$ 6,000.00
Bottom Cropland	Clay Loam	Level to Und.	203	50.00	10,150.00
Bottom Pasture	Clay Loam	Level to	282.53	15.00	4,237.95
	Heavy Clay	Undulating			
	Sandy Clay Loam				
Upland Pasture	Clay and Clay Loams	Rolling to Steep	515	15.00	7,725.00
Bottom tree and brush Pasture	Clay and Clay Loams	Level to Undulating	60	20.00	1,200.00
Sandbar	Riverwash	Level to Hummocky	19.98 <i>Rup</i>	5.00	99.90 <i>Rup</i>
Feed Lot & Bldg. site Tract No. Y-2284	Clay	Level to Und.	20	50.00	1,000.00
Bottom Cropland	Clay Loam	Level to Und.	37	50.00	1,850.00
Bottom Tree & Brush Past.	Clay Loam	Level to Und.	115.63	20.00	2,312.60
Sandbar	Riverwash	Level to Hummocky	5	5.00	25.00
<b>1,358.14 <i>Rup</i> TOTAL</b>					<b>\$ 34,600.45 <i>Rup</i></b>

**VALUATION OF IMPROVEMENTS**

KIND	SIZE	CONSTRUCTION	ROOF	FOUNDATION	CONDITION	PRESENT VAL.*	SALVAGE VALUE
See Attached Sheet							
<b>TOTAL*</b>						\$	\$

\* Estimated contribution improvements to appraised market value of the property as a whole.

Appraisal Supplement  
Impairment of Interest in Gas and Oil Rights

Tract No. 2282

Tw. \_\_\_\_\_, Rge. \_\_\_\_\_  
(Tract Map Attached)  
Acres 1200.51

Name of Owner (Surface) H. B. Mendenhall

Acres which can be drilled out from onshore locations by vertical drilling methods under 40 acre spacing pattern \_\_\_\_\_.

Acres which cannot be drilled out from onshore locations by vertical drilling methods under 40 acre spacing pattern \_\_\_\_\_.

A. Impairment of Royalty Interest in Gas and Oil Rights:

Acres	Mineral Acre Value	Total Mineral Acre Value	Est. % of Impairment	Total Amount of impairment
238.36	\$ 50	\$	10%	\$ 1191.80
39.13	50		10%	195.65
189.02	50		20%	1890.20
160.00	75		10%	1200.00
574.00	75		20	8610.00
<u>1200.51</u>				<u>13087.65</u>

Recommended Compensation for Impairment of Royalty Interest - - \$ 13100.00

B. Impairment of Leasehold Interest in Gas and Oil Rights:

Acres	Impairment Per Acre	Amount of Impairment
-------	---------------------	----------------------

Recommended Compensation for Impairment of Leasehold Interest - - \$ \_\_\_\_\_

C. Total of Impairment: Royalty and Leasehold - - \$ \_\_\_\_\_

Remarks: *See map attached. Subordination could be released from portions Calvert in reds. This would result in approximate 1500<sup>00</sup> saving to the Govt. This report supersedes all previous dated reports covering estimate concerning impairment.*

D. The amounts above indicated are believed to be the impairment which results to the value of the gas and oil interests in this tract when such interests are reserved to owners and subordinated to the Government's right to flood permanently or intermittently. The amounts determined as impairment are substantiated by the best information available and by the opinions and recommendations provided by experts following study of the impairment problem. I certify that I have no present or intended future interest in this property.

Date of Valuation 7 Aug 53  
Date of Report 22 May 1956

*Victor Linden*  
Appraiser

IN THE COUNTY COURT OF WILLIAMS COUNTY, STATE OF NORTH DAKOTA.

IN THE MATTER OF THE ESTATE OF CARRIE E. MENDENHALL, DECEASED.

45571

PERSONAL REPRESENTATIVE DEED OF DISTRIBUTION

This indenture made this 2nd day of April, 1981, by and between John D. French, Personal Representative of the estate of Carrie E. Mendenhall, deceased, whose post office address is P. O. Drawer 7, Ronan, Montana 59864, hereinafter referred to as Grantor, and the following named eleven separate parties, as tenants in common, hereinafter referred to as Grantees, to-wit:

Merle Jones and Bertha Jones, husband and wife, as joint tenants with right of survivorship	An undivided 1/11th Interest	716 E. Liveoak, Altus, OK 73521
Thomas Tipton and Ruby Tipton, husband and wife, as joint tenants with right of survivorship	An undivided 1/11th Interest	2318 Gunn Road, Carmichael, CA 95608
Len Humble and Hazel Humble, husband and wife, as joint tenants with right of survivorship	An undivided 1/11th Interest	P.O. Box 652, Hamilton, MT 59840
Kirk Mendenhall	An undivided 1/11th Interest	P.O. Box 216, Ray, ND 58849
Ward Mendenhall	An undivided 1/11th Interest	Route 2, Box 72A, Ronan, MT 59364
Robert Boucher	An undivided 1/11th Interest	Rural Route, Conrad, MT 59425
Thomas Boucher	An undivided 1/11th Interest	Rural Route, Valier, MT 59486
Mrs. Jo Mendenhall	An undivided 1/11th Interest	505 South 41st Street, Boulder, CO 80302
St. Luke Community Hospital, a Non-Profit Corporation	An undivided 1/11th Interest	P.O. Drawer J, Ronan, MT 59864
Bethel Lutheran Home for the Aged, a Non-Profit Corporation	An undivided 1/11th Interest	1515 2nd Avenue West, Williston, ND 58801
Montana Children's Home and Hospital	An undivided 1/11th Interest	840 Helena Ave., Helena, MT 59601

WITNESSETH:

WHEREAS, Grantor is the duly appointed and acting personal representative of the estate of Carrie E. Mendenhall, deceased, having been appointed and issued Letters Testamentary by the County Court in and for Williams County, North Dakota, on the 9th day of July, 1980; and

WHEREAS, Grantor, as the personal representative of said estate, has the power and authority pursuant to Chapter 30.1-18 N.D.C.C. to sell, transfer, and convey the real and personal property of said decedent; and

WHEREAS, under the provisions of the Last Will and Testament of Carrie E. Mendenhall, the Grantees named above are entitled to distribution of the real estate hereinafter described, as tenants in common.

NOW, THEREFORE, In accordance with the provisions of the Last Will and Testament of Carrie E. Mendenhall, deceased, Grantor does hereby grant, convey, transfer and assign to the Grantees, named above as tenants in common, free and clear of all liens and encumbrances, all of that certain real property in the Counties designated in the State of North Dakota, described more fully as follows, to-wit:

SEE SCHEDULE "A" ATTACHED AND MADE A PART HEREOF FOR A DETAILED DESCRIPTION AND THE INTERESTS CONVEYED HEREIN.

WITNESS, The hand of the Grantor as of the day and year first above written.

  
John D. French, Personal Representative

## EXHIBIT "A"

IN THE MATTER OF THE ESTATE OF CARRIE E. MENDENHALL, DECEASED

A. Undivided 1/3 interest in all of the oil, gas and all other minerals in and under the following described premises:

McKenzie County, North Dakota  
Township 151 North, Range 104 West  
 Section 27: Lot 2, NW $\frac{1}{4}$ NE $\frac{1}{4}$  (84.10 acres)

B. Undivided 1/4 interest in and to all of the oil, gas and other minerals in and under the following described premises:

Williams County, North Dakota  
Township 154 North, Range 95 West  
 Section 20: E $\frac{1}{2}$ , S $\frac{1}{2}$ NW $\frac{1}{4}$ , NE $\frac{1}{4}$ NW $\frac{1}{4}$  ✓  
 Section 21: W $\frac{1}{2}$ W $\frac{1}{2}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$  ✓  
 Section 22: W $\frac{1}{2}$ SW $\frac{1}{4}$  ✓  
 Section 29: NE $\frac{1}{4}$  ✓

C. Undivided 1/4 interest in and to all of the oil, gas and other minerals in and under

Township 154 North, Range 95 West  
 Section 17: SE $\frac{1}{4}$ SW $\frac{1}{4}$  ✓  
 Section 18: W $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$  ✓

D. Undivided 1/4 interest in and to all of the oil, gas and other minerals in and under

Township 154 North, Range 95 West  
 Section 22: NW $\frac{1}{4}$  ✓

E. All of the oil, gas and other minerals in and under the following described premises

McKenzie County, North Dakota  
Township 154 North, Range 96 West  
 Section 26: SW $\frac{1}{4}$ SE $\frac{1}{4}$   
 Section 35: SE $\frac{1}{4}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$

F. All of the oil, gas and other minerals in and under that may be produced from the following described property, subject however, to prior assignments of oil and gas royalty totaling 9.75%, to-wit:

McKenzie County, North Dakota  
Township 154 North, Range 96 West  
 Section 25: Lot 5 and accretions thereto  
 Section 26: SE $\frac{1}{4}$ SE $\frac{1}{4}$ , and Lot 7 and accretions thereto  
 Section 35: NE $\frac{1}{4}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ SE $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SW $\frac{1}{4}$ SW $\frac{1}{4}$   
 Section 34: W $\frac{1}{2}$ SE $\frac{1}{4}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$   
 Section 27: SW $\frac{1}{4}$ SE $\frac{1}{4}$

G. All of the oil and gas in and under that may be produced from the following described property, subject however to prior assignments of oil and gas royalty totaling 9.75%, to-wit:

Township 153 North, Range 96 West  
 Section 2: Lot 4  
 Section 3: Lots 1 and 2

H. An undivided 1/12th of the 1% royalty of all of the oil and gas in and under that may be produced from the following described lands, to-wit:

McKenzie County, North Dakota  
Township 153 North, Range 96 West  
 Section 3: S $\frac{1}{2}$ NW $\frac{1}{4}$ , Lots 3 & 4

Section 4: Lots 1, 2, 3, 4, S $\frac{1}{2}$ NW $\frac{1}{4}$ , W $\frac{1}{2}$ SW $\frac{1}{4}$ , NE $\frac{1}{4}$ SW $\frac{1}{4}$  and W $\frac{1}{2}$ SE $\frac{1}{4}$   
 Section 5: E $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , SE $\frac{1}{4}$ NE $\frac{1}{4}$   
 Section 7: SE $\frac{1}{4}$ NE $\frac{1}{4}$ , NE $\frac{1}{4}$ SE $\frac{1}{4}$   
 Section 8: NE $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$   
 Section 9: NW $\frac{1}{4}$ NE $\frac{1}{4}$ , NW $\frac{1}{4}$ NW $\frac{1}{4}$

Township 154 North, Range 96 West  
 Section 28: Lots 5, 6, 7, 8  
 Section 29: Lots 7 & 8  
 Section 32: All  
 Section 33: All  
 Section 34: SW $\frac{1}{4}$

I. 100% interest in the oil and gas in and under and that may be produced from the following described property, subject however to prior assignments of oil and gas royalty totaling 9.75%

McKenzie County, North Dakota  
Township 154 North, Range 96 West  
 Section 34: NE $\frac{1}{4}$ SE $\frac{1}{4}$  and NW $\frac{1}{4}$ NE $\frac{1}{4}$   
 Section 35: W $\frac{1}{2}$ NW $\frac{1}{4}$  and NE $\frac{1}{4}$ NW $\frac{1}{4}$   
 Section 26: SW $\frac{1}{4}$ SW $\frac{1}{4}$   
**Section 27: Lot 8 and SE $\frac{1}{4}$ SW $\frac{1}{4}$**

J. An undivided 1% royalty of all oil and gas saved and that may be produced from the following described lands, to-wit:

McKenzie County, North Dakota  
Township 152 North, Range 95 West  
 Section 6: Lot 4

McKenzie County, North Dakota  
Township 152 North, Range 96 West  
 Section 1: Lots 1, 2, 3 & 4

McKenzie County, North Dakota  
Township 153 North, Range 95 West  
 Section 19: Lots 3, & 4, NE $\frac{1}{4}$ SW $\frac{1}{4}$   
 Section 29: SE $\frac{1}{4}$   
 Section 30: Lot 1

McKenzie County, North Dakota  
Township 153 North, Range 96 West  
 Section 24: NE $\frac{1}{4}$

OFFICE OF REGISTER OF DEEDS  
 County of Williams, N. D.

I hereby certify that the within instrument was filed in this state for record the MAY 4 1981 day of May A. D. 1981 at 3:46 P. M., and was duly entered in book 280 me page 363

*Maria Jackson*, Register of Deeds



Recording Fee \$11.00

DOC NO	<b>425571</b>
COPIED	<i>As of</i>
GRANTOR	TRACT
GRANTEE	MAINTENANCE

232695



STATE OF NORTH DAKOTA } OFFICE OF  
 COUNTY OF MCKENZIE } REGISTER OF DEEDS

I hereby certify that the instrument was filed in this office for record on the 15th day of May A. D. 1981 at 1:15 P. M. and was duly recorded in Book 144 page 281

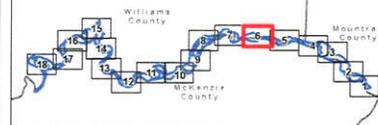
*Maria Jackson*  
 Register of Deeds  
 REC 1:15 281

Attachment 3  
Corps Segment Map Y Survey

(or what Whitetail Wave LLC would  
argue- should be considered ground  
Zero Survey)

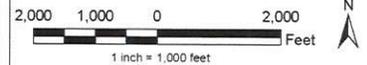


Attachment 4  
Wenck Survey OHWM Delineation Map 6 of 18



- BLM PLSS Section Boundary
- BLM PLSS Qtr Qtr Section Boundary
- River Miles
- USACE Cross Section
- Ordinary High-Water Mark (OHWM)
- Recommend Correction to Account for More Recent Aerial Information
- Recommend Correction to Account for Frequently Flooded Accretion
- Recommend Correction to Account for Active Meandering (Reliction)

Notes:  
 1. PLSS Sections and Quarter Sections: BLM National Public Land Survey System, Department of the Interior  
 2. 1951 Aerial Photographs (Source: ND Department of Mineral Resources)

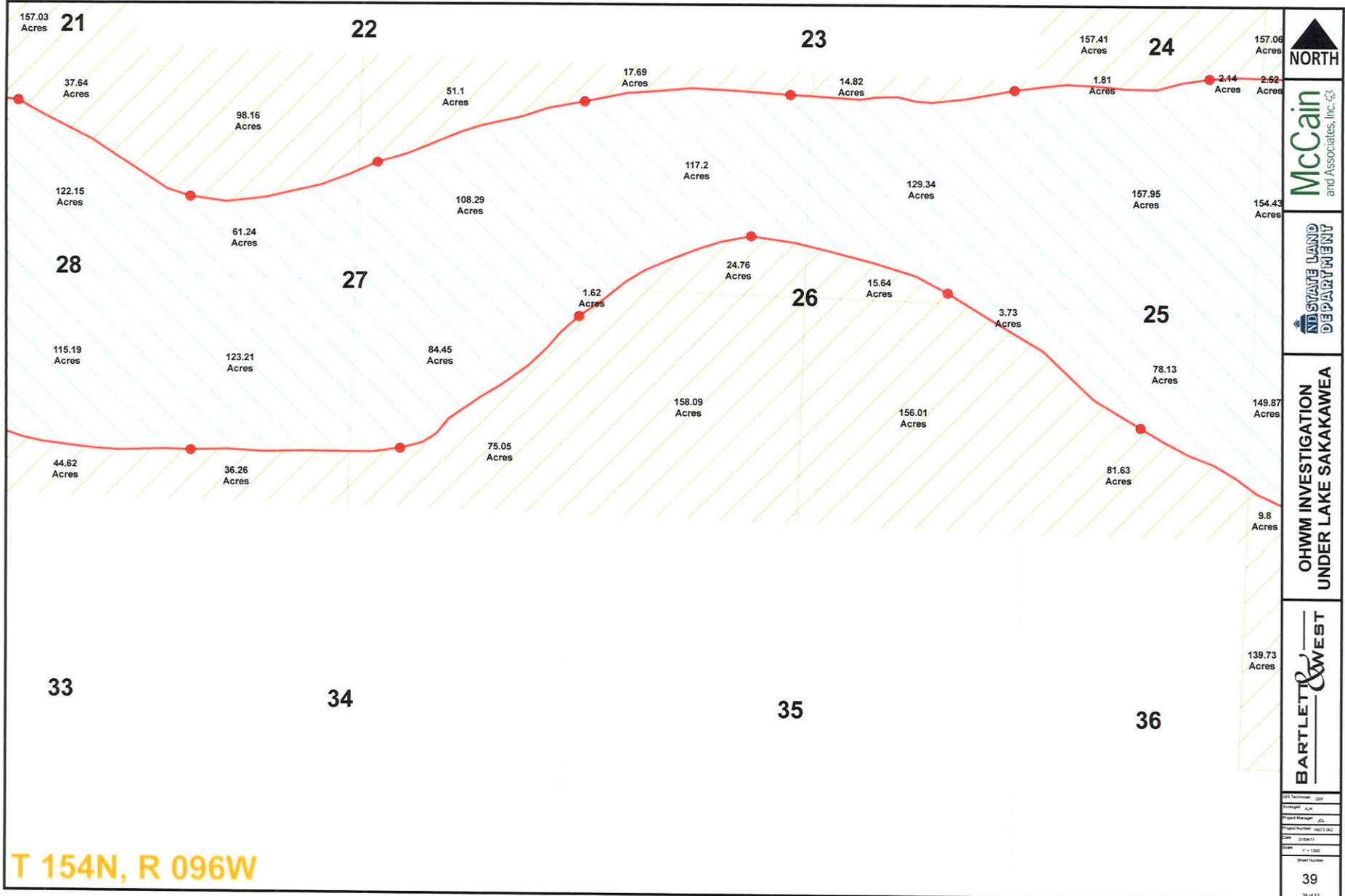


NORTH DAKOTA DEPARTMENT OF MINERAL RESOURCES  
 OHWM Delineation



MAR 2018  
 Map 6 of 18

**Attachment 5**  
**Bartlett & West Phase II Survey Plats**



**McCain**  
and Associates, Inc.

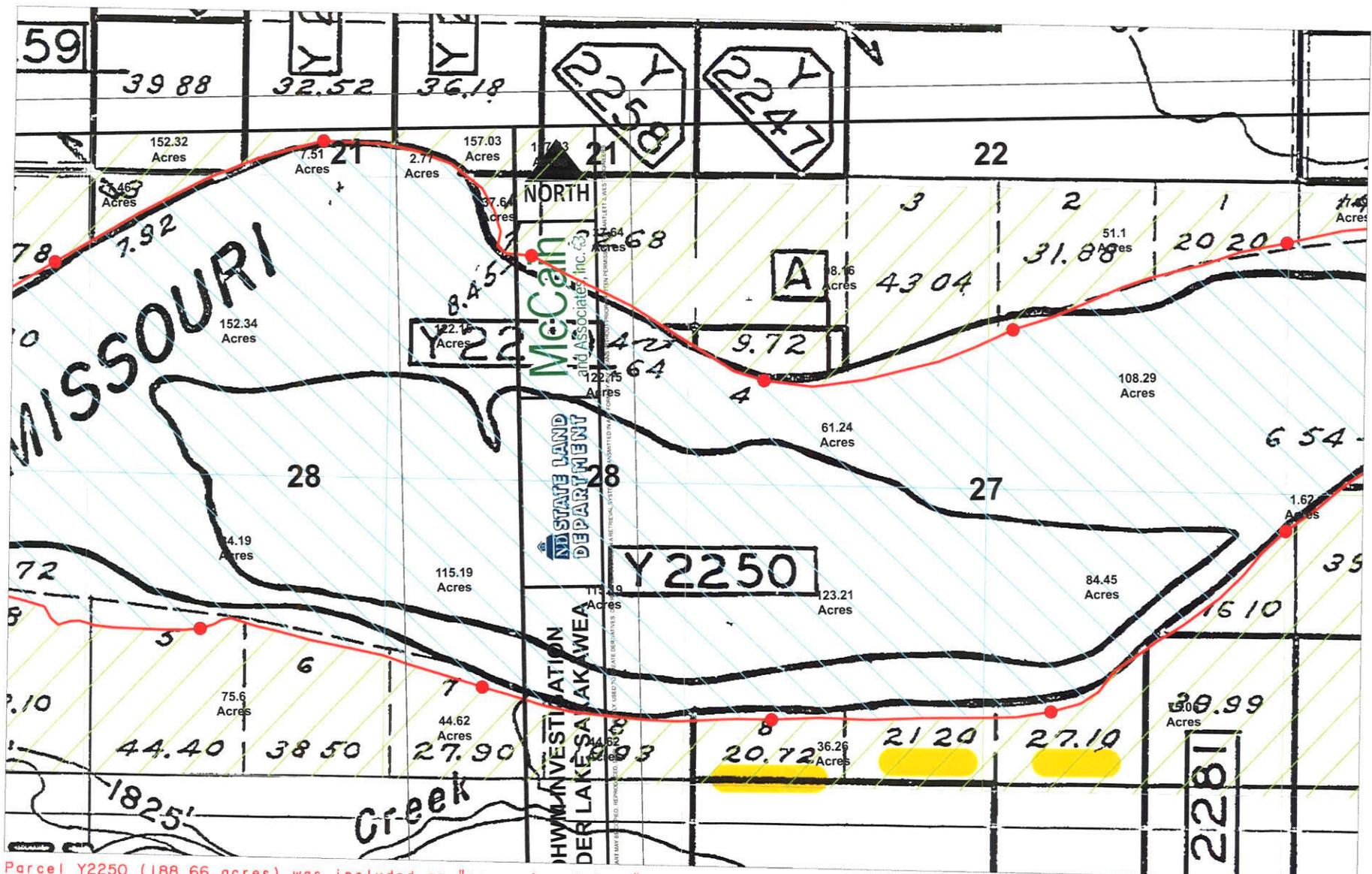
**ND STATE LAND DEPARTMENT**

**OHWM INVESTIGATION UNDER LAKE SAKAKAWEA**

**BARTLETT & WEST**

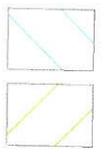
GIS Technician	JLW
Estimator	AKC
Project Manager	JLW
Print Number	10071302
Date	01/04/11
Scale	1" = 1000'
Sheet Number	39

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Parcel Y2250 (188.66 acres) was included as "sovereigned land" in Task Order #2, however Y2250 was acquired by the COE from the State.

LEGEND



- Missouri Riverbed between OHWM's as determined in ND Task Order #2.
- Land above the OHWM as determined in ND Task Order #2.



## **Attachment 6**

**Response Letter, dated March 23, 2016 from Aden L. Seidlitz, Acting State Director of the United States Department of the Interior, Montana Bureau of Land Management to Mr. Lance D. Gaebe, Commissioner of the University and School Lands, ND Dept of Trust Lands and Mr. Todd Sands, State Engineer, ND State Water Commission**



# United States Department of the Interior



BUREAU OF LAND MANAGEMENT  
Montana State Office  
5001 Southgate Drive  
Billings, Montana 59101-4669  
www.blm.gov/mt

In Reply Refer To:  
9661 (MT926)

March 23, 2016

CERTIFIED MAIL – RETURN RECEIPT REQUESTED

Mr. Lance D. Gaebe  
Commissioner of University and School Lands  
North Dakota Department of Trust Lands  
P.O. Box 5523  
Bismarck, ND 58506-5523

Mr. Todd Sando  
State Engineer  
North Dakota State Water Commission  
900 East Boulevard Ave.  
Bismarck, ND 58505-0850

Dear Messrs. Gaebe and Sando:

We are in receipt of your statement of reasons received on December 10, 2014, supporting the two letters of intent to protest the official filing of Supplemental Plats by the Branch of Cadastral Survey. The letters of intent to protest were received on August 6, 2014, from the North Dakota Department of Trust Lands and August 7, 2014, from the Office of the State Engineer (OSE).

In your statement of reasons, you assert two reasons why the Bureau of Land Management (BLM) should not officially file the Supplemental Plats, approved April 9, 2014, and May 8, 2014, representing the geographic limits of the Public Domain interests. Your reasons are:

- 1) The BLM's Supplemental Plats should utilize the Ordinary High Water Mark (OHWM) survey initiated by North Dakota in 2009 that follows the OSE's 2007 guidelines; and
- 2) The Army Corp of Engineer's (COE) Acquisition Segment Maps (Segment Maps), upon which the Supplemental Plats are based, are not an accurate reflection of the OHWM.

The State of North Dakota's (State) OHWM delineation, as depicted on Enclosure 1, claims approximately 1,140 acres of Public Domain<sup>1</sup> subsurface estate and 896 acres of Public Domain surface estate on the Supplemental Plats to be State sovereign land. In addition, the State also claims approximately 2,637 acres of fee subsurface estate and 2,881 acres of COE-acquired surface estate as State sovereign land, which are not addressed on the Supplemental Plats.

---

<sup>1</sup> For clarification, Public Domain interests in the State of North Dakota refer to land interests (surface and subsurface) where title has never left the Federal Government.

Your protest points are focused on the location of the OHWM line, depicted on the Supplemental Plats, which is the boundary between upland ownership and State riverbed title under the Equal Footing Doctrine.

### **Riverbed Title Under the Equal Footing Doctrine**

Your protest concerns riverbed title and not public trust issues. This distinction is important because it controls the source of law to be applied in defining the OHWM. A recent United States Supreme Court decision distinguishes the two in *PPL Montana, LLC v. Montana* 132 S. Ct. 1215, 1235 (2012):

*“Under accepted rules of federalism, the States retain residual power to determine the scope of the public trust over waters within their borders, while federal law determines riverbed title under the equal-footing doctrine.”*

Thus, federal law determines riverbed title under the equal footing doctrine. The following leading federal court cases provide the controlling definitions of the OHWM.

In *Howard v. Ingersoll*, 54 U.S. 381, \_\_\_ (1851), the United States Supreme Court’s ruling focused on a line impressed upon the bank by the action of water as the primary indicator of the OHWM and marking the permanent bed of the river. The court also found that the bed of a river does not encompass lands outside of the banks that are subject to periodic overflow nor does it include those lands that are viable for agriculture or grazing:

*“It neither takes in overflowed land beyond the bank, nor includes swamps or low grounds liable to be overflowed, but reclaimable for meadows or agriculture, or which, being to low for reclamation, though not always covered with water, may be used for cattle to range upon, as natural or uninclosed pasture. 54 U.S. at 415-16.”*

The concurring opinions provide more clarification and established the importance of an examination of vegetation that separates the riverbed from upland, and help provide basis for subsequent federal court case definitions.

Approximately 50 years later, the Eighth Circuit reiterated *Howard v. Ingersoll* in slightly different wording:

*“The bed of the river is that soil so usually covered by water that it is wrested from vegetation . . . and does not extend to or include that upon which grasses, shrubs, and trees grow, though covered by the great annual rises.”*

*Harrison v. Fite*, 148 F. 781, 783 (8<sup>th</sup> Cir.1906).

A more recent federal district court case addressed the OHWM of a lake but lends guidance that transitional marshlands are not enough evidence for inclusion within the OHWM:

*“At most the evidence shows that the dike stands on property that has historically served as marshland for Lake Harney periodically absorbing the lake’s high waters*

*and periodically serving as productive agricultural land for its owners. This is not enough to infer that the dike stands below the ordinary high water mark the point at which the bed of the lake ends and the fast lands begin.”*

*United States v. Cameron*, 466 F. Supp. 1099, 1114 (M.D. Fla. 1978)

And, finally, *United States v. Claridge*, 416 F. 2d 933, 934 (9<sup>th</sup> Cir.1969) references the definition in *Howard v. Ingersoll* and calls for a natural feature and further explains that the OHWM does not include the floodplain from bluff to bluff due to spring floods:

*“The ordinary high water mark of a river is a natural physical characteristic placed upon the lands by the action of the river. It is placed there, as the name implies, from the ordinary flow of the river and does not extend to the peak flow or flood stage so as to include overflow on the flood plain, nor is it confined to the lowest stages of the river flow.”*

The BLM’s Manual of Surveying Instructions, 2009 (Manual) has interpreted these leading cases on OHWM and summarized them into a contemporary definition of the OHWM for the surveyor in section 3-164:

*“For inland waters, the OHWM normally used is the line below which the water impresses on the soil by covering it for sufficient periods to deprive it of terrestrial vegetation, and the soil loses its value for agriculture, including the grazing of livestock.”*

The Manual provides guidance in section 3-167 on locating the OHWM by utilizing the vegetation examination:

*“A small pocket of an aquatic type plant growing in low places not in the riverbed is also not an indicator of the OHWM and does not indicate that the OHWM should be moved toward upland to include that pocket of aquatics. It is the most water-ward location of the terrestrial species that is determinative.”*

Rivers and OHWMs have been moving on the earth’s surface for thousands of years and remnants of those movements are evidenced on virtually every aerial photo. However, we concern ourselves with the date on which rights were established, such as date of statehood and subsequent river movements for riverbed title under the Equal Footing Doctrine and entry dates for patents. The original surveys by the General Land Office classified upland of the Public Domain for patenting and created survey plats; generating the first representation of all of the rights within a township in relationship to one another. Since you are not challenging the validity of the original surveys, in this case we concern ourselves with the location of the OHWM prior to the artificial rising of the Missouri River to form Lake Sakakawea.<sup>2</sup>

<sup>2</sup> Serving as background timeline information, the construction of Garrison Dam was authorized by the Flood Waters Control Act of 1946 and caused the artificial rising of the Missouri River to form Lake Sakakawea. Construction began in 1946 with reservoir filling initiated in December of 1953 and reaching minimum operating pool on August 7, 1955. <http://www.nyo.usace.army.mil/Media/FactSheets/FactSheetArticleView/tabid/2034/Article/487634/garrison-project-statistics.aspx>

To resolve your protest, we will address locating the line of ordinary high water, both legally and factually. It must be accepted that the OHWM along a river is an ambulatory boundary that migrates through the normal actions of accretion and erosion and has moved since rights were bounded by it. While we agree there will be some differences in location based on dates of aerial photography and dates of field work due to accretion and erosion, it appears that your OHWM guidelines do not comport with federal law and cannot be used to determine riverbed title under the Equal Footing Doctrine.

### **Discussion of State Reason No. 1**

#### **A) OSE's OHWM Delineation Guidelines of 2007**

The BLM's Branch of Cadastral Survey has reviewed the OSE's OHWM Delineation Guidelines of 2007 and finds it mostly in conformity with the federal definition except for defining grazing of livestock and certain agriculture as being below the OHWM, as outlined in the Final Technical Report for the OHWM Investigation for the Missouri River Under Lake Sakakawea which states:

*"Areas below the OHWM may have vegetation suitable for grazing but wetland vegetation capable of being grazed is not an "ordinary agricultural crop."*

*Another complicated area included the low lying hayfields. For this study, the term "field" refers to hayed or mowed areas, and does not imply that the area has been cultivated or seeded. Farming practices along the river during drier, low water periods often extended into the lower floodplain areas, closer to the water's edge. These "fields" may be cut for hay, or cultivated for a short time, but rapid colonization of wetland species on these hay fields likely occurred when the wetter period and subsequent higher water levels returned."*

The grazing statement is in direct contradiction to the *Howard v. Ingersoll* reference of *natural or uninclosed* pasture and the Manual definition of OHWM. *United States v. Cameron* references marshland that periodically absorbs the high waters and periodically serves as productive agriculture which was directly tied to the grazing of livestock and was found not enough to infer the lands were below the OHWM.

The hay field statement is in direct contradiction to the *Howard v. Ingersoll* reference to lands liable to overflow but reclaimable for meadows or agriculture. It also contradicts *Harrison v. Fite* in that the bed does not extend to land which grasses grow although covered by rises in the water. The implication is that the land can ordinarily be utilized for agriculture, even though the remnants of water in low areas of the floodplain caused by rises in the river allow for pockets of aquatic vegetation to grow periodically, which is also addressed in the aforementioned cases.

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The BLM's Branch of Cadastral Survey has reviewed the State's OHWM survey Task Order No. 2 and finds the intent to locate the OHWM of the Missouri River prior to the artificial rising of the Missouri River to form Lake Sakakawea to be correct and does not believe the State is attempting to claim the pooled lakebed of Lake Sakakawea as a navigable waterway under the Equal Footing Doctrine.

Cultivation and seeding are not prerequisites for *productive agriculture*<sup>3</sup> which would thereby exclude *natural or uninclosed*<sup>4</sup> pasture suitable for grazing or natural grass haying. Specifically the upland extends towards the river to the lowest extent of upland vegetation and not the landward extent of aquatic vegetation.

These deviations from the Federal definition of OHWM allow the State's delineation of OHWM, which is visually represented on Enclosure 2 hatched in blue and overlaid on the 1958 aerial photo, to impermissibly encompass upland with terrestrial vegetation, hay fields, and cultivated fields.

Likewise, the State's OHWM delineation, depicted on Enclosure 3 hatched in blue and overlaid onto the 1952 aerial photo, spans from *bluff to bluff*<sup>5</sup> taking in uplands temporarily overflowed by *freshets*<sup>6</sup> which is in direct contradiction to all Federal case law and moreover, the State's delineation, which does not reference utilizing the 1952 aerial photo follows the extent of water on the 1952 photo very closely. But, this photo is a representation of one of the highest recorded flows, which is not characterized as "ordinary." The date of the aerial photo, April 5, 1952, has been correlated to United States Geological Survey (USGS) flow data obtained at: [http://waterdata.usgs.gov/usa/nwis/inventory/?site\\_no=06330000&agency\\_cd=USGS](http://waterdata.usgs.gov/usa/nwis/inventory/?site_no=06330000&agency_cd=USGS). Thirty-seven years of flow data from 1928-1965 shows that only 21 days had higher flows than the aerial photo date (April 5, 1952), of which 4 days were also in 1952. Enclosure 4a is the mean daily discharges for 1952; 4b is the highest daily means from 1928-1965; 4c is a graph of the 37 year discharges.

Therefore, BLM believes the State's OHWM delineation is skewed due to the aforementioned deviations from the Federal definition of OHWM and residual flood waters from an extraordinary event onto the floodplain. The State's OHWM delineation depicts the riverbed to be three times the width of the General Land Office's originally surveyed meanders. Originally surveyed meanders are typically landward of the actual OHWM, and while it is acknowledged that OHWMs move laterally, no evidence shows why the riverbed has widened, up to triple in size, to encompass lands classified as upland in the original survey.

The sheer width of the State's OHWM delineation, as depicted on Enclosure 1, clearly shows that it ignores the *natural physical characteristic*<sup>7</sup> of the OHWM which is a *natural object*<sup>8</sup> and extends *beyond the banks*<sup>6</sup> to encompass significant portions of the floodplain. Thus, BLM's Supplemental Plats should not utilize North Dakota's 2009 OHWM survey.

## B) Chain of Title

At the meeting on July 22, 2014, in Bismarck, ND, Josh Alexander, BLM's Acting Chief Cadastral Surveyor for public lands in North Dakota, specifically asked if the State's OHWM delineation was to determine surface rights, subsurface rights, or both. The verbal response was

<sup>3</sup> *United States v. Cameron*, 466 F. Supp. 1099 (M.D. Fla. 1978)

<sup>4</sup> *Howard v. Ingersoll*, 54 U.S. 381 (1851)

<sup>5</sup> *United States v. Claridge*, 416 F. 2d 933 (9<sup>th</sup> Cir. 1969)

<sup>6</sup> *United States v. Harrell*, 926 F.2d 1036 (11<sup>th</sup> Cir. 1991)

<sup>7</sup> *United States v. Claridge*, 416 F. 2d 933 (9<sup>th</sup> Cir. 1969)

<sup>8</sup> *Howard v. Ingersoll*, 54 U.S. 381 (1851)

that it determined the boundary of State Sovereign land encompassing both surface and subsurface rights.

But, the State's delineation did not consider previous conveyances, as evidenced by chain of title research. Enclosures 5a, 5b, and 5c are the State's OHWM delineation, which is hatched in blue and overlaid onto the COE Segment maps, in which the State's delineation encompasses:

- 1) 188.66 acre island, Y2250 (Enclosure 5a)
- 2) 228 acres within Y2289 (Enclosure 5b)
- 3) 71.07 acres within Z2382 (Enclosure 5c)

These parcels were conveyed to the United States by the State as upland (see Enclosure 6 for conveyance documents). The magnitude of acquisitions by the COE clearly shows the intent was to purchase displaced uplands. The chain of title clearly shows that the State agreeably conveyed upland and islands, which is now being depicted and claimed as riverbed. An island must exist above the OHWM to be considered an island; otherwise it is a part of the bed (sandbar). At the time of the conveyance, an OHWM determination was made to facilitate the conveyance of the island and the upland. These conveyances were for upland surface only. The State's new OHWM delineation must omit these areas as they have previously been classified as upland, not below the OHWM, and are not part of surface Sovereign Lands of the State. Thus, BLM's Supplemental Plats should not utilize North Dakota's 2009 OHWM survey.

### **C) Sovereign Lands**

In its protest, the State is utilizing its delineation as a basis for claim to sovereign land and to require mineral lease and royalty payments from oil and gas operators. However, prior to viewing the delineations at <https://land.nd.gov/minerals/mineralapps/OHWM2/OHWM2Disclaimer.aspx>, there is a caveat:

*"The work completed under this contract is to delineate the ordinary high water mark (OHWM) and is not a final legal determination as to whether any specific property is "sovereign land." "*

Thus, it is unclear how much weight to give to the State's OHWM delineation even though the State's Statement of Reasons infers that we should honor it wholly. Instead, BLM's Supplemental Plats are without limitation and provide the better evidence of riverbed title.

For the foregoing reasons, the State's first protest point is denied.

## **Discussion of State Reason No. 2**

### **A) BLM Field Investigations Prior to Flooding**

The COE Segment Maps were the basis for land title acquisition by the COE for those upland lands that would be affected by the artificial rising of the Missouri River to create Lake Sakakawea. The Segment Maps depict the Missouri River OHWM and are the most

comprehensive evidence of the Missouri River OHWM just prior to the formation of Lake Sakakawea.

To determine what lands were classified as public lands, the COE engaged BLM's Branch of Cadastral Engineering (now Branch of Cadastral Survey) to execute field investigations prior to flooding. BLM surveyors were guided by Special Instructions dated October 24, 1952 (Enclosure 7). Importantly, there is no evidence that the State of North Dakota raised concerns about the Special Instructions or subsequent acquisitions.

The Special Instructions stated the following regarding the lot or legal subdivision listed:

*"Ascertain whether any or all of it is above mean high water at the present time*

*If it is found to be above water at present, determine whether any or all of it has been in existence above mean high water continuously since the original survey was made*

*Show what part of the tract has been in existence since the date of the original survey*

*If the land has been entirely washed away and has re-appeared, determine the date it was submerged and when it re-appeared*

*If accretion to a tract of public domain land has formed, show the extent of such accretion*

*If substantial accretion appears to have formed in front of riparian privately-owned lands prior to the date of entry, show the extent of such accretion and the date a substantial amount had formed in front of the original tract*

*Where changes have taken place in the river channel, determine whether the change was due to avulsive action, or to the slow and imperceptible process of reliction and accretion*

*To determine the above facts, you will study all plats, charts, maps, aerial photographs and records found that may have a bearing on the case at hand. You will determine the age of timber growing on the land and obtain such other information as is available including the interviewing of old settlers who may be familiar with the river changes at those places."*

BLM officers were operating under the BLM's Manual of Surveying Instructions, 1947 (1947 Manual), and the term "mean high water" for inland waters carries the same determination principles and conformance to law as the OHWM, as evidenced by guidelines in the 1947 Manual.

The BLM conducted extensive field investigations to determine what lands existed above the OHWM, made a determination on river movement, its effect on land title, and compiled this information in an investigative report. These reports were utilized to determine public lands above the OHWM, addressing both accretion and erosion to public lands. Those determinations

were depicted on the Segment Maps. In other words, the COE Segment maps are based on BLM field work, analysis, and standard practices. See Enclosures 8, 9, and 10 for the progression from BLM field investigation report map (8) to Segment Map (9) to Supplemental Plat (10), all of which depict the same findings from the field investigations.

## **B) North Dakota State Lands Department (SLD)'s Previous OHWM Delineation**

### 1) Land acquisition documents show that SLD participated in the COE survey process.

A conveyance document in Enclosure 6 infers that the SLD performed an OHWM determination prior to the conveyance. The last page of Enclosure 6 states:

*"The above is based on Survey Report furnished by the State School Land Department."*

The SLD Survey Report was requested by the BLM's Branch of Cadastral Survey. However, its whereabouts are unknown and remains unfurnished. But, based on the subsequent conveyance, the referenced SLD Survey Report likely made a determination that Y2250 was an island existing above the OHWM, thereby necessitating the need for purchase by the COE as uplands that would be displaced by the artificial rising of the Missouri River to create Lake Sakakawea.

Although the Final Technical Report for the OHWM Investigation for the Missouri River Under Lake Sakakawea states that the SLD was unaware of any previous OHWM determinations, we believe that the land acquisition documents establish that the SLD participated in the OHWM determinations upon which the COE segment maps are based.

### 2) Documents show that SLD participated in the condemnation process for uplands.

To further outline the SLD's involvement and conclude that the State was aware of upland acquisitions, we obtained correspondence documents (Enclosure 11) showing that SLD and COE deliberations led to a formal and friendly condemnation process, which was followed by the SLD and the COE.

Despite legislation being passed to convey State lands without mineral reservation, the condemnation process was instituted due to the reluctance of then SLD Commissioner, John O. Lyngstad. Mr. Lyngstad was reluctant to sell State lands and supported the condemnation process for fear of political repercussions of selling State land. Mr. Lyngstad relays his reluctance by predicting accusations from farmers that they would be willing to pay the State more money than was being offered by the Federal Government. It is certain that farmers would not be willing to pay for these uplands if they were not productive for agriculture indicating the lands existed as upland above the OHWM. The State's OHWM delineation incorrectly classifies these same uplands as riverbed.

Revisit Enclosure 6 showing the execution of this process whereby the COE sent appraisals for displaced state uplands asking for consideration by the Board of University and School Lands, execution by the Land Commissioner, and condemnation.

### C) Appraisals

Full appraisals were conducted for acquisition of displaced uplands to justify and provide basis for the expenditure of appropriated funds. These appraisals quantify upland area and quantify the uses of the upland, including agricultural production, timber, brush, etc. While utilized for appraisal values, these quantifications provide significant documentation with regard to the acquired displaced uplands, depicted on the COE Segment maps, existing above the OHWM. See Enclosure 12, which is the same area as Enclosure 2 showing the State's OHWM delineation encompassing brush and productive agriculture as identified by the land appraisal. The State's delineation does not follow Federal case law or OHWM definitions with the inclusion of these uplands.

For the reasons outlined above, we reject the State's assertion that the COE Segment Maps are not an accurate reflection of the OHWM. The OHWM was established by BLM-led field investigations using Special Instructions that were not disputed by the State. In fact, there is ample evidence showing that the SLD participated in the establishment of the OHWM determination. The second protest point is denied.

### Conclusion

The COE Segment Maps are firmly grounded in guidance, methodology, and contemporaneous field investigations of the land prior to the effects of flooding. These Segment Maps are the most comprehensive evidence of the OHWM prior to the artificial rising to create Lake Sakakawea. The Segment Maps were the basis for millions of dollars of appropriated funds being spent to acquire displaced uplands and were generated with determinations from in-the-field investigations by BLM, and involvement from the BLM and ND SLD, and have gone uncontested for over 60 years.

Moreover, the BLM's Branch of Cadastral Survey performed a quality check prior to incorporating them into the Supplemental Plats. The COE Segment Maps were overlaid onto aerial photography and evaluated for OHWM determination and riparian movement effects on land title. Miniscule differences were identified due to difference in dates of aerial photography compared to the dates of the field investigations and the constant movement of rivers. In these areas, deference was given to the Segment Maps due to the field-based reports and techniques and the fact that chain of land title was based upon them and were determined to have been executed in accordance with federal guidelines.

Based on the aforementioned analysis, the BLM finds the State's OHWM delineation:

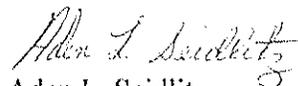
- 1) does not comply with the federal definition of the OHWM
- 2) does not honor chain of title or previous involvement with the COE
- 3) is an overreaching delineation that impairs:
  - a) the mineral rights of private owners as vested from original patents from the Federal Government
  - b) the Federal Government's acquired rights in land, and
  - c) the rights of all in the Public Domain interests in land.

Your protest to the official filing of plats of survey posted in the *Federal Register* on July 8, 2014, is hereby dismissed. The Supplemental Plats shall be officially filed in this office.

You have the right to appeal this decision to the Office of Hearings and Appeals, Office of the Secretary, U.S. Department of the Interior, Board of Land Appeals (Board), in accordance with the regulations contained in 43 CFR Part 4 and the enclosed Form 1842-1 (Enclosure 13). In taking an appeal, there must be strict compliance with the regulations. If you choose to appeal, a notice of appeal must be filed in this office within thirty (30) days of receipt of this letter for transmittal to the Board. If your notice of appeal does not include a statement of reasons, one must be filed with the Board within thirty (30) days after the notice of appeal was filed. A copy of your notice of appeal and any statement of reasons, written arguments, or briefs, must also be served upon the Office of the Solicitor, Rocky Mountain Region, 2021 Fourth Avenue N., Suite 112, Billings MT 59101. Service must be accomplished within fifteen (15) days after filing in order to be in compliance with appeal regulations.

As provided by 43 CFR Part 4, you have the right to petition the Office of Hearings and Appeals to stay implementation of the decision; however, you must show standing and present reasons for requesting a stay of the decision that address your interests and the manner by which they would be harmed. A petition for stay of a decision pending appeal shall show sufficient justification based on the following standards: (1) The relative harm to the parties if the stay is granted or denied; (2) The likelihood of the appellant's success on the merits; (3) The likelihood of immediate and irreparable harm if the stay is not granted; and (4) Whether the public interest favors granting the stay. Should you choose to file one, your stay request must accompany your notice of appeal. A notice of appeal with petition for stay must be served upon the Board, Regional Solicitor, and adverse parties at the same time such documents are served on the deciding official at this office. The person signing the notice of appeal has the responsibility of proving eligibility to represent the appellant before the Board under its regulations at 43 CFR 1.3.

Sincerely,



Aden L. Seidlitz  
Acting State Director

#### 13 Enclosures

- 1- Overall comparison of OHWM delineations in protested area
- 2- OHWM comparison overlaid onto 1958 aerial photography
- 3- OHWM comparison overlaid onto 1952 flood aerial photography
- 4- USGS flow data
- 5- State OHWM delineation overlaid onto Segment Maps
- 6- State land conveyance correspondence and execution documents
- 7- BLM Special Instructions
- 8- BLM field investigation report map
- 9- Portion of Segment Map

- 10- Portion of BLM Supplemental Plat
- 11- COE and SLD correspondence
- 12- Land appraisal map
- 13- Form 1842-1

cc: Karan Dunnigan  
Office of the Solicitor  
Billings, MT

## Attachment 7

Various copies of State correspondence  
regarding States claim to island north of  
Column 1 Tracts

ALSO

a copy of recorded Certificate as to Title of  
Island, wherein State claims ownership.

HEGRP

24 July 1951

Mr. John Lyngstad  
State Land Commissioner  
Bismarck, North Dakota

Dear Mr. Lyngstad:

Tract map tracings provided by your office covering islands in the Missouri River are herewith returned and in accordance with your verbal suggestion two copies each of multilith prints from the tracings are also inclosed for your convenience.

Attention will be given by this office to the inclusion of these islands for acquisition by the Government if they are found to be within the proposed Garrison Reservoir.

FOR THE DISTRICT ENGINEER;

Very truly yours,

5 Incl (in trip)  
Tract Maps

ROY DORY  
Chief, Real Estate Division

VL/bg

(W)

ENCLOSURE 6

JAN 1 1952

MRARC (Tracts Nos. W-2050, X-2180,  
Y-2250, Y-2289, Z-2313, Z-2331, Z-2382)

Mr. John O. Lyngstad  
State Land Commissioner  
Bismarck, North Dakota

Dear Mr. Lyngstad:

Appraisals have been completed on additional lands, reputedly owned by the State of North Dakota, needed for the Garrison Reservoir. Pertinent information concerning them is as follows:

<u>Tract No.</u>	<u>Acres</u>	<u>Appraised Value</u>
W-2050	1111.15	\$13,000.00
X-2180	521.60	3,000.00
Y-2250	188.66	950.00
Y-2289	855.44	9,500.00
Z-2313	120.00	1,200.00
Z-2331	153.64	2,600.00
Z-2382	<u>320.00</u>	<u>3,050.00</u>
Totals	3,270.49	\$33,300.00

My office may now acquire title to land for the Garrison Reservoir subject to reservation of oil and gas rights by the owners. The only restrictions that are imposed in the reservation are the subordination of the oil and gas rights to the right of the United States to flood the land for the Garrison Reservoir, compliance with Federal and State laws on water pollution, and approval by the District Engineer, Garrison District, of the type of structures and appurtenances to assure their being constructed of a material that would not create floatable debris.

An option to purchase the fee simple title to the above-listed tracts, subject to the oil and gas reservation, is inclosed in quintuple for your consideration. It will be appreciated if you will give the option your early consideration and sign and return four executed copies to my office. As previously requested by you, the option will be used as a stipulation in Court and title will be passed by judicial order rather than by deed.

Very truly yours,

R. J. B. PAGE  
Lt. Col., Corps of Engineers  
District Engineer

GSW/elk

- 3 Incls
1. Option (in quin)
  2. Tract map
  3. Self-addressed envl.

STATE OF NORTH DAKOTA  
OFFICE OF  
**State Land Department**  
UNIVERSITY AND SCHOOL LANDS  
BISMARCK, NORTH DAKOTA



January 12, 1952

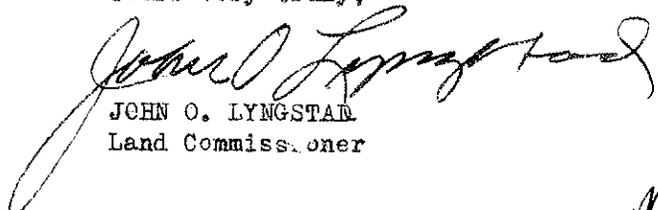
Lt. Colonel R. J. B. Page  
Corps of Engineers  
Box 300  
Ft. Lincoln  
Bismarck, North Dakota

Dear Colonel Page:

We acknowledge receipt of your letter of January 11 enclosing options to seven tracts of land which you desire to secure in connection with the Garrison Reservoir.

The options will be presented to the Board of University and School Lands at its next regular meeting which will be held on or about January 31.

Yours very truly,



JOHN O. LYGSTAD  
Land Commissioner

JOL:eg



STATE OF NORTH DAKOTA

OFFICE OF

# State Land Department

UNIVERSITY AND SCHOOL LANDS

BISMARCK, NORTH DAKOTA



1 February 1952

Lt. Col. R. J. B. Page  
District Engineer, Garrison District  
Corps of Engineers  
Attn: Real Estate Division  
Riverdale, North Dakota

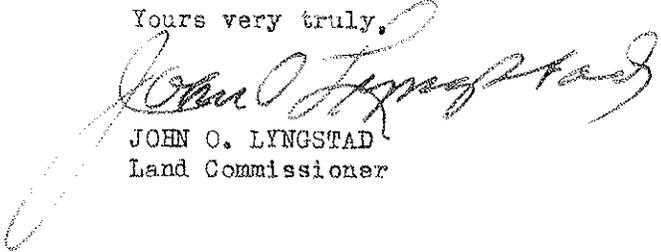
Re: MRGRC (Tracts Nos. W-2050,  
X-2180, Y-2250, Y-2289,  
Z-2313, Z-2331, Z-2382)

Dear Sir:

We are returning four copies of the options for the purchase of land sent us in your letters of January 11 and January 24, which have been approved by the Board of University and School Lands, and executed by the Land Commissioner.

Trusting you will find the same satisfactory, I am,

Yours very truly,

  
JOHN O. LYNSTAD  
Land Commissioner

JOL/cso

Enclosures (4)

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NORTH DAKOTA  
NORTHWESTERN DIVISION

FILED  
9/18/52

UNITED STATES OF AMERICA, )  
 )  
Plaintiff, )  
 )  
-vs- )  
 )  
4,183.66 Acres of Land, More or )  
Less, in Mountrail, McKenzie )  
and Williams Counties, North Dakota )  
 )  
State of North Dakota, et al )  
 )  
Defendants, )

CIVIL NO. 2606

DECLARATION  
OF  
TAKING

TO THE HONORABLE,  
THE UNITED STATES DISTRICT COURT:

I, Frank Pace, Jr., Secretary of the Army of

The United States do hereby declare that:

1. (a) The lands hereinafter described are taken under and in accordance with the Act of Congress approved February 26, 1931 (46 Stat. 1421, 40 U. S. C. Sec. 252a) and acts supplementary and amendatory thereof, and under the further authority of the Acts of Congress, approved April 27, 1888 (25 Stat. 94, 33 U. S. C. Sec. 591); March 1, 1917 (39 Stat. 948, 33 U. S. C. Sec. 701); December 22, 1944, (Public Law 534, 78th Congress, Second Session), also under the Civil Functions Appropriation Act, 1952, approved October 24, 1951 (Public Law 203, 82nd Congress), which act appropriated funds for such purposes.

(b) The public uses for which lands are taken are as follows: The said lands are necessary adequately to provide for Flood Control in the Missouri River Basin and for uses incident thereto. The said lands have been selected by me for acquisition by the United States for use in connection with the construction and establishment of the Garrison Dam and Reservoir, North Dakota, and for such other uses as may be authorized by Congress or by Executive Order.

2. Detailed descriptions of the lands being taken are set forth in Schedule "A" attached hereto, and in the part hereof, and are descriptions of the same lands described in the complaint in the above entitled cause.

3. The estate taken for said public uses is the fee simple title thereto, subject to existing easements for public roads and highways, public utilities, railroads and pipe lines and reserving, however, to the owner of the land or the owner of any interest therein, including third party lessees, their heirs, successors and assigns, all oil and gas rights therein, on or under said

described lands, with full rights of ingress and egress for exploration, development, production and removal of oil and gas, upon condition that the oil and gas rights so reserved are subordinated to the right of the United States to flood and submerge the said lands permanently or intermittently in the construction operation and maintenance of the Garrison Dam and Reservoir, and that any exploration or development of such rights shall be subject to federal or state laws with respect to pollution of waters of the reservoir, provided further that the District Engineer, Corps of Engineers, Garrison District, or his duly authorized representative shall approve in furtherance of the exploration and/or development of such reserved interests, the type of any structure and/or appurtenances thereto now existing or to be erected or constructed in connection with such exploration and/or development, said structures and/or appurtenances thereto not to be of a material determined to create floating debris.

4. Plans showing the lands taken are annexed hereto as Schedule "B" and made a part hereof.

5. The sum estimated by me as just compensation for said lands, with all buildings and improvements thereon, and all appurtenances thereof, except where specifically reserved to the owners, and including any and all interests hereby taken in said lands, is set forth in Schedule "A" herein, which sum I cause to be deposited herewith in the Registry of said Court for the use and benefit of the persons entitled thereto. I am of the opinion that the ultimate award for said lands probably will be within any limits prescribed by law as the price to be paid therefor.

IN WITNESS WHEREOF, the plaintiff, by its Secretary of the Army thereunto authorized, has caused this declaration to be signed in its name by said Frank Pace, Jr., Secretary of the Army, this the 16th day of July, A. D. 1952, in the City of Washington, District of Columbia.

(Signed) Frank Pace, Jr.  
Secretary of the Army

2606

SCHEDULE "A"

The land which is the subject matter of this Declaration of Taking aggregates 4,183.66 acres, more or less, situated in the Counties of Hountrail, McKenzie and Williams, State of North Dakota. Descriptions of the lands taken, together with the names of the purported owners thereof, and a statement of the sums estimated to be just compensation therefor, are as follows:

TRACT NO. V-1920 ✓

An island lying in the Missouri River consisting of parts of: Lot 6, Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ) of Section 35 in Township 153 North, Range 93 West of the 5th P.M., Lots 2 and 3, Northwest quarter of the Northwest quarter (NW $\frac{1}{4}$ NW $\frac{1}{4}$ ), Northeast quarter of the Northwest quarter (NE $\frac{1}{4}$ NW $\frac{1}{4}$ ), Southeast quarter of the Northwest quarter (SE $\frac{1}{4}$ NW $\frac{1}{4}$ ) of Section 4 in Township 152 North, Range 93 West of the 5th P.M., said island containing 53.88 acres, more or less and the plat thereof being on file in McKenzie County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$300.00

TRACT NO. V-2050

An island in the Missouri River lying opposite the following Sections in Hountrail County: Sections 2 and 3 in Township 153 North, Range 94 West of the 5th P.M., and Sections 27, 34 and 35 in Township 154 North, Range 94 West of the 5th P.M., and lying opposite the following Sections in McKenzie County: Section 4 in Township 153 North, Range 94 West of the 5th P.M., and Section 33 in Township 154 North, Range 94 West of the 5th P.M., said island containing 1111.15 acres, more or less, and the plat thereof being on file in McKenzie County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$13,000.00

TRACT NO. V-2065 0

Parcel "A" - An island lying in the Missouri River consisting of parts of: Lots 3, 4 and 5, Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), Southwest quarter (SW $\frac{1}{4}$ ), of Section 12, Lot 8, East half of the Southeast quarter (E $\frac{1}{2}$ SE $\frac{1}{4}$ ) of Section 11. Parcel "B" - A small island lying in the Missouri River consisting of part of the North half of the Southeast quarter (N $\frac{1}{2}$ SE $\frac{1}{4}$ ) of Section 11. All in Township 153 North, Range 94 West of the 5th P.M. Said islands containing 121.30 acres, more or less, and the plats thereof being on file in McKenzie County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$625.00

TRACT NO. X-2180

An island lying in the Missouri River consisting of parts of: Southeast quarter (SE $\frac{1}{4}$ ) of Section 25 in Township 15 $\frac{1}{2}$  North, Range 95 West, Lot 5 of Section 28, Southeast quarter (SE $\frac{1}{4}$ ), Southwest quarter (SW $\frac{1}{4}$ ) of Section 29, Southeast quarter (SE $\frac{1}{4}$ ), Southwest quarter (SW $\frac{1}{4}$ ), Lots 4, 5 and 6 of Section 30, Northwest quarter (NW $\frac{1}{4}$ ), Northeast quarter (NE $\frac{1}{4}$ ), Lot 5 of Section 31, Northwest quarter (NW $\frac{1}{4}$ ), Northeast quarter (NE $\frac{1}{4}$ ) of Section 32, Northwest quarter (NW $\frac{1}{4}$ ) of Section 33 in Township 15 $\frac{1}{2}$  North, Range 94 West of the 5th P.M. Said island containing 521.60 acres, more or less, and the plat thereof being on file in Mountrail County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$3,000.00

TRACT NO. Y-2250

An island lying in the Missouri River consisting of parts of: Lots 6, 7, and 8, Northeast quarter of the Southeast quarter (NE $\frac{1}{4}$ SE $\frac{1}{4}$ ), Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), Northwest quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ), East half of the Southwest quarter (E $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 27, Lots 6, 7 and 8, North half of the Southeast quarter (N $\frac{1}{2}$ SE $\frac{1}{4}$ ), Southeast quarter of the Southeast quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ ), North half of the Southwest quarter (N $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 28. All in Township 15 $\frac{1}{2}$  North, Range 96 West of the 5th P.M. Said island containing 188.66 acres, more or less, and the plat thereof being on file in McKenzie County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$950.00

TRACT NO. Y-2289

Lots 1, 2 and 3, West half (W $\frac{1}{2}$ ), Southwest quarter of the Northeast quarter (SW $\frac{1}{4}$ NE $\frac{1}{4}$ ), West half of the Southeast quarter (W $\frac{1}{2}$ SE $\frac{1}{4}$ ), Southeast quarter of the Southeast quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ ), of Section 36 in Township 15 $\frac{1}{2}$  North, Range 96 West of the 5th P.M., plus accretions, situate in McKenzie County, North Dakota, containing 855.44 acres, more or less.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$9,500.00

TRACT NO. Z-2313

Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), Last half of the Southwest quarter (L $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 16 in Township 15 $\frac{1}{2}$  North, Range 97 West of the 5th P.M., situate in Williams County, North Dakota, containing 120.00 acres, more or less.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$1,200.00

TRACT NO. Z-2320

That portion of an island lying in the Missouri River consisting of Parts of: Lots 4 and 3, North half of the Southeast quarter (N $\frac{1}{2}$ SE $\frac{1}{4}$ ) Southeast quarter of the Northeast quarter (SE $\frac{1}{4}$ NE $\frac{1}{4}$ ) of Section 30, Southwest quarter of the Northwest quarter (SW $\frac{1}{4}$ NW $\frac{1}{4}$ ), Northwest quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 29 in Township 15 $\frac{1}{2}$  North, Range 97 West of the 5th P.M. Said island containing 76.80 acres, more or less, and the plat thereof being on file in Williams County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: 500.00

TRACT NO. Z-2324

That portion of an island lying in the Missouri River consisting of parts of: West half of the Northeast quarter ( $\frac{1}{2}$ NE $\frac{1}{4}$ ), East half of the Northwest quarter ( $\frac{1}{2}$ NW $\frac{1}{4}$ ), Southwest quarter of the Northwest quarter ( $\frac{1}{4}$ SW $\frac{1}{4}$ ), North half of the Southwest quarter ( $\frac{1}{2}$ SW $\frac{1}{4}$ ), Southwest quarter of the Southwest quarter ( $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 36 in Township 154 North, Range 98 West of the 5th P.M. Said island containing 91.20 acres, more or less, and the plat thereof being on file in Williams County, North Dakota.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$500.00

TRACT NO. Z-2331

Lots 3, 4 and 6, the Southeast quarter of the Southeast quarter ( $\frac{1}{4}$ SE $\frac{1}{4}$ SE $\frac{1}{4}$ ) and those portions of the Northeast quarter of the Southeast quarter ( $\frac{1}{4}$ NE $\frac{1}{4}$ SE $\frac{1}{4}$ ) and of the Southwest quarter of the Southeast quarter ( $\frac{1}{4}$ SW $\frac{1}{4}$ SE $\frac{1}{4}$ ) lying south and east of the Missouri River, all in Section 36, Township 154 North, Range 98 West of the 5th P.M., situate in McKenzie County, North Dakota, containing 153.64 acres, more or less.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$2,600.00

TRACT NO. Z-2361

Parcel "A" - That portion of the South half of the Northwest quarter ( $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 27 lying South and East of the Missouri River.  
Parcel "B" - That portion of the Northwest quarter of the Northeast quarter ( $\frac{1}{4}$ NW $\frac{1}{4}$ NE $\frac{1}{4}$ ) of Section 27 lying South and East of the Missouri River. All in Township 154 North, Range 97 West of the 5th P.M., situate in McKenzie County, North Dakota, containing 33.39 acres, more or less.

Name of Purported Owners: O. F. Warren and Thomas  
Address of Purported Owners: W. Leach  
619 South Warren, Tulsa,  
Oklahoma  
Estimated Compensation: \$300.00

TRACT NO. Z-2382

Northeast quarter (NE $\frac{1}{4}$ ), Northwest quarter (NW $\frac{1}{4}$ ) of Section 36 in Township 154 North, Range 97 West of the 5th P.M., situate in McKenzie County, North Dakota, containing 320.00 acres, more or less.

Name of Purported Owner: State of North Dakota  
Address of Purported Owner: Bismarck, North Dakota  
Estimated Compensation: \$3,200.00

TRACT NO. AA-2403

West half of the Southwest quarter ( $\frac{1}{2}$ SW $\frac{1}{4}$ ), Lots 5 and 6 of Section 2 in Township 153 North, Range 98 West of the 5th P.M., plus accretions, situate in Williams County, North Dakota, containing 176.60 acres, more or less.

Name of Purported Owner: Clinton French  
Address of Purported Owner: Epping, North Dakota  
Estimated Compensation: \$10,000.00

TRACT NO. AA-2417

Southeast quarter of the Southeast quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ ) of Section 19, South half of the Southwest quarter (S $\frac{1}{2}$ SW $\frac{1}{4}$ ), Northeast quarter of the Southwest quarter (NE $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 20 in Township 153 North, Range 98 West of the 5th P.M., situate in Williams County, North Dakota, containing 160.00 acres, more or less.

Name of Purported Owners: E. C. Lundstrom and Frank C. Lundstrom  
Address of Purported Owners: Williston, North Dakota  
Estimated Compensation: \$6,300.00

TRACT NO. AA-2418

Northwest quarter (NW $\frac{1}{4}$ ), Northwest quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ) of Section 29 in Township 153 North, Range 98 West of the 5th P.M., situate in Williams County, North Dakota, containing 200.00 acres, more or less.

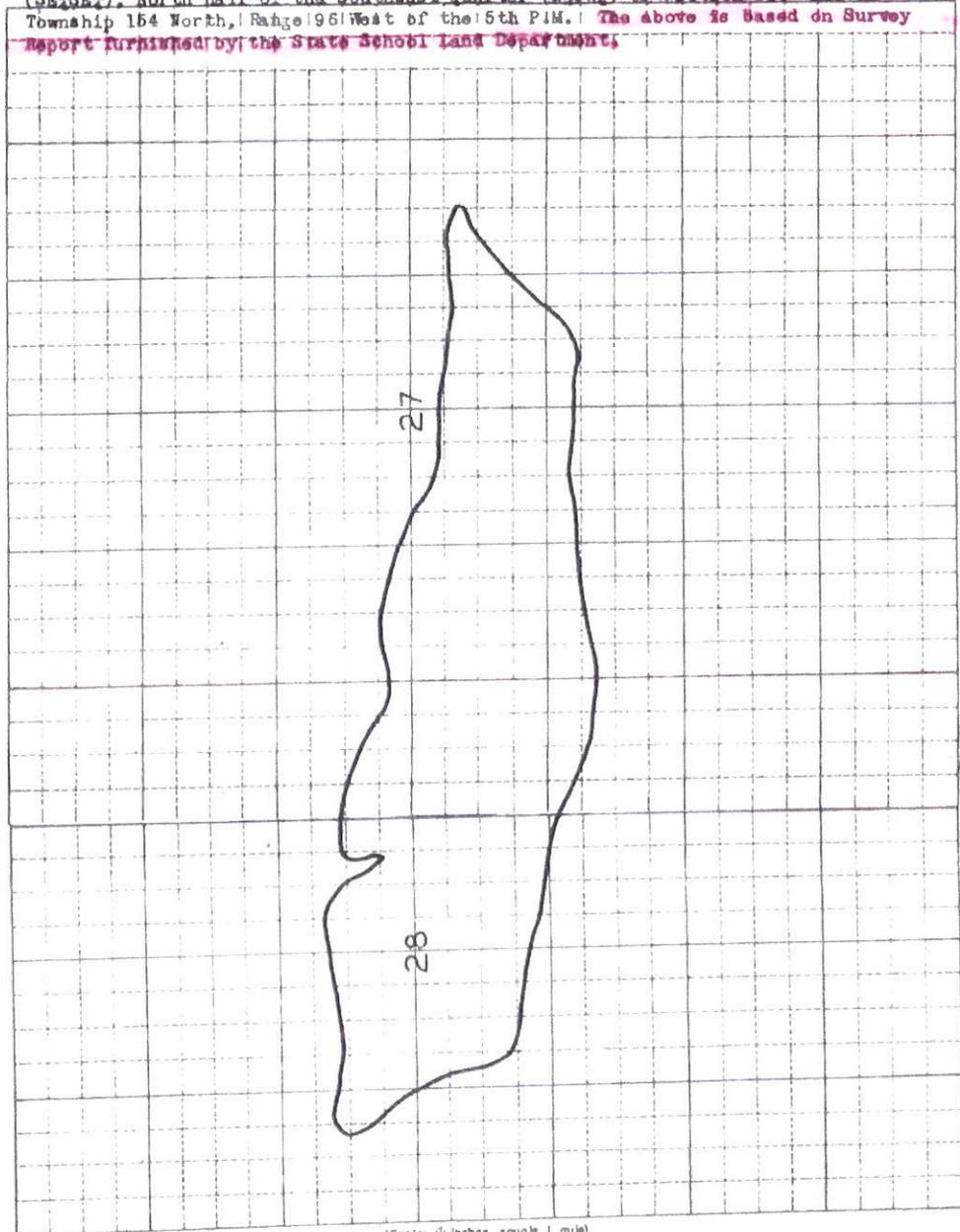
Name of Purported Owner: Asa R. Backock  
Address of Purported Owner: Williston, North Dakota  
Estimated Compensation: \$10,600.00

The gross sum estimated to be just compensation for the lands hereby taken is . . . . . \$62,575.00.

TRACT MAP (WITH GRID)

Project symbol No. Garrison Dam - Reservoir Area Tract No. Y-2250  
 Name of owner State of North Dakota  
 Field work by Mary Jackson Date 24 August 1951  
 Description of tract State - North Dakota County - McKenzie

An island lying in the Missouri River consisting of parts of: Lots 6, 7 and 8, Northeast quarter of the Southeast quarter (NE $\frac{1}{4}$ SE $\frac{1}{4}$ ), Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ), Northwest quarter of the Southwest quarter (NW $\frac{1}{4}$ SW $\frac{1}{4}$ ), East half of the Southwest quarter (E $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 27, Lots 6, 7 and 8, North half of the Southeast quarter (N $\frac{1}{2}$ SE $\frac{1}{4}$ ), Southeast quarter of the Southeast quarter (SE $\frac{1}{4}$ SE $\frac{1}{4}$ ), North half of the Southwest quarter (N $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 28. All in Township 164 North, Range 96 West of the 15th P.M. The above is based on Survey Report furnished by the State School Land Department.



(Scale: 1/4 inch equals 1 mile)

CLASSES OF LAND

- Crop land
- Pasture land
- Forest land
- \*

Grades of each class of land must be shown on the map proper.  
 \* Name of any other class of land involved.

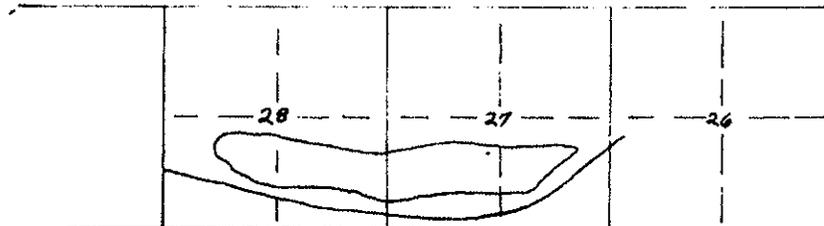
I certify that this is an accurate map of Tract Y-2250 based on G.L.O. Reels & Aerial Survey (1949), which shows this tract to contain 188.68 acres, more or less.  
 Name Mary Jackson  
 Title Draftsman  
 Date 24 August 1951  
 Indicate whether map is based on General Land Office records, aerial survey, deed description or actual survey.

Document No.  
1 3 4 9 3 9

Treaty Map  
STATE OF NORTH DAKOTA BY COMMISSIONER TO THE PUBLIC

22m131

MAP SHOWING Area of an island in the Missouri River lying in Sections 27 and 28 in Township 154 North and Range 96 West of P.M. in McKenzie County, North Dakota.  
Garrison Dam- Reservoir Area.



Part of Section	Township	Range	Acres	
-NE $\frac{1}{4}$ SE $\frac{1}{4}$	27	154	96	3.40
Lot 6	27	154	96	14.62
S $\frac{1}{4}$ SE $\frac{1}{4}$	27	154	96	9.12
Lot 7	27	154	96	14.62
SE $\frac{1}{4}$ SW $\frac{1}{4}$	27	154	96	15.13
Lot 8	27	154	96	17.67
NW $\frac{1}{4}$ SW $\frac{1}{4}$	27	154	96	16.42
SW $\frac{1}{4}$ S $\frac{1}{4}$	27	154	96	1.37
Lot 8	28	154	96	13.11
SESE $\frac{1}{4}$	28	154	96	3.08
NE $\frac{1}{4}$ SE $\frac{1}{4}$	28	154	96	14.96
Lot 7	28	154	96	9.92
NW $\frac{1}{4}$ SE $\frac{1}{4}$	28	154	96	20.29
Lot 6	28	154	96	9.35
NE $\frac{1}{4}$ SW $\frac{1}{4}$	28	154	96	21.20
N $\frac{1}{4}$ SW $\frac{1}{4}$	28	154	96	2.51

Treaty to contain

188.66 Acres More or Less.

The above is based on General Land Office records and Aerial Survey made in 1949.

Certified Correct

L. S. Ekstrand

L. S. Ekstrand

County Engineer, McKenzie County, North Dakota

CERTIFICATE AS TO TITLE OF ISLAND  
LYING IN MISSOURI RIVER

State of North Dakota )  
County of Burleigh )

I, the undersigned, John O. Lyngstad, the duly appointed, qualified and acting Commissioner of University and School Lands of the State of North Dakota, hereby certify that the island lying in the Missouri River, consisting of a part of Sections 27 and 28 in Township 154 North, of Range 96 West, and of the area of approximately 188.66 acres, and shown on the annexed plat, certified by L. S. Ekstrand, County Surveyor of McKenzie County, North Dakota, in July, 1951, with the accompanying data as to the area of said island, is the property of the State of North Dakota and a part of the permanent school fund of said state by virtue of the law as stated in the case of State vs. Loy, 7 N.D. 122, 20 NW 2d 668, and Section 15-0719 of the North Dakota Revised Code of 1943.

Dated this 10th day of August, 1951.

(SEAL)

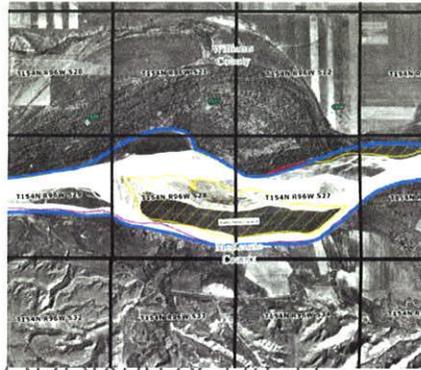
John O. Lyngstad  
Commissioner of University and School  
Lands of the State of North Dakota.

Filed for record on the 15th day of Aug. A. D. 1951 at 4:05 o'clock P. M. and was recorded in Book 22 of Miscel on Page 131.

E. F. Raddatz, Register of Deeds.

## Attachment 8

Partial Copy of Wenck Survey Power Points



## ORDINARY HIGH WATER MARK OF THE MISSOURI RIVER BED



April 17, 2018

## PROJECT SCOPE AND PURPOSE

- OHWM analysis of historic Missouri River bed under what is now Lake Sakakawea.
  - Initiated by State Legislation for reviewing the delineation of state-owned land.
  - Presumptive determination is the US Army Corps of Engineers (USACE) survey.
- Goal** – Determine if clear and convincing evidence is present that the USACE survey does not accurately represent the OHWM of the historic Missouri riverbed per state law.

## OHWM DEFINITION

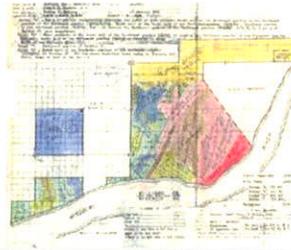
Based on State case law:

The OHWM is the point at which the presence of action of the water is so continuous as to destroy the value of the land for agricultural purposes, including hay lands.

Page 7

## DATA COMPILATION

- State provided data – digital copies of aerial photography, USACE survey, and topography.
- USACE – historical records (appraisal documents) at Riverdale office, cross sections and details from Omaha office.
- USGS – flow records.
- Research case law.



Page 11

## LEGAL RESEARCH – State Case Law

- Existing law focuses on delineating the OHWM of current waterbodies.
- Aerial photographs can provide evidence of the change in land characteristic.
- ACCRETIONS: to be sovereign, accretions must be from natural causes and on the bank of the river above the OHWM.
- Lack of cropping history or hay harvest that is more than intermittent frequency.
- Soil types or classifications that are unusable for any productive purpose.
- Vertical changes in elevation coupled with a change from wetland to terrestrial vegetation.

Page 12

## LEGAL RESEARCH

### CLEAR & CONVINCING STANDARD

- 61-33.1-03(1) directs that the presumed OHWM is the Army Corps survey completed for surface rights acquisition and supplemental plats created by the branch of cadstral survey of the BLM.
- 61-33.1-03(3) – the review must determine whether clear and convincing evidence establishes that a portion of the Corps survey does not reasonably reflect the OHWM of the historical Missouri riverbed channel under state law.

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## LEGAL RESEARCH

### CLEAR & CONVINCING STANDARD (continued)

- Clear & convincing evidence – the evidence must be such that the trier of fact is reasonably satisfied with the facts the evidence tends to prove as to be led to a firm belief or conviction. *Zundel v. Zundel*, 278 N.W.2d 123, 130 (N.D. 1979).
- The “clear & convincing evidence” requires less evidence than that required to meet the standard of “beyond a reasonable doubt.” *Id.*

Page 14

## DATA ANALYSIS

- Analyze Corps survey data with river flow data, hydraulic model, geo-referenced aerial photography, topography, and identify discrepancies.
- Document areas where clear and convincing evidence exists based on OHWM definition and legal interpretation.

Page 15

## DATA PROCESSING

- Geo-referencing aerial photography.
- Geo-referencing improvements of the USACE survey.
- Modeling river elevations for frequent flood events (USGS flow data and USACE cross sections).



Page 16

## DELINEATION METHODOLOGY

- Topographic information with flow levels from modeling.
- Aerial photo interpretation.
- Appraisal documents.



Page 19

## OVERALL RESULTS

(from River Mile 1482 to 1553.5).

USACE OHWM	16,687 acres
Project OHWM	27,089 acres
Total increase in OHWM	10,402 acres
Total increase in OHWM	162%

**From:** LaRae Thomas  
**To:** [Kadmas, Bethany R.](#)  
**Subject:** Case No 26584 - Ordinary High Water Mark - Wenck Survey  
**Date:** Tuesday, June 19, 2018 10:19:53 PM  
**Attachments:** [High Water Mark Ltr - Donna.pdf](#)  
[High Water Mark Ltr - Ginney.pdf](#)  
[High Water Mark Ltr - Kay.pdf](#)  
[High Water Mark Ltr - Bill.pdf](#)  
[Wenck Map 9.pdf](#)

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**CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

TO: ND Department of Mineral Resources

Although the Wenck Survey appears to have utilized more resources that provided better data than the earlier survey, we believe mineral owners are still losing more minerals than necessary.

My cousin visited the Corps office in Riverdale, North Dakota, but was not able to find a "final" appraisal regarding the purchase of land from my family for the Garrison Diversion Project of which my family retained the mineral interests under. Currently, a portion of my family's minerals interests fall under the mineral dispute due to the ordinary high water mark.

I find it disheartening that due to the oil activity over the past few years, the State decided that it needs to determine the high water mark now, after the river bottoms have been flooded for 50+ years due to the Garrison Diversion Project. The high water mark should have been determined at the time the Corps did its original survey so that any discrepancies could have been visually resolved at that time, along with input from the then landowner. I am of the opinion that the Corps original survey should be considered to be the ordinary high water mark survey.

Attached in PDF format are letters from four of my family members. These letters are firsthand accounts of how my father used the river bottom land for his career of ranching and that there was not flooding issues that disrupted my father's yearly ranching operation on the bottom lands.

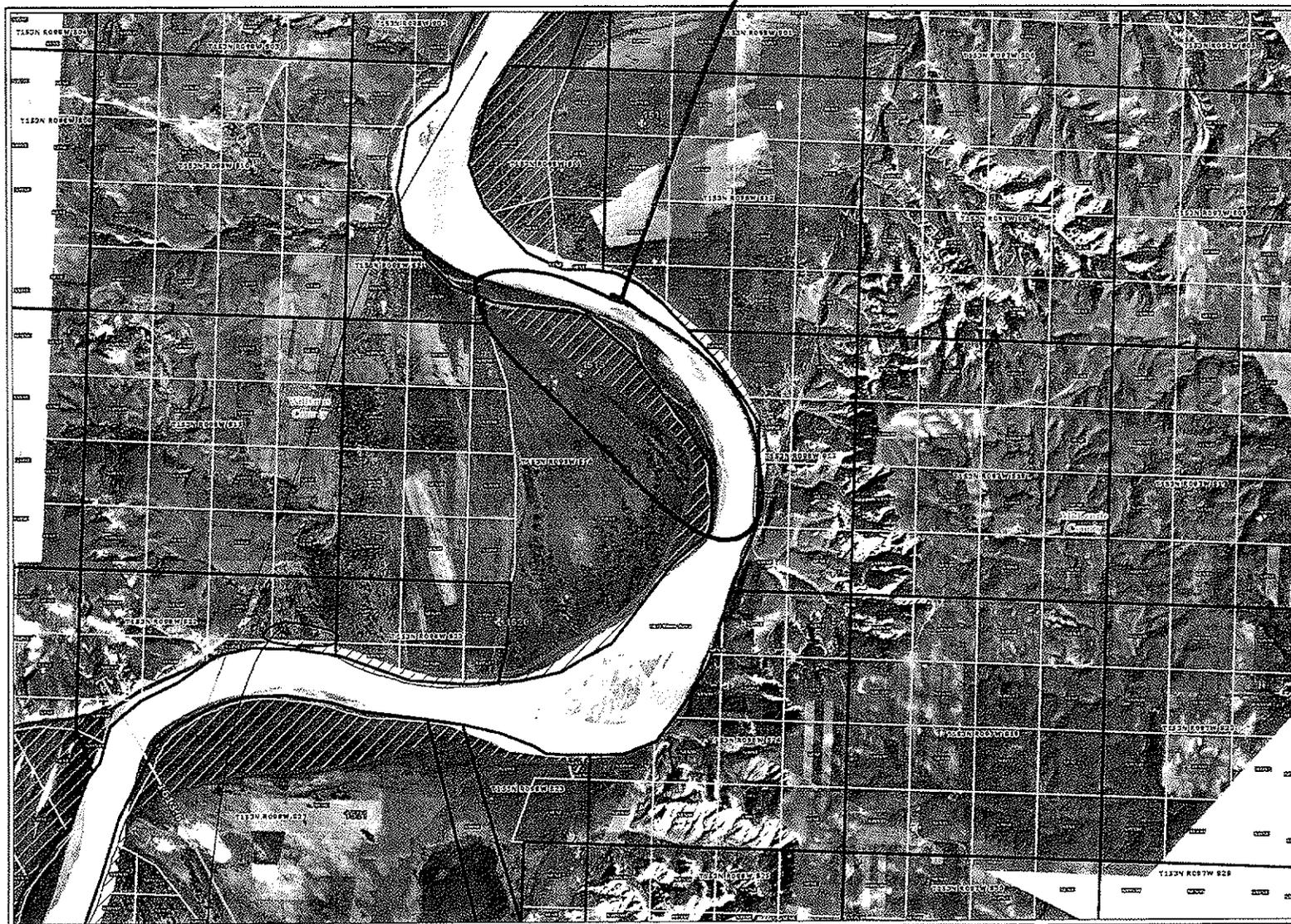
Thank you for allowing written comments, as well as oral testimony, on this matter.

LaRae A. Thomas

(Minerals in dispute located in Truax Township, Williams County, ND.)

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA  
DATE 6-26-18 CASE NO. 26584  
Introduced By Josh Swanson  
Exhibit 1  
Identified By Josh Swanson

map date 09-16-1951



**Legend:**

- BLM PLSS Section Boundary
- BLM PLSS Qtr Ctr Section Boundary
- River Miles
- USACE Cross Section
- Ordinary High-Water Mark (OHWM)
- Recommend Correction to Account for More Recent Aerial Information
- Recommend Correction to Account for Frequently Flooded Accretion
- Recommend Correction to Account for Active Meandering (Reliction)

**Notes:**

1. PLSS Sections and Quarter Sections: BLM National Public Land Survey System, Department of the Interior
2. 1951 Aerial Photographs (Source: ND Department of Natural Resources)

**Scale:** 1 inch = 1,000 feet

**Inset Map:** Shows the location of the map area within Western and Mountain Counties, North Dakota.

NORTH DAKOTA DEPARTMENT OF MINERAL RESOURCES

OHWM Delineation



MAR 2018

Map 9 of 18

NENE 22-153-08

DATE: June 18, 2018  
TO: Department of Mineral Resources – ND Industrial Commission  
FROM: Donna R. Sneva – eye witness testimony

In discussion with my family, I am in disagreement with the Wenck Survey covering lands referred to as The Bottom Land, in Truax Township, Williams County, North Dakota, specifically Map 9 of the Wenck Survey.

My father had an alfalfa field located in Section 23, Township 153 North, Range 98 West. The south end of this field had a cut bank which was adjacent to the river. This bank was approximately ten feet or more and the field did not flood.

My siblings and I walked the trees which consisted of cotton wood trees, willow trees, and brush for the hunters in our family, wherein you would come across several clearings of lush grass throughout.

I have no recollection from my childhood of The Bottom Land ever flooding, except in 1961 due to the Garrison Diversion Project.

Our father utilized The Bottom Land every single year until the flooding for the Garrison Diversion Project for farming, haying, and grazing. The Wenck Survey for The Bottom Land contradicts what actually happened. The Bottom Land was productive every year and was the main source of my father's ranching operation.

I, as well as my family, disagree with the Wenck Survey Table 2a as it pertains to the following:

153N098W14NENE  
153N098W22NENE  
153N098W23SENE  
153N098W23SWNE  
153N098W23SWNW

I would ask that the Wenck Survey be reexamined as their survey lists lands as "flooded land", however, that did not occur during my father's use of The Bottom Land prior to the Garrison Diversion Project.

Donna R. Sneva  
1202 – 1<sup>st</sup> Avenue East  
Williston, ND 58801

DATE: June 19, 2018  
TO: Department of Mineral Resources – ND Industrial Commission  
FROM: Virginia D. Rindahl – eye witness testimony

I am in disagreement with the Wenck Survey covering lands referred to as The Bottom Land, in Truax Township, Williams County, North Dakota, specifically Map 9 of the Wenck Survey. I was raised in this area along with my siblings and can attest first hand that The Bottom Land was the main source of my dad's ranching operation. The Bottom Land was productive every single year up until the flooding for the Garrison Diversion Project. My dad, Jay V. Thomas, hayed an alfalfa field located in the Section 22 and 23, Township 153 North, Range 98 West. The field went to the river's edge where there was a ledge of approximately 10 feet or more of a drop down to the river. During my years growing up, this land was always utilized.

My dad had grain fields which were farmed every year. There were hay meadows adjacent to the willows, which were cut every year for cow feed.

After all the crops were in and the hay put up, the cattle grazed all the land out to the river's edge up and down all the accretion land.

The Wenck Survey is suggesting the high water mark represented in blue on Map 9 contains more acreage than the original Corps survey represented by the black line. This difference per the Wenck Survey is 121.5 acres. These acres were useable every year until the Garrison Diversion Project flooding started. What allows this large variation from the original Corps survey?

The Wenck Survey is also suggesting that the high water mark is different from the original Corps survey by 6.2 acres as stated in "Table 2a" as 153N098W22NENE with a net change of 6.8 acres. This is land was where our father's alfalfa field was located and at the south end of the field there was a high bank.

My siblings and I question why this large variation from the original Corps survey? I can personally attest, as well as my sisters, to the fact that this all of this land was useable as my dad utilized it every year of his ranching career up until the Garrison Diversion Project flooding.

Virginia D. Rindahl  
24444 Longhorn Trail  
Ramah, CO 80832

DATE: June 19, 2018  
TO: Department of Mineral Resources – ND Industrial Commission  
FROM: Carol Kay Moen – eye witness testimony

I have had some discussions with my family members regarding the recent Wenck High Water Mark Survey. In review of certain items in the Wenck Survey, I do not understand why on Map 9 of the Wenck Survey that the willows bordering the north and east side of the land (herein referred to as The Bottom Land) are listed as flooded lands. My family lived and worked The Bottom Land. I am very familiar with this land as I grew up there. Around 1941 my father began his ranching career utilizing The Bottom Land. My father raised feed grains of barley and oats every year. He cut alfalfa for hay every year, sometimes two cuttings per year. The south end of this alfalfa field went to the edge of a river bank where it was an approximate ten foot drop, if not more. This field was identified by the Corps survey as AA2405 and as AA2411. Per the Wenck Survey Table 2a it is described as follows:

153N098W22NENE  
153N098W23SENW  
153N098W23SWNE  
153N098W23SWNW

Every year our father hayed the grass meadows for feed for his cows.

Once the crops were harvested and the hay removed, my father's cattle were released into The Bottom Land to graze the hay meadows, including in and around the willow trees where a lot of fine grass grew.

During my childhood, my sisters, Virginia D. Rindahl and Donna R. Sneva, and I rode horseback all over The Bottom Land and were never forbidden from any area due to flooding.

Our father was able to use The Bottom Land every single year for farming, haying, and grazing from approximately 1941 up until the Garrison Diversion Project flooding which occurred in 1961. The Bottom Land was productive every year and was the main source of my father's ranching operation. As time and money allowed, my father cleared brush and trees for fields to expand his ranching operation.

I, as well as my siblings, question the Wenck Survey. The Wenck Survey is suggesting that the high water mark is as represented by a blue line on Map 9,

containing more acreage than the original Corps survey represented by the black line pertaining to land identified as Tracts Nos. AA-2410 and AA-2467B. This difference is approximately 121.5 acres. These acres were useable every year until the Garrison Diversion Project flooding.

The Wenck Survey is also suggesting that the high water mark is different from the original Corps survey by 6.2 acres as stated in "Table 2a" as 153N098W22NENE with a net change of 6.8 acres. This is land was where our father's alfalfa field was located and at the south end of the field there was a high bank where it was approximately a 10 foot drop down to the river.

What allows this large variation from the original Corps survey? I can personally attest to the fact that this all of this land was useable as my father utilized it every year of his ranching career up until the Garrison Diversion Project flooding.

I would ask that the Wenck Survey be reexamined as their survey lists lands as "flooded land" when in fact my father used all these Bottom Lands every year for his ranching operation prior to the Garrison Diversion Project flooding.

Carol Kay Moen  
5427 – 134th Avenue NW  
Williston, ND 58801

DATE: June 19, 2018

TO: Department of Mineral Resources – ND Industrial Commission

FROM: LETTER OF WILLIAM K. THOMAS CONCERNING THE WENCK STUDY  
AND THE TAKING OF MINERALS BY THE STATE OF NORTH DAKOTA

1. The Final Order of Decree, Civil Case Number 3157, recorded in Williams County, North Dakota as Document Number 286118 on March 20, 1958 identifies Tracts Nos. AA-2410 and AA-2467B as "unsurveyed accretion in front of Lot 7, Section 11; unsurveyed accretion in front of lots 2, 3, and 7, Section 14; and unsurveyed accretion in front of Lots 2 and 3, Section 23, all in Township 153 North, Range 98 West of the 5<sup>th</sup> P.M. containing 531.20 acres, more or less".
2. The Wenck report, in Table 2a, identifies 153N098W14NENE, total acres 535.1, USACE Survey below OHWM 3.7 acres – 535.1 minus 3.7 equals 531.40 acres. I contend the land described in paragraphs 1 and 2 are the same lands.
3. According to the Wenck report 2.0 Ordinary High Water Mark Definition, Subsection 2.1 b, "Subsection 3 of section 61-33-01 and section 47-06-05, which provide all accretions are presumed to be above the ordinary high water mark and are not sovereign land."
4. In visiting with my cousins Virginia Rindahl and Carol Kay Moen, who lived and worked in these lands commonly referred to as The Bottoms, no portion of these lands were frequently flooded, certainly not as regularly as the Wenck report suggests. Their father, Jay V. Thomas, had hayfields and small grain fields in the Bottoms and used it as his winter pastureland. He was in the process of clearing more land of brush, trees, and willows to expand his fields and had purchased a tracked crawler tractor {bulldozer} to enhance his efforts.
5. Richard Hanson, whose Grandmother, Laura King, had homesteaded in a portion of sections 11 and 14, told of haying a portion of the bottoms when he was a teenager. The flooding in the Bottoms that Richard said he remembered was caused by excessive rainfall or infrequent ice jams. The Kings lived in the Bottoms for a time, but also had a homestead on Long Creek several miles away and only cut hay there after they moved to their other homestead.
6. The vegetation in the Bottoms, along with hayfields and croplands, also contained many species of trees, some of which were logged by my grandfather O. A. Bjella in the 1930s. My cousins also remembered there were wild grapes growing there,

and I remember the plums that grew wild there; my father and I used to fish off the bank above the river. Richard Hanson recalled rose bushes growing there, too.

7. This accreted land, the Bottoms, was not all crop and hayfields, but given time there would have been much more of it cultivated – it was a process hampered by limited time and resources. The Wenck report suggests taking nearly one-fourth of the mineral acres – 121.5 more than the Corps. Survey – as sovereign lands. Losing this highly productive land to the Garrison project had a very adverse effect on the land owners but at least their minerals were reserved to them, until now. We can't go back and look at the riverbank to see exactly what kind of riverbank and vegetation was there in 1958 so I ask that the presumption mentioned in paragraph 3 above be honored. Based on eyewitness reports of people that lived there and worked there I contend the Wenck report is wrong.

William K. Thomas  
1906 – 4<sup>th</sup> Avenue East  
Williston, ND 58801



493  
286118

IN THE UNITED STATES DISTRICT COURT  
FOR THE DISTRICT OF NORTH DAKOTA  
NORTHWESTERN DIVISION

FILED  
MAR 12 1958  
Della I. Holt, Clerk

UNITED STATES OF AMERICA,

CIVIL NO. 3197

Plaintiff,

-VS-

6,223.08 Acres of Land, More or Less,  
in McKenzie, Mountrail and Williams  
Counties, North Dakota; Carl Froholm,  
et al., and Unknown Owners,

Defendants.)

FINAL ORDER OF CONDEMNATION

(Tracts Nos. AA-2410 and AA-2467B,  
BB-2520, Parcels "A", "B" and "C",  
and BB-2520D)

It appearing to the Court in the above-entitled action that the Plaintiff herein, the United States of America, has deposited in the Registry of this Court for the use of the persons entitled thereto the amount of the award for the taking of the lands and premises hereinafter described by the Plaintiff herein, in accordance with the terms of the Judgments of this Court entered on February 3, 1958, and March 6, 1958;

IT IS HEREBY ORDERED AND ADJUDGED that the tracts of land hereinafter described be, and they are, hereby condemned for the uses and purposes which may be necessary or desirable in connection with the Garrison Dam and Reservoir Project, and for such other uses and purposes as may be authorized by Congress or by executive order; and

IT IS FURTHER ORDERED AND ADJUDGED that the United States of America is now the owner of the lands described herein, and the estate taken is the fee simple title thereto, subject to existing easements for public roads and highways, public utilities, railroads and pipelines, and reserving, however, to the owners of the land or the owners of any interest therein, including third party lessees, their heirs, successors and assigns, all oil and gas rights therein, on or under said lands, with full rights of ingress and egress for exploration, development, production and removal of oil and gas; upon condition that the oil and gas rights so reserved are subordinated to the right of the United States to flood and submerge said lands permanently or intermittently in the construc-

0,223.00 Acres of Land, More or Less,  
in McKenzie, Mountrail and Williams  
Counties, North Dakota; Carl Froholm,  
et al., and Unknown Owners,

Defendants. }

FINAL ORDER OF CONDEMNATION

(Tracts Nos. AA-2410 and AA-2467B,  
BB-2520, Parcels "A", "B" and "C",  
and BB-2520D)

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IT IS FURTHER ORDERED AND ADJUDGED that the United States of America is now the owner of the lands described herein, and the estate taken is the fee simple title thereto, subject to existing easements for public roads and highways, public utilities, railroads and pipelines, and reserving, however, to the owners of the land or the owners of any interest therein, including third party lessees, their heirs, successors and assigns, all oil and gas rights therein, on or under said lands, with full rights of ingress and egress for exploration, development, production and removal of oil and gas; upon condition that the oil and gas rights so reserved are subordinated to the right of the United States to flood and submerge said lands permanently or intermittently in the construction, operation and maintenance of the Garrison Dam and Reservoir, and that any exploration or development of such rights shall be subject to federal or state laws with respect to pollution of waters of the reservoir; provided further that the District Engineer, Corps of Engineers, Garrison District, or his duly

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authorized representative shall approve in furtherance of the exploration and/or development of such reserved interests, the type of any structure and/or appurtenances thereto now existing or to be erected or constructed in connection with such exploration and/or development, said structures and/or appurtenances thereto not to be of a material determined to create floatable debris.

The lands referred to in the foregoing order of condemnation are situated in Williams County, North Dakota, and are more specifically described as follows:

TRACTS NOS. AA-2410 and AA-2467B - Unsurveyed accretion in front of Lot 7, Section 11; unsurveyed accretion in front of Lots 2, 3, 6 and 7, Section 14; and unsurveyed accretion in front of Lots 2 and 3, Section 23; all in Township 153 North, Range 98 West of the 5th P.M., containing 531.20 acres, more or less.

TRACT NO. BB-2520 - Parcel A: Unsurveyed accretion in front of Lot 1, Section 22; unsurveyed accretion in front of Lots 3 and 4, Section 23; unsurveyed accretion in front of Lot 1, Section 27; all in Township 153 North, Range 99 West of the 5th P.M., containing 60.80 acres, more or less.

Parcel B: Unsurveyed accretion in front of Lot 2, Section 26, Township 153 North, Range 99 West of the 5th P.M., containing 11.60 acres, more or less (1.90 acres of this parcel as described in the Complaint herein having been dismissed from the action by Court Order entered March 6, 1958).

Parcel C: Unsurveyed accretion in front of Lots 2, 3, 4 and 7, Section 25; unsurveyed accretion in front of Lot 4, Section 24; all in Township 153 North, Range 99 West of the 5th P.M., containing 89.60 acres, more or less.

Tracts Nos. BB-2515 and BB-2520D were described as one parcel of land in the Complaint in this proceeding, and thereafter Tract No. BB-2515 was dismissed from this action by Court Order entered March 6, 1958, leaving only the land described as Tract No. BB-2520D, which is described as follows:

TRACT NO. BB-2520D - Lots 2, 3 and 6, that portion of the Southwest quarter of the Northeast quarter (SW $\frac{1}{4}$ NE $\frac{1}{4}$ ) which lies north of the Missouri River and that portion of the Northwest quarter of the Northeast quarter (NW $\frac{1}{4}$ NE $\frac{1}{4}$ ) which lies south and west of the right bank of the most easterly abandoned channel of the Missouri River, in Section 36, Township 153 North, Range 99 West of the 5th P.M. Also those portions of the Southeast quarter of the Southwest quarter (SE $\frac{1}{4}$ SW $\frac{1}{4}$ ) and of the Southwest quarter of the Southeast quarter (SW $\frac{1}{4}$ SE $\frac{1}{4}$ ) which lie south and west of the right bank of the most easterly abandoned channel of said Missouri River, in Section 25, Township and Range aforesaid. Also that portion of the West half of the Southwest quarter (W $\frac{1}{2}$ SW $\frac{1}{4}$ ) of Section 25, Township and Range aforesaid, which is bounded and described as follows: Beginning at the intersection of the south boundary line of said

in Williams County, North Dakota, and are more specifically described as follows:

TRACTS NOS. AA-2410 and AA-2467B - Unsurveyed accretion in front of Lot 7, Section 11; unsurveyed accretion in front of Lots 2, 3, 6 and 7, Section 14; and unsurveyed accretion in front of Lots 2 and 3, Section 23; all in Township 153 North, Range 98 West of the 5th P.M., containing 531.20 acres, more or less.

TRACT NO. BB-2520 - Parcel A: Unsurveyed accretion in front of Lot 1, Section 22; unsurveyed accretion in front of Lots 3 and 4, Section 23; unsurveyed accretion in front of Lot 1, Section 27; all in Township 153 North, Range 99 West of the 5th P.M., containing 60.80 acres, more or less.

Parcel B: Unsurveyed accretion in front of Lot 2, Section 26, Township 153 North, Range 99 West of the 5th P.M., containing 11.60 acres, more or less (1.90 acres of this parcel as described in the Complaint herein having been dismissed from the action by Court Order entered March 6, 1958).

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Tracts Nos. BB-2515 and BB-2520D were described as one parcel of land in the Complaint in this proceeding, and thereafter Tract No. BB-2515 was dismissed from this action by Court Order entered March 6, 1958, leaving only the land described as Tract No. BB-2520D, which is described as follows:

TRACT NO. BB-2520D - Lots 2, 3 and 6, that portion of the Southwest quarter of the Northeast quarter ( $\frac{SW}{4}\frac{NE}{4}$ ) which lies north of the Missouri River and that portion of the Northwest quarter of the Northeast quarter ( $\frac{NW}{4}\frac{NE}{4}$ ) which lies south and west of the right bank of the most easterly abandoned channel of the Missouri River, in Section 36, Township 153 North, Range 99 West of the 5th P.M. Also those portions of the Southeast quarter of the Southwest quarter ( $\frac{SE}{4}\frac{SW}{4}$ ) and of the Southwest quarter of the Southeast quarter ( $\frac{SW}{4}\frac{SE}{4}$ ) which lie south and west of the right bank of the most easterly abandoned channel of said Missouri River, in Section 25, Township and Range aforesaid. Also that portion of the West half of the Southwest quarter ( $\frac{W}{2}\frac{SW}{4}$ ) of Section 25, Township and Range aforesaid, which is bounded and described as follows: Beginning at the intersection of the south boundary line of said Section 25 and the west sixteenth line thereof, thence west along said boundary line a distance of 247.5 feet, more or less, to the former right bank of the Missouri River as the same traversed said Section 25 in the year 1896, according to the official plat of the public land survey, thence northwesterly along the meandered line of said former right river bank a distance of 2000 feet, more or less, to the southwesterly bank of the lake known as Jesse Lake, thence southeasterly along said lake bank a distance of 1400 feet,

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more or less, to a point thereon which is intersected by the west sixteenth line of said Section 25, thence south along said sixteenth line a distance of 1150 feet, more or less, to the point of beginning, containing 217.12 acres, more or less.

Dated this 12th day of March, 1958.

GEORGE S. REGISTER  
Judge, United States District Court

**United States District Court**  
FOR THE  
District of North Dakota

UNITED STATES OF AMERICA  
DISTRICT OF NORTH DAKOTA

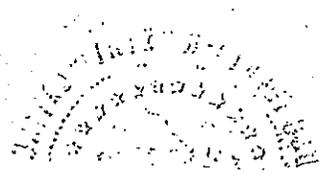
ss:

k

I, Della I. Holt, Clerk of the United States District Court for the

District of North Dakota, do hereby certify that I have carefully compared the foregoing copy with the original thereof which is in my possession as such Clerk and that such copy is a

correct transcript from such original. **Final Order of Condemnation in the matter of United States of America, Plaintiff, vs. 6,223.08 Acres of Land, More or Less, in McKenzie, Mountrail and Williams Counties, North Dakota; Carl Froholm, et al., and Unknown Owners, Defendants, as to Tracts Nos. AA-2410 and AA-2467B, BB-2520, Parcels "A", "B" and "C", and BB-2520D) Civil No. 3157.**



# United States District Court

FOR THE  
District of North Dakota

UNITED STATES OF AMERICA  
DISTRICT OF NORTH DAKOTA

ss:

k

I, Della I. Holt, Clerk of the United States District Court for the District of North Dakota, do hereby certify that I have carefully compared the foregoing copy with the original thereof which is in my possession as such Clerk and that such copy is a correct transcript from such original. **Final Order of Condemnation in the matter of United States of America, Plaintiff, vs. 6,223.08 Acres of Land, More or Less, in McKenzie, Mountrail and Williams Counties, North Dakota; Carl Froholm, et al., and Unknown Owners, Defendants, as to Tracts Nos. AA-2410 and AA-2467B, BB-2520, Parcels "A", "B" and "C", and BB-2520D) Civil No. 3157.**



IN TESTIMONY WHEREOF I have hereunto set my hand and affixed the seal of said Court, at Bismarck, in said District, this 12th day of March, A. D. 19 58

Della I. Holt, Clerk  
By Anne Franseul, Deputy

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DOC. NO.	286118
COPIED	C.N.
GRANTOR	
GRANTEE	
COMPARED	
TRACT	
MARGINED	

Recording Fee \$2.00

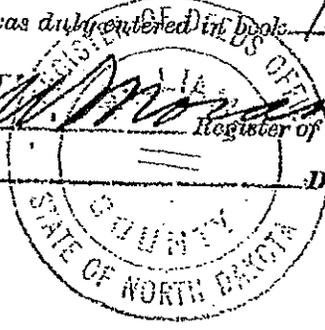
TRANSFER FEE \$ .25

*Ken Pingle*  
*Minot*

OFFICE OF REGISTER OF DEEDS } ss.  
County of Williams, N. D.

I hereby certify that the within instrument  
was filed in this state for record the 20  
day of Mar A. D. 1958 at 4:10 o'clock  
P.M., and was duly entered in book 130 Dub  
page 493

*R.M. [Signature]*  
Register of Deeds  
Deputy

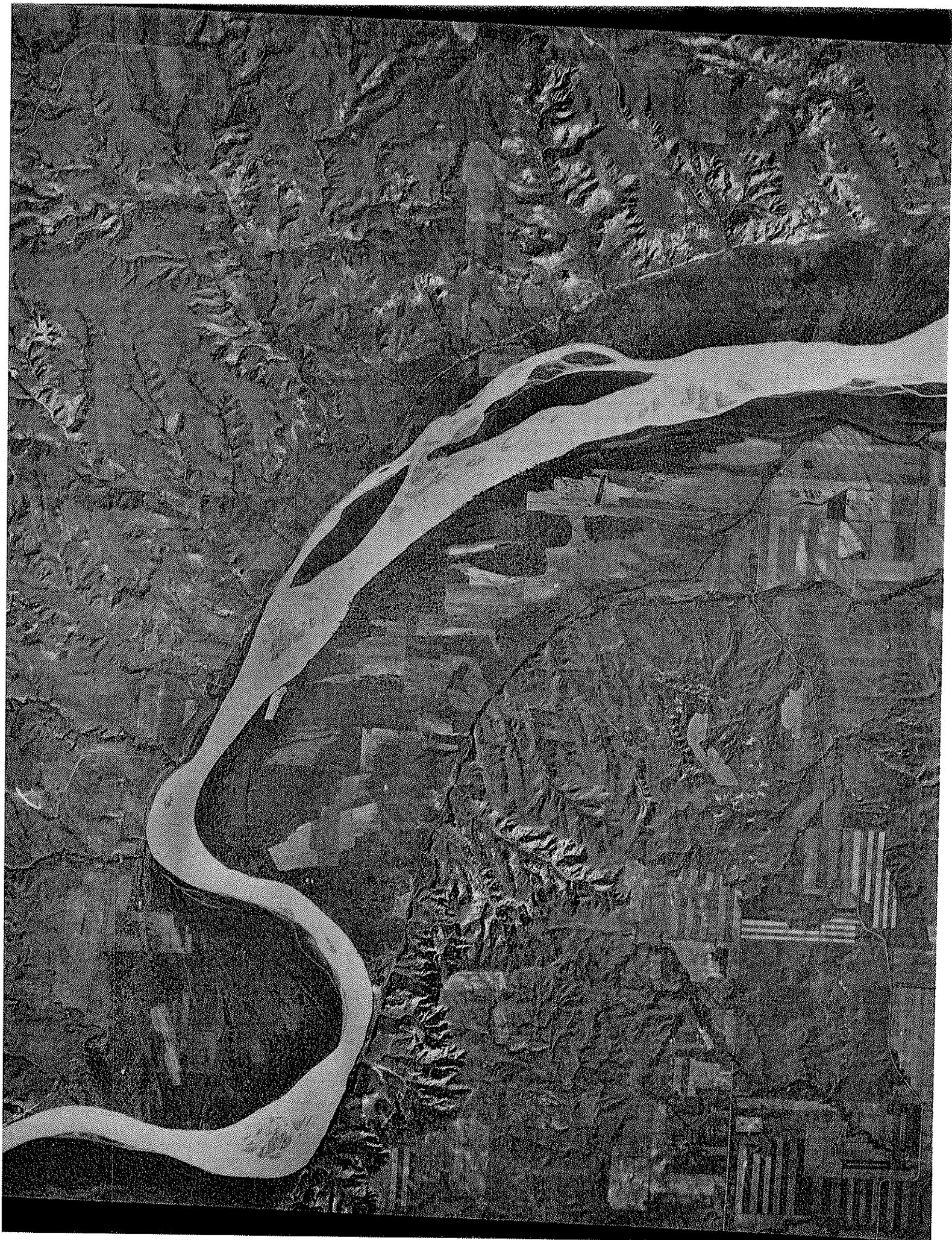


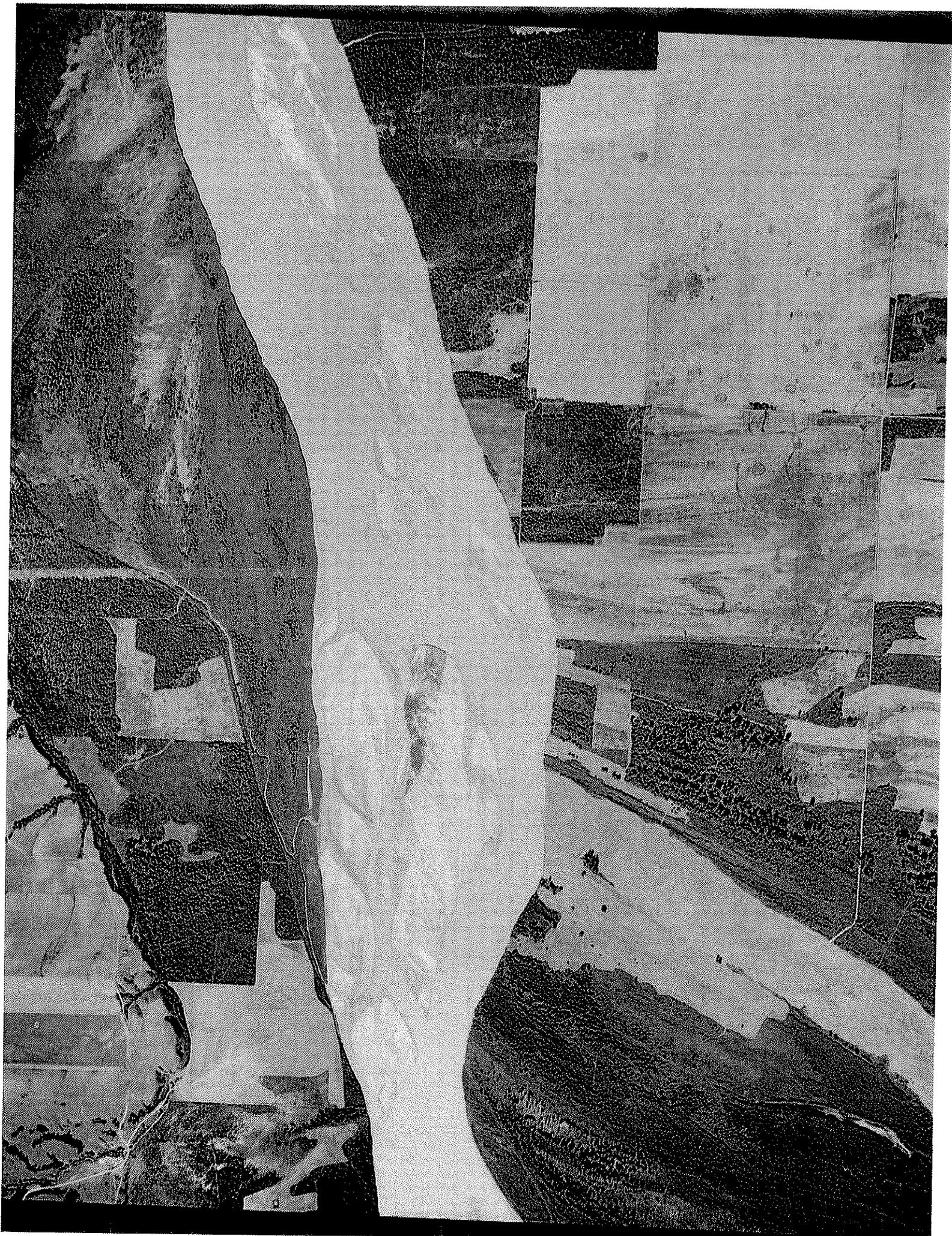
Delinquent Taxes paid, and transfer entered  
this 20 day of March 1958

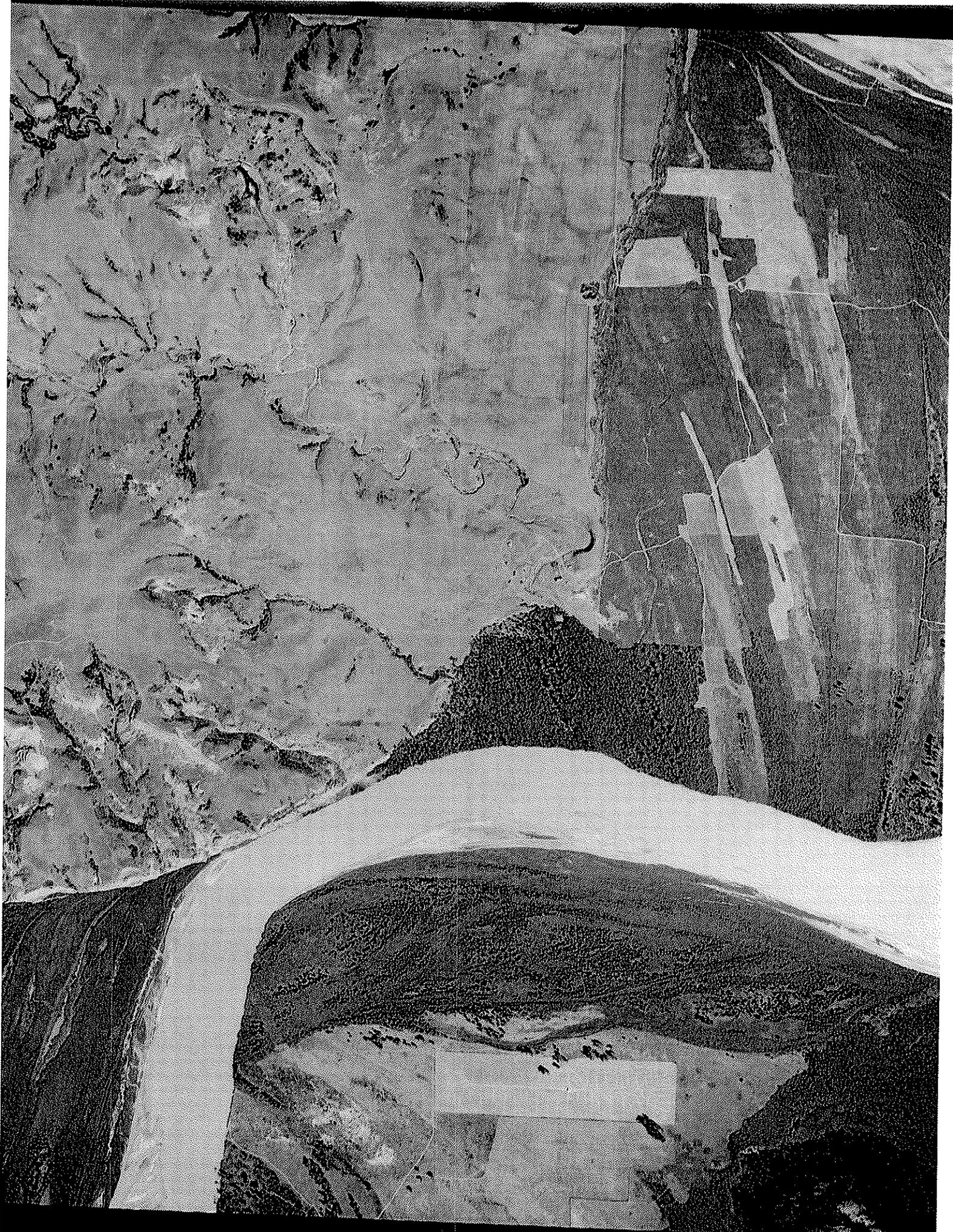
*J. E. [Signature]*  
(Auditor of Williams Co., N.D.)  
Deputy *E. [Signature]*

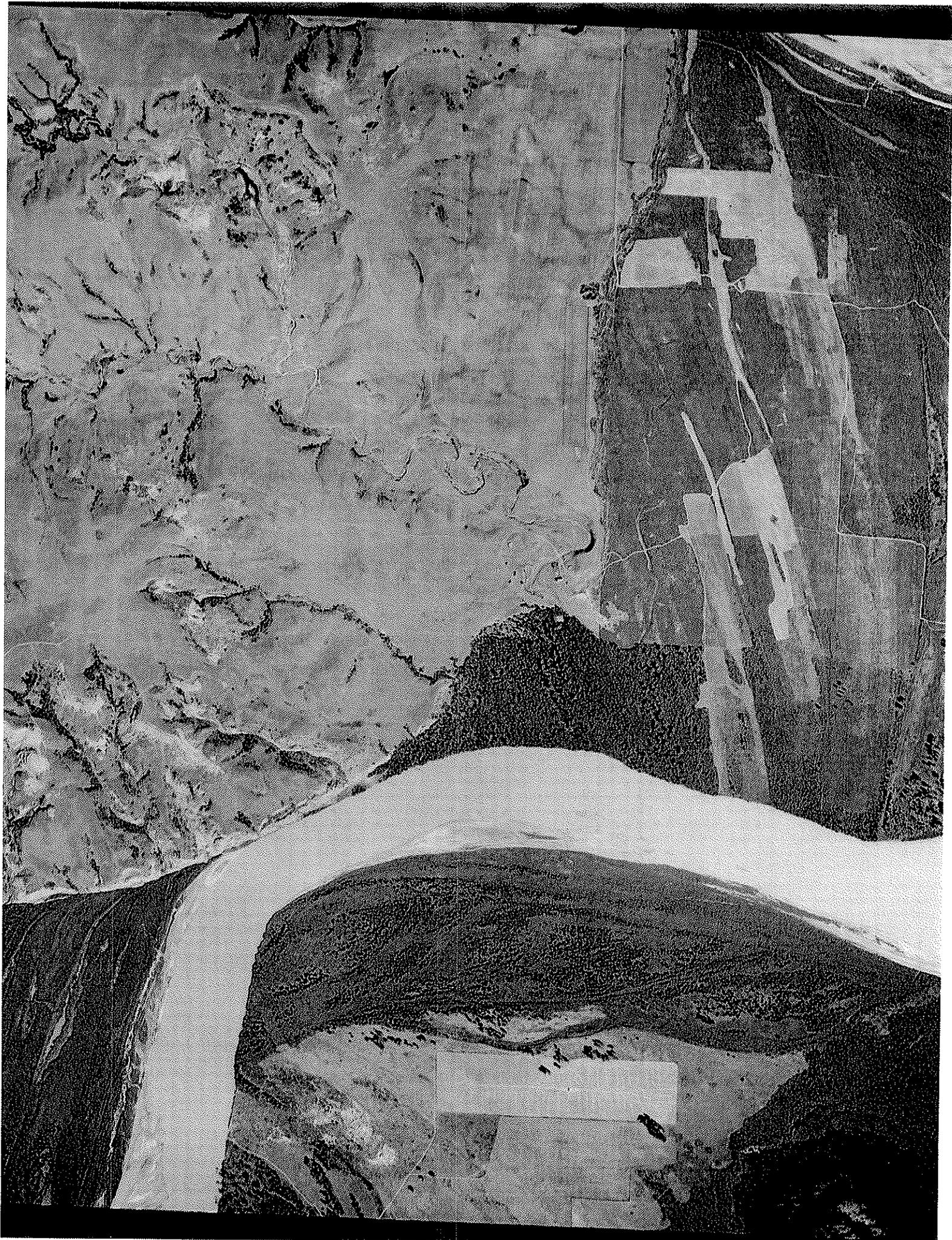
















**From:** Joshua A. Swanson  
**To:** [Kadmas, Bethany R.](mailto:Kadmas.Bethany.R)  
**Subject:** Swanson comments Wenck Report  
**Date:** Tuesday, June 26, 2018 10:24:25 AM

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**CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Bethany,

Please find attached a copy of my testimony from this morning's hearing. I have several oil and gas leases for the Jay Thomas Family that I'll send you later today. I mistakenly omitted those from what I gave you at the hearing. Any questions please let me know. Thanks,

Josh

Sent from my iPhone

Begin forwarded message:

**From:** "Joshua A. Swanson" <[jswanson@vogellaw.com](mailto:jswanson@vogellaw.com)>  
**Date:** June 25, 2018 at 10:58:01 PM CDT  
**To:** Joshua Swanson <[joshua.a.swanson@gmail.com](mailto:joshua.a.swanson@gmail.com)>  
**Subject:** Automatic reply: JAS comments Wenck Report

*I will be out of the office for a hearing the afternoon of Monday June 25 and Tuesday June 26. I will be checking my e-mail periodically and responding when able. If this is an emergency, please contact my assistant, Karen Haugen, at 701.237.6983. Thanks, and have a great day!*

*Josh*

This message has been scanned for malware by Websense. [www.websense.com](http://www.websense.com)

**From:** Joshua A. Swanson  
**To:** [Kadmas, Bethany R.](#)  
**Subject:** Swanson Testimony WenckReport.docx  
**Date:** Tuesday, June 26, 2018 10:26:29 AM  
**Attachments:** [WenckReport.docx](#)  
[ATT00001.txt](#)

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\*\*\*\*\* CAUTION: This email originated from an outside source. Do not click links or open attachments unless you know they are safe. \*\*\*\*\*

Sorry, I don't think I sent this with my last email.

Josh

This message has been scanned for malware by Websense. [www.websense.com](http://www.websense.com)

## Joshua Swanson Comments on Wenck Survey June 26, 2018

\*\* introduction – who I'm representing: Wilkinsons, EEE Minerals, Ed Lynch, Suzanne Vohs, Zoe Koeller, Cynthia Brunk and Patrick Mendenhall, Greenstar Resources Operating, and the Jay Thomas Family Trust, which includes LaRae Thomas, Donna Sneva, Virginia Rindahl, Carol Kay Moen, and William Thomas.

\*\* Introduce exhibits for Thomas family – aerial maps verifying the Thomas's claims that the property was used for agricultural purposes before Garrison Dam, condemnation order from US District Court, and segment map from Corps of Engineers identifying the Property in the condemnation order that was acquired by the federal government for the Garrison project, and oil and gas leases.

\*\* thank Wenck for their work, we can appreciate the work they have done while still calling into question parts of the report – particularly when certain parts open the report and its adoption to constitutional jeopardy.

\*\* Where the Wenck report follows the Segment Maps used by the USACE to acquire property for the Garrison project, the Wenck report stands pat against constitutional infirmity and challenge.

\*\* Respectfully, however, there is a flaw in the Wenck Report. If unaddressed, this flaw invites litigation, and there will be litigation. **There is a constitutional defect in the report.**

\*\* Despite the clear and unambiguous decision from the North Dakota Supreme Court in the Wilkinson case, the report sanctions the unconstitutional taking of 10,402 mineral acres – acres that were reserved in private mineral owners when the United States acquired the property in question for the Garrison project in the 1950s.

\*\* This includes mineral acres belonging to the Thomas family that were reserved in them through a condemnation order issued by the United States District Court for the District of North Dakota in 1958 – an Order that the Wenck report cannot modify with its declaration that based on more current aerial information, now somehow belongs to the State of North Dakota despite the fact the federal court's order provides that the United States owns this land subject only to the oil and gas interests being reserved in the Thomas's predecessors.

\*\* I've read through the nearly 1,500 pages of public comments submitted to this body, and the situation of the Thomas family is not unique. Others are telling this body, **STOP!!!**, think this through, and get it right.

\*\* In the 223 pages of Wenck's report, nowhere do they address this clear violation of the United States Constitution's Fifth Amendment and Article I, § 16 of the North Dakota Constitution that declares private property shall not be taken for public use without just compensation.

\*\* If this body goes along with Wenck's recommendation and transfers the oil and gas rights under those 10,402 acres that the United States acquired for the Garrison project based on the USACE's original survey and Segment Maps, YOU are sanctioning an unconstitutional taking – and are walking us right into more litigation.

\*\* There is but a single reference to the Wilkinson decision, and that reference **INEXPLICABLY** MAKES NO MENTION OF THE MOST CRITICAL COMPONENT ON THE ENTIRE DECISION.

\*\* The Supreme Court has decided this issue, the State cannot claim these 10,402 acres without there being an unconstitutional taking of the like we saw in the Wilkinson decision. The State cannot claim any mineral acres that were reserved in private landowners when the US acquired the property via deed or condemnation for the Garrison project.

\*\* I direct your attention to ¶¶ 22 – 25 of the Wilkinson decision →

[¶22] The Fifth Amendment of the United States Constitution declares private property shall not "be taken for public use, without just compensation." U.S. Const. Amend. V. Article I, § 16 of the North Dakota Constitution also declares that "[p]rivate property shall not be taken or damaged for public use without just compensation having been first made to, or paid into court for the owner . . . ."

[¶24] If the district court determines the State owns the minerals, the plaintiffs will be deprived of the mineral interests. The federal government compensated the plaintiffs for the surface property, **but the plaintiffs have not been compensated for the mineral interests**. The plaintiffs are entitled to compensation if the government's actions result in a "taking" of the mineral interests. See *Arkansas Game & Fish Comm'n v. United States*, 568 U.S. 23, 31-34 (2012) (stating permanent physical occupation of property authorized by

government is a taking, and government-induced flooding can constitute a taking); *Tarrant Reg'l Water Dist. v. Gragg*, 43 S.W.3d 609, 620-21 (Tex. Ct. App. 2001) (holding flooding of property will be considered a taking if the flooding after the construction of a reservoir was greater than it previously had been).

[¶25] The district court erred in determining there was no taking because the plaintiffs leased the minerals during the period before the State claimed ownership of the mineral interests.

\*\* United States Court of Claims, Cotton Land Co. v. United States (1948) → “As we have said, the Government built its public improvement [a dam and resulting reservoir]. The plaintiffs lost their land. The loss resulted from the improvement. We hold that the plaintiffs are entitled, under the Constitution, to be compensated.”

\*\* More recently, in 2012, the SCOTUS held in Arkansas Game & Fish Com'n v. United States, that: “When the government physically takes possession of an interest in property for some public purpose, it has a categorical duty to compensate the former owner.” **THIS IS THE BEDROCK PROTECTION OF THE FIFTH AMENDMENT PROTECTIONS FROM GOV'T INTRUSION ONTO OUR PRIVATE PROPERTY.** It is in the Bill of Rights – that most sacrosanct list of guarantees to our liberties and freedoms deserving of the highest protection under our Constitution.

\*\* That is precisely the situation with any acres the State attempts to claim that were reserved in private minerals when the US acquired the property for the Garrison Project.

\*\* Likewise, the March 2016 Report from the United States Department of Interior, Bureau of Land Management – provided as an exhibit to the Wilkinson, Lynch and Greenstar Resources letters – the United States has already rejected the State's attempt to redraw the OHWM line as the Wenck report does.

\*\* Redrawing the OHWM in a manner that differs from the OHWM shown in the Segment Maps is NO DIFFERENT than Bartlett & West's prior survey. Read this report. Then read it again. Read the Wilkinson decision. Think this through. Don't make the same mistake a second time – this question was decided in Wilkinson.

\*\* First page of the United States Report – the State of North Dakota has already argued to the US BLM that, “The Army Corps of Engineers (COE) Acquisition Segment Maps upon which the Supplemental Plats are based, are not an accurate reflection of the OHWM.” Last sentence of

second page presents the issue: “In this case we concern ourselves with the location of the OHWM prior to the artificial rising of the Missouri River to form Lake Sakakawea. To resolve your protest, we will address locating the line of OHWM, both legally and factually.”

\*\* THE STATE OF ND LOST THAT ARGUMENT –WILL THE STATE NOW ATTEMPT TO RELITIGATE THAT SAME QUESTION ALREADY DECIDED ONLY TWO YEARS AFTER THE FACT?

\*\* The United States has said the Segment Maps are the most accurate reflection of the OHWM. **Quote comment letters at page 2.**

The State cannot modify the Segment Maps and change ownership of minerals that were reserved in private mineral owners – via warrant deed or condemnation order – when the US acquired the property for the Garrison Project. That issue was decided in Wilkinson. If the State does so, open the checkbook because, as the Supreme Court held in ¶ 24, the mineral owners will be entitled to compensation as a matter of law under the Fifth Amendment of the US Constitution and Art. I, § 16 of the ND Constitution.

**\*\* Fortunately – WE have the opportunity to get this right. THIS CAN BE REFECTIFIED BEFORE ANY ADDITIONAL LAWSUITS ARE FILED. If this body adopts the Wenck report as is, you are ensuring litigation as sure as the waves rolling across the surface of Lake Sakakawea.**

**From:** Joshua A. Swanson  
**To:** [Kadmas, Bethany R.](#)  
**Subject:** OHWM hearing -- docs to supplement testimony  
**Date:** Wednesday, June 27, 2018 8:15:49 AM  
**Attachments:** [VOGEL-#3312795-v1-Jay Thomas Family - Lease 2.PDF](#)  
[VOGEL-#3312792-v1-Jay V Thomas Family Oil & Gas Leases 1.PDF](#)

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**CAUTION:** This email originated from an outside source. Do not click links or open attachments unless you know they are safe.

Bethany,

Good morning. Please find attached two PDFs of oil and gas leases to supplement the testimony I provided for the Jay V. Thomas Family, which includes the following individuals who submitted comment letters to the State: (1) LaRae Thomas; (2) Donna Sneva; (3) Virginia Rindahl; and (4) Carol Kay Moen.

I provided several exhibits for them after my testimony yesterday, including aerial maps of their property showing it was used for agricultural purposes as stated in their comment letters prior to the closure of Garrison Dam, the condemnation order from the United States District Court, and the Segment Map for their property done by the United States Army Corps of Engineers.

If you have any questions, please let me know. Thanks,

Joshua A. Swanson | Attorney

---



218 NP Avenue  
P.O. Box 1389 | Fargo, ND 58107-1389  
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## OIL AND GAS LEASE

AGREEMENT, Made and entered into the 14<sup>th</sup> day of September, 2009, by and between Terry N. Thomas and LaRae A. Thomas as Trustees for the Jay V. Thomas Family Trust, whose post office address is 1814 2<sup>nd</sup> Ave. E., Williston, ND 58801, hereinafter called Lessor (whether one or more) and North Plains Energy, LLC., whose post office address is 1888 Sherman St., Suite 375, Denver, CO 80203, hereinafter called Lessee.

WITNESSETH, That the Lessor, for and in consideration of Ten and more (\$10.00+) DOLLARS cash in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements hereinafter contained, has granted, demised, leased and let, and by these presents does grant, demise, lease and let exclusively unto the said Lessee, the land hereinafter described, with the exclusive right for the purpose of mining, exploring by geophysical and other methods, and operating for and producing therefrom oil and all gas of whatsoever nature or kind, with rights of way and easements for laying pipe lines, and erection of structures thereon to produce, save and take care of said products, all that certain tract of land situated in the County of Williams, State of North Dakota described as follows, to-wit:

**Township 153 North, Range 98 West of the 5<sup>th</sup> P.M.**

**Section 2: Lots 1(41.10), 2(40.05), 3(40.07), 4(26.60), S $\frac{1}{2}$ NW $\frac{1}{4}$**

**Section 3: Lots 1(40.06), 2(40.02), 3(39.98), 4(39.94), S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$**

**Section 4: Lots 1(39.92), 2(39.94), S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$**

**Section 10: N $\frac{1}{2}$ , N $\frac{1}{2}$ S $\frac{1}{2}$**

**Section 14: Lot 7(29.40), SW $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$**

**Section 15: 4.025 acres in SE $\frac{1}{4}$ NE $\frac{1}{4}$ , more fully described in Book 84, Page 93**

**Section 22: NE $\frac{1}{4}$ NE $\frac{1}{4}$**

**Section 23: Lots 2(26.85), 3(22.40), NW $\frac{1}{4}$**

**Township 154 North, Range 98 West of the 5<sup>th</sup> P.M.**

**Section 29: E $\frac{1}{2}$ SE $\frac{1}{4}$**

**Section 32: S $\frac{1}{2}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , E $\frac{1}{2}$ NE $\frac{1}{4}$**

**Section 33: NW $\frac{1}{4}$ , NE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$**

**Section 34: All**

**\*See Exhibit "A" attached hereto and made a part hereof.**

and containing 3,830.355 acres, more or less.

1. It is agreed that this lease shall remain in force for a term of **three (3)** years from this date and as long thereafter as oil or gas of whatsoever nature or kind is produced from said leased premises or on acreage pooled therewith, or drilling operations are continued as hereinafter provided. If, at the expiration of the primary term of this lease, oil or gas is not being produced on the leased premises or on acreage pooled therewith but Lessee is then engaged in drilling or reworking operations thereon, then this lease shall continue in force so long as operations are being continuously prosecuted on the leased premises or on acreage pooled therewith; and operations shall be considered to be continuously prosecuted if not more than ninety (90) days shall elapse between the completion or abandonment of one well and the beginning of operations for the drilling of a subsequent well. If after discovery of oil or gas on said land or on acreage pooled therewith, the production thereof should cease from any cause after the primary term, this lease shall not terminate if Lessee commences additional drilling or reworking operations within ninety (90) days from the date of cessation of production or from date of completion of dry hole. If oil or gas shall be discovered and produced as a result of such operations at or after the expiration of the primary term of this lease, this lease shall continue in force so long as oil or gas is produced from the lease premises or on acreage pooled therewith.

2. This is a PAID-UP LEASE. In consideration of the down cash payment, Lessor agrees that Lessee shall not be obligated, except as otherwise provided herein, to commence or continue any operations during the primary term. Lessee may at any time or times during or after the primary term surrender this lease as to all or any portion of said land and as to any strata or stratum by delivering to Lessor or by filing for record a release or releases, and be relieved of all obligation thereafter accruing as the acreage surrendered.

3. In consideration of the premises the said Lessee covenants and agrees:

1st. To deliver to the credit of Lessor, free of cost in the pipe line to which Lessee may connect wells on said land, the equal three sixteenths (**3/16th**) part of all oil produced and saved from the leased premises.

2nd. To pay Lessor three sixteenths (**3/16th**) of the gross proceeds each year, payable quarterly, for the gas from each well where gas only is found, while the same is being used off the premises and if used in the manufacture of gasoline a royalty of three sixteenths (**3/16th**), payable monthly at the prevailing market rate for gas.

3rd. To pay Lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of three sixteenths (**3/16th**) of the proceeds, at the mouth of the well, payable monthly at the prevailing market rate.

4. Where gas from a well capable of producing gas is not sold or used, Lessee may pay or tender as royalty to the royalty owners One Dollar per year per net royalty acre retained hereunder, such payment or tender to be made on or before the anniversary date of this lease next ensuing after the expiration of 90 days from the date such well is shut in and thereafter on or before the anniversary date of this lease during the period such well is shut in. If such payment or tender is made, it will be considered that gas is being produced within the meaning of this lease.

5. If said Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties (including any shut-in gas royalty) herein provided for shall be paid the said Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

6. Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for the Lessee's operations thereon, except surface water from wells or ponds of Lessor.

7. Lessee shall bury Lessee's pipelines below plow depth.

8. No well shall be drilled nearer than 500 feet to the house or barn now on said premises without written consent of the Lessor.

9. Lessee shall pay for damages caused by Lessee's operations on said land.

10. Lessee shall have the right during the term of this lease or within six (6) months of cessation of production or from termination of this lease whichever occurs last to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

11. The rights of Lessor and Lessee hereunder may be assigned in whole or part. No change in ownership of Lessor's interest (by assignment or otherwise) shall be binding on Lessee until Lessee has been furnished with notice, consisting of certified copies of all recorded instruments or documents and other information necessary to establish a complete chain of record title from Lessor, and then only with respect to payments thereafter made. No other kind of notice whether actual or constructive, shall be binding on Lessee. No present or future division of Lessor's ownership as to different portions or parcels of said land shall operate to enlarge the obligations or diminish the rights of Lessee, and all Lessee's operations may be conducted without regard to any such division. If all or any part of this lease is assigned, no leasehold owner shall be liable for any act or omission of any other leasehold owner.

12. Lessee, at its option, is hereby given the right and power at any time and from time to time as a recurring right, either before or after production, as to all or any part of the land described herein and as to any one or more of the formations hereunder, to pool or unitize the leasehold estate and the mineral estate covered by this lease with other land, lease or leases in the immediate vicinity for the production of oil and gas, or separately



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WILLIAMS COUNTY, ND

for the production of either, when in Lessee's judgment it is necessary or advisable to do so, and irrespective of whether authority similar to this exists with respect to such other land, lease or leases. Likewise, units previously formed to include formations not producing oil or gas, may be reformed to exclude such non-producing formation. The forming or reforming of any unit shall be accomplished by Lessee executing and filing of record a declaration of such unitization or reformation, which declaration shall describe the unit. Any unit may include land upon which a well has theretofore been completed or upon which operations for drilling have theretofore been commenced. Production, drilling or reworking operations or a well shut in for want of market anywhere on a unit which includes all or a part of this lease shall be treated as if it were production, drilling or reworking operations or a well shut in for want of a market under this lease. In lieu of the royalties elsewhere herein specified, including shut-in gas royalties, Lessor shall receive on production from the unit so pooled royalties only on the portion of such production allocated to this lease; such allocation shall be that proportion of the unit production that the total number of surface acres covered by this lease and included in the unit bears to the total number of surface acres in such unit. In addition to the foregoing, Lessee shall have the right to unitize, pool, or combine all or any part of the above described lands as to one or more of the formations thereunder with other lands in the same general area by entering into a cooperative or unit plan of development or operation approved by any governmental authority and, from time to time, with like approval, to modify, change or terminate any such plan or agreement and, in such event, the terms, conditions, and provisions of this lease shall be deemed modified to conform to the terms, conditions, and provisions of such approved cooperative or unit plan of development and, particularly, all drilling and development requirements of this lease, express or implied, shall be satisfied by compliance with the drilling and development requirements of such plan or agreement and this lease shall not terminate or expire during the life of such plan or agreement. In the event that said above described lands or any part thereof, shall hereafter be operated under any such cooperative or unit plan of development or operation whereby the production therefrom is allocated to different portions of the land covered by said plan, then the production allocated to any particular tract of land shall, for the purpose of computing the royalties to be paid hereunder to Lessor, be regarded as having been produced from the particular tract of land to which it is allocated and not to any other tract of land; and the royalty payments to be made hereunder to Lessor shall be based upon production only as so allocated. Lessor shall formally express Lessor's consent to any cooperative or unit plan of development or operation adopted by Lessee and approved by any governmental agency by executing the same upon request of Lessee.

13. All express or implied covenants of this lease shall be subject to all Federal and State Laws, Executive Orders, Rules and Regulations, and this lease shall not be terminated, in whole or in part, nor Lessee held liable in damages, for failure to comply therewith, if compliance is prevented by, or if such failure is the result of, any such law, order, rule, regulation, war, act of God, strike, fire, explosion, flood, or any other cause reasonably beyond the control of Lessee.

14. Lessor hereby agrees that the Lessee shall have the right at any time to redeem for Lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof, and the undersigned Lessors, for themselves and their heirs, successors and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made, as recited herein.

15. Should any one or more of the parties hereinabove named as Lessor fail to execute this lease, it shall nevertheless be binding upon all such parties who do execute it as Lessor. The word "Lessor," as used in this lease, shall mean any one or more or all of the parties who execute this lease as Lessor. All the provisions of this lease shall be binding on the heirs, successors and assigns of Lessor and Lessee.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written.

x Terry N. Thomas  
Terry N. Thomas, Trustee

STATE OF NORTH DAKOTA  
COUNTY OF Williams

On this 22<sup>nd</sup> day of September, 2009 before me personally appeared **Terry N. Thomas, Trustee**, known to me to be the person who is described in and who executed the within instrument as party of the first part, and acknowledged to me that he/she executed the same.

My Commission expires: April 10, 2015 Carrie Lambert  
Notary Public

CARRIE LAMBERT  
Notary Public  
State of North Dakota  
My Commission Expires April 10, 2015

x LaRae A. Thomas  
LaRae A. Thomas, Trustee

STATE OF NORTH DAKOTA  
COUNTY OF Ward

On this 16<sup>th</sup> day of Sept, 2009 before me personally appeared **LaRae A. Thomas, Trustee**, known to me to be the person who is described in and who executed the within instrument as party of the first part, and acknowledged to me that he/she executed the same.

My Commission expires: Oct 25, 2011 Ruth Headrick  
Notary Public

RUTH HEADRICK  
Notary Public  
State of North Dakota  
My Commission Expires Oct. 25, 2011

Exhibit "A"

Attached to and made a part of that certain oil and gas lease dated September 14, 2009, by and between Terry N. Thomas and LaRae A. Thomas as Trustees for the Jay V. Thomas Family Trust, whose post office address is 1814 2<sup>nd</sup> Ave. E., Williston, ND 58801, as Lessor, whether one or more, and North Plains Energy, LLC of 1888 Sherman St., Suite 375, Denver, CO 80203, as Lessee, covering all that certain tract of land situated in the County of Williams, State of North Dakota, to-wit:

**Township 153 North, Range 98 West of the 5<sup>th</sup> P.M.**

**Section 2:** Lots 1(41.10), 2(40.05), 3(40.07), 4(26.60), S $\frac{1}{2}$ NW $\frac{1}{4}$

**Section 3:** Lots 1(40.06), 2(40.02), 3(39.98), 4(39.94), S $\frac{1}{2}$ N $\frac{1}{2}$ , S $\frac{1}{2}$

**Section 4:** Lots 1(39.92), 2(39.94), S $\frac{1}{2}$ NE $\frac{1}{4}$ , SE $\frac{1}{4}$ , E $\frac{1}{2}$ SW $\frac{1}{4}$

**Section 10:** N $\frac{1}{2}$ , N $\frac{1}{2}$ S $\frac{1}{2}$

**Section 14:** Lot 7(29.40), SW $\frac{1}{4}$ NW $\frac{1}{4}$ , SW $\frac{1}{4}$

**Section 15:** 4.025 acres in SE $\frac{1}{4}$ NE $\frac{1}{4}$ , more fully described in Book 84, Page 93

**Section 22:** NE $\frac{1}{4}$ NE $\frac{1}{4}$

**Section 23:** Lots 2(26.85), 3(22.40), NW $\frac{1}{4}$

**Township 154 North, Range 98 West of the 5<sup>th</sup> P.M.**

**Section 29:** E $\frac{1}{2}$ SE $\frac{1}{4}$

**Section 32:** S $\frac{1}{2}$ NW $\frac{1}{4}$ , N $\frac{1}{2}$ SW $\frac{1}{4}$ , SE $\frac{1}{4}$ , E $\frac{1}{2}$ NE $\frac{1}{4}$

**Section 33:** NW $\frac{1}{4}$ , NE $\frac{1}{4}$ NE $\frac{1}{4}$ , S $\frac{1}{2}$ NE $\frac{1}{4}$ , N $\frac{1}{2}$ S $\frac{1}{2}$ , SE $\frac{1}{4}$ SE $\frac{1}{4}$

**Section 34:** All

**Notwithstanding the provisions of this lease to the contrary:**

(a) This lease shall terminate at the end of the primary term as to all of the leased premises except those stratigraphic zones included within a production or spacing unit prescribed by law or administrative authority on which is located a well producing or capable of producing oil and or gas, unless lessee is then engaged in drilling or reworking operations in accordance with the provisions of this lease. In the event that Lessee is engaged in said drilling or reworking operations at the expiration of the primary term, the lease shall remain in full force and effect as to all the leased premises so long as a continuous drilling program is maintained whereby not more than one hundred twenty days (120) shall elapse from the completion or abandonment of one well to the commencement of another well. Upon failure to maintain said continuous drilling program, this lease shall then automatically terminate as to such nonproductive part of the lease premises as provided above. Notwithstanding the termination of a portion or portions of this lease, so long as any portion of the lease remains in force and effect, Lessee shall continue to have rights of ingress and egress over all of the Leased Premises originally described on this lease for all purposes granted by this lease held by production. For the purpose of this Paragraph (a), the stratigraphic zone extending from the top of the Bakken Formation to the base of the Three Fork Sanish formation shall be deemed to be one formation and perforated zone of a producing well bore(s) or horizontal leg(s) within that formation will hold the entire formation and Lessee obligation pursuant to this Paragraph 21 shall be to release formation 100 feet above the Bakken and 100 feet below the Three Fork Sanish.

(b) The right to pool or unitize is limited to the drilling or spacing unit established by the State oil and gas regulatory commission. Production from a well producing oil and/or gas from a unit, which contains a part of the lease premises shall be considered production under the lease.

(c) Notwithstanding the provisions of this lease to the contrary, or apparently to the contrary, the right to shut-in a well capable only of producing gas provided in this lease shall not continue for a period beyond two (2) years after such well is shut-in, and then only as to the acreage in the spacing unit for that gas well; moreover, no gas well shall be deemed shut-in, for purposes of lease extension, unless that gas well is capable of producing gas in commercial quantities; provided, however, that the right to maintain this lease by virtue of the shut-in status of a well which is capable of producing oil or gas shall recur upon each occasion that a well is shut-in, but in each case for a period not in excess of two (2) consecutive years during the secondary term.

(d) If Lessee assigns all or part of this lease, both assignor and assignee shall remain subject to the terms of this agreement including but not limited to any implied covenants of exploration, development and protection from drainage until the Lessor is provided with a copy of the assignment which shows the mailing address of the assignee, excepting, however, responsibility for environmental damage as hereinafter provided shall not be avoided by any assignment with or without furnishing copies thereof, if such damage was caused by Lessee.

(e) Provisions of any State surface owner protection compensation laws, such as North Dakota Century Code Chapter 38-11.1 shall apply.

(f) Where the lease requires the Lessee to commence additional drilling or reworking operations, it is also required that such drilling or reworking operations be diligently prosecuted.

(g) If, during the term of this lease, an oil and/or gas well is completed on a drilling or spacing unit in which the Lessor has no interest and which is adjacent or tangent to any property covered by this lease within a drilling or spacing unit which is without an offset well, Lessee agrees to commence drilling operations on such property within six months of 1) completion or 2) the release of information from a "tight hole" status, or release the stratigraphic zone in which said oil and/or gas well is completed in the adjacent or tangent drilling unit or spacing unit described in this paragraph.

(h) Production under terms of this lease is intended to be paying production under which the income from production exceeds expenses allocated to such production by the operator unless otherwise agreed in writing by the parties.

(i) This lease shall not apply to coal bed methane.



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(j) Lessee agrees that all royalties accruing under this lease (including those paid in kind) shall be paid without deduction for the costs of producing, gathering, storing, separating, treating, dehydrating, compression, processing, transporting, marketing, depreciation, risk-capital charges and other post-production charges making the oil, gas and other products produced thereunder marketable and ready for sale or use.

(k) Nothing in this Exhibit is intended to relieve the Lessee from any implied covenants or from any obligation to act as a reasonable prudent operator, giving due regard to the interests of the Lessor.

(l) The Lessee undertakes to and does hereby agree to defend, hold harmless and indemnify Lessor, their successors, heirs or assigns, from any and all liability, costs and attorneys' fees the Lessor may suffer as a result of claims, demands, costs or judgments against Lessor arising out of any environmental damage caused by the Lessee on this lease or Lessee's noncompliance with any environmental law, order, administrative law or rule, adopted or promulgated by the State of North Dakota or the United States of America, or any board, agency or commission of either.

(m) Salt water disposal wells shall only be constructed and utilized with the express written permission of Lessor. No salt water from sources other than Lessor's wells may be disposed of in any salt water disposal well on Lessor's property without payment to and express written permission of Lessor. Salt water disposal wells shall be maintained and utilized in compliance with North Dakota law.

(n) In the event of any inconsistencies between the provisions of this Exhibit A and the provisions of the Lease, the provisions of Exhibit A shall control.

(o) Option to Extend: As to any lands covered by this lease which are not being held by the provisions of this lease, Lessee is hereby given the option to extend the primary term of this lease as to all or part of the lands leased for an additional two (2) years from the expiration of the original primary term. This option may be exercised by Lessee at any time during the last year of the original primary term by paying the sum of \$150.00 per net mineral acre to Lessor or to Lessor's credit in any depository bank designated in writing by Lessor. This payment shall be based upon the number of net mineral acres then covered by this lease, and all of the provisions of this lease relating to payment of shut-in royalties shall apply equally to this payment including, but not limited to, the provisions regarding changes in ownership. Should this option be exercised as herein provided, it shall be considered for all purposes as though this lease originally provided for a primary term of five (5) years. In the event this lease is being maintained by any provision herof at the expiration of the original primary term, Lessee shall have a period of thirty (30) days from the date this lease ceases to be so maintained within which to exercise this option.

Dated this 16 day of September, 2009

LaRae A. Thomas  
LaRae A. Thomas, Co-Trustee

Dated this 22 day of September, 2009

Terry N. Thomas  
Terry N. Thomas, Co-Trustee



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WILLIAMS COUNTY, ND

COUNTY RECORDER, WILLIAMS COUNTY, ND 9/28/2009 2:38 PM  
I certify that this instrument was filed and recorded  
Karl Evenson, County Recorder

by Keri Hauge Deputy 674099



**NORTH PLAINS ENERGY, LLC  
DENVER, COLORADO 80203**

March 1, 2011

Terry Thomas & LaRae Thomas, Trustees for the  
Jay V. Thomas Family Trust  
1814 2<sup>nd</sup> Ave. E.  
Williston, ND 58801

**RE: Oil and Gas Lease**

**All mineral interests not claimed by the State of North Dakota in and under the following described lands, to-wit:**

**Tracts Nos. AA-2410 and AA2467B of the Final Order of Condemnation by the United States of America as recorded in Book 130, Page 493 consisting of unsurveyed accretions in front of the following described lands, to-wit:**

**Township 153 North, Range 98 West of the 5<sup>th</sup> P.M.**

**Section 11: Lot 7**

**Section 13: Acres within the W $\frac{1}{2}$  considered part of Tract Number AA2467B**

**Section 14: Lots 2, 3, 6, 7**

**Section 23: Lots 2, 3**

**Section 24: Acres within the NW $\frac{1}{4}$ /NW $\frac{1}{4}$  considered part of Tract Number AA2467B**

**Counties of McKenzie and Williams, State of North Dakota**

Dear Terry and LaRae,

On behalf of North Plains Energy, I am pleased to offer you this oil and gas lease for your interest in the above described lands.

I am enclosing two copies of an oil and gas lease, a W-9 form and a Stipulation of Interest.

There is some confusion as to the ownership of these minerals both due to the mineral claim by the State of North Dakota and the difficulty of dividing the minerals based on the Judgment and Declaration of Taking for the Garrison Dam. At this time North Plains Energy is offering to lease only those mineral acres not claimed by the State of North Dakota. We are also requesting that all heirs of Elsie Bjella and Laura King sign a Stipulation of Interest to define ownership from this point forward.

Please sign and have notarized, one copy of the lease and one copy of the Stipulation of Interest and return to me along with the completed W-9 form. Only one trustee needs to sign the W-9, and you only need to return the signature page of the Stipulation of Interest. Once I have your completed documents and the processing is completed, North Plains will issue you a check for \$75,662.04.

If you have any questions, please contact me and I will do my best to answer them.

**Terms of Lease: \$1,200.00/acre.....3 years.....20% royalty.**

**Net acres owned: 63.0517 x \$1,200.00 = \$75,662.04**

Sincerely on behalf of NORTH PLAINS ENERGY, LLC

**RE: Oil and Gas Lease**  
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**Net acres owned: 63.0517 x \$1,200.00 = \$75,662.04**

Sincerely on behalf of NORTH PLAINS ENERGY, LLC



Phil Jore, Landman  
1310 - 22<sup>nd</sup> St. W.  
Williston, ND 58801  
701-572-3939

## OIL AND GAS LEASE

AGREEMENT, Made and entered into the 1<sup>st</sup> day of March, 2011, by and between Terry N. Thomas and LaRae A. Thomas as Trustees for the Jay V. Thomas Family Trust, whose post office address is 1814 2<sup>nd</sup> Ave. E., Williston, ND 58801, hereinafter called Lessor (whether one or more) and North Plains Energy, LLC., whose post office address is 1888 Sherman St., Suite 375, Denver, CO 80203, hereinafter called Lessee:

WITNESSETH, That the Lessor, for and in consideration of Ten and more (\$10.00+) DOLLARS cash in hand paid, the receipt of which is hereby acknowledged, and the covenants and agreements hereinafter contained, has granted, demised, leased and let, and by these presents does grant, demise, lease and let exclusively unto the said Lessee, the land hereinafter described, with the exclusive right for the purpose of mining, exploring by geophysical and other methods, and operating for and producing therefrom oil and all gas of whatsoever nature or kind, with rights of way and easements for laying pipe lines, and erection of structures thereon to produce, save and take care of said products, all that certain tract of land situated in the County of Williams and McKenzie, State of North Dakota described as follows, to-wit:

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**Section 23: Lots 2, 3**

**Section 24: Acres within the NW $\frac{1}{4}$ NW $\frac{1}{4}$  considered part of Tract Number AA2467B**

and containing 531.20 acres, more or less.

\*In addition to the land described above, lessor hereby grants, leases, and lets exclusively unto lessee, to the same extent as if specifically described, lands which are owned or claimed by lessor by one of the following reasons: (1) all lands and rights acquired or retained by lessor by avulsion, accretion, reliction or otherwise as the result of a change in the boundaries or centerline of any river or stream traversing or adjoining the lands described above; (2) all riparian lands and rights which are or may be incident, appurtenant, related or attributed to lessor in any lake, stream or river traversing or adjoining the lands described above by virtue of lessor's ownership of the land described above (3) all strips of land adjacent or contiguous to the lands described above owned or acquired by lessor through adverse possession or other similar statutes of the state which the lands are located.

1. It is agreed that this lease shall remain in force for a term of **three (3)** years from this date and as long thereafter as oil or gas of whatsoever nature or kind is produced from said leased premises or on acreage pooled therewith, or drilling operations are continued as hereinafter provided. If, at the expiration of the primary term of this lease, oil or gas is not being produced on the leased premises or on acreage pooled therewith but Lessee is then engaged in drilling or reworking operations thereon, then this lease shall continue in force so long as operations are being continuously prosecuted on the leased premises or on acreage pooled therewith; and operations shall be considered to be continuously prosecuted if not more than ninety (90) days shall elapse between the completion or abandonment of one well and the beginning of operations for the drilling of a subsequent well. If after discovery of oil or gas on said land or on acreage pooled therewith, the production thereof should cease from any cause after the primary term, this lease shall not terminate if Lessee commences additional drilling or reworking operations within ninety (90) days from the date of cessation of production or from date of completion of dry hole. If oil or gas shall be discovered and produced as a result of such operations at or after the expiration of the primary term of this lease, this lease shall continue in force so long as oil or gas is produced from the lease premises or on acreage pooled therewith.

2. This is a PAID-UP LEASE. In consideration of the down cash payment, Lessor agrees that Lessee shall not be obligated, except as otherwise provided herein, to commence or continue any operations during the primary term. Lessee may at any time or times during or after the primary term surrender this lease as to all or any portion of said land and as to any strata or stratum by delivering to Lessor or by filing for record a release or releases, and be relieved of all obligation thereafter accruing as the acreage surrendered.

3. In consideration of the premises the said Lessee covenants and agrees:

1st. To deliver to the credit of Lessor, free of cost in the pipe line to which Lessee may connect wells on said land, the equal twenty percent (20%) part of all oil produced and saved from the leased premises.

2nd. To pay Lessor twenty percent (20%) of the gross proceeds each year, payable quarterly, for the gas from each well where gas only is found, while the same is being used off the premises and if used in the manufacture of gasoline a royalty of twenty percent (20%), payable monthly at the prevailing market rate for gas.

3rd. To pay Lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of twenty percent (20%) of the proceeds, at the mouth of the well, payable monthly at the prevailing market rate.

4. Where gas from a well capable of producing gas is not sold or used, Lessee may pay or tender as royalty to the royalty owners One Dollar per year per net royalty acre retained hereunder, such payment or tender to be made on or before the anniversary date of this lease next ensuing after the expiration of 90 days from the date such well is shut in and thereafter on or before the anniversary date of this lease during the period such well is shut in. If such payment or tender is made, it will be considered that gas is being produced within the meaning of this lease.

**All mineral interests not claimed by the State of North Dakota in and under the following described lands, to-wit:**

**Tracts Nos. AA-2410 and AA2467B of the Final Order of Condemnation by the United States of America as recorded in Book 130, Page 493 consisting of unsurveyed accretions in front of the following described lands, to-wit:**

**Township 153 North, Range 98 West of the 5<sup>th</sup> P.M.**

**Section 11: Lot 7**

**Section 13: Acres within the W $\frac{1}{2}$  considered part of Tract Number AA2467B**

**Section 14: Lots 2, 3, 6, 7**

**Section 23: Lots 2, 3**

**Section 24: Acres within the NW $\frac{1}{4}$ NW $\frac{1}{4}$  considered part of Tract Number AA2467B**

and containing 531.20 acres, more or less.

\*In addition to the land described above, lessor hereby grants, leases, and lets exclusively unto lessee, to the same extent as if specifically described, lands which are owned or claimed by lessor by one of the following reasons: (1) all lands and rights acquired or retained by lessor by avulsion, accretion, reliction or otherwise as the result of a change in the boundaries or centerline of any river or stream traversing or adjoining the lands described above; (2) all riparian lands and rights which are or may be incident, appurtenant, related or attributed to lessor in any lake, stream or river traversing or adjoining the lands described above by virtue of lessor's ownership of the land described above (3) all strips of land adjacent or contiguous to the lands described above owned or acquired by lessor through adverse possession or other similar statutes of the state which the lands are located.

1. It is agreed that this lease shall remain in force for a term of three (3) years from this date and as long thereafter as oil or gas of whatsoever nature or kind is produced from said leased premises or on acreage pooled therewith, or drilling operations are continued as hereinafter provided. If, at the expiration of the primary term of this lease, oil or gas is not being produced on the leased premises or on acreage pooled therewith but Lessee is then engaged in drilling or reworking operations thereon, then this lease shall continue in force so long as operations are being continuously prosecuted on the leased premises or on acreage pooled therewith; and operations shall be considered to be continuously prosecuted if not more than ninety (90) days shall elapse between the completion or abandonment of one well and the beginning of operations for the drilling of a subsequent well. If after discovery of oil or gas on said land or on acreage pooled therewith, the production thereof should cease from any cause after the primary term, this lease shall not terminate if Lessee commences additional drilling or reworking operations within ninety (90) days from the date of cessation of production or from date of completion of dry hole. If oil or gas shall be discovered and produced as a result of such operations at or after the expiration of the primary term of this lease, this lease shall continue in force so long as oil or gas is produced from the lease premises or on acreage pooled therewith.

2. This is a PAID-UP LEASE. In consideration of the down cash payment, Lessor agrees that Lessee shall not be obligated, except as otherwise provided herein, to commence or continue any operations during the primary term. Lessee may at any time or times during or after the primary term surrender this lease as to all or any portion of said land and as to any strata or stratum by delivering to Lessor or by filing for record a release or releases, and be relieved of all obligation thereafter accruing as the acreage surrendered.

3. In consideration of the premises the said Lessee covenants and agrees:

1st. To deliver to the credit of Lessor, free of cost in the pipe line to which Lessee may connect wells on said land, the equal twenty percent (20%) part of all oil produced and saved from the leased premises.

2nd. To pay Lessor twenty percent (20%) of the gross proceeds each year, payable quarterly, for the gas from each well where gas only is found, while the same is being used off the premises and if used in the manufacture of gasoline a royalty of twenty percent (20%), payable monthly at the prevailing market rate for gas.

3rd. To pay Lessor for gas produced from any oil well and used off the premises or in the manufacture of gasoline or any other product a royalty of twenty percent (20%) of the proceeds, at the mouth of the well, payable monthly at the prevailing market rate.

4. Where gas from a well capable of producing gas is not sold or used, Lessee may pay or tender as royalty to the royalty owners One Dollar per year per net royalty acre retained hereunder, such payment or tender to be made on or before the anniversary date of this lease next ensuing after the expiration of 90 days from the date such well is shut in and thereafter on or before the anniversary date of this lease during the period such well is shut in. If such payment or tender is made, it will be considered that gas is being produced within the meaning of this lease.

5. If said Lessor owns a less interest in the above described land than the entire and undivided fee simple estate therein, then the royalties (including any shut-in gas royalty) herein provided for shall be paid the said Lessor only in the proportion which Lessor's interest bears to the whole and undivided fee.

6. Lessee shall have the right to use, free of cost, gas, oil and water produced on said land for the Lessee's operations thereon, except surface water from wells or ponds of Lessor.

7. Lessee shall bury Lessee's pipelines below plow depth.

8. No well shall be drilled nearer than 500 feet to the house or barn now on said premises without written consent of the Lessor.

9. Lessee shall pay for damages caused by Lessee's operations on said land.

10. Lessee shall have the right during the term of this lease or within 6 months of cessation of production or from termination of this lease, whichever occurs last, to remove all machinery and fixtures placed on said premises, including the right to draw and remove casing.

11. The rights of Lessor and Lessee hereunder may be assigned in whole or part. No change in ownership of Lessor's interest (by assignment or otherwise) shall be binding on Lessee until Lessee has been furnished with notice, consisting of certified copies of all recorded instruments or documents and other information necessary to establish a complete chain of record title from Lessor, and then only with respect to payments thereafter made. No other kind of notice whether actual or constructive, shall be binding on Lessee. No present or future division of Lessor's ownership as to different portions

or parcels of said land shall operate to enlarge the obligations or diminish the rights of Lessee, and all Lessee's operations may be conducted without regard to any such division. If all or any part of this lease is assigned, no leasehold owner shall be liable for any act or omission of any other leasehold owner.

12. Lessee, at its option, is hereby given the right and power at any time and from time to time as a recurring right, either before or after production, as to all or any part of the land described herein and as to any one or more of the formations hereunder, to pool or unitize the leasehold estate and the mineral estate covered by this lease with other land, lease or leases in the immediate vicinity for the production of oil and gas, or separately for the production of either, when in Lessee's judgment it is necessary or advisable to do so, and irrespective of whether authority similar to this exists with respect to such other land, lease or leases. Likewise, units previously formed to include formations not producing oil or gas, may be reformed to exclude such non-producing formation. The forming or reforming of any unit shall be accomplished by Lessee executing and filing of record a declaration of such unitization or reformation, which declaration shall describe the unit. Any unit may include land upon which a well has theretofore been completed or upon which operations for drilling have theretofore been commenced. Production, drilling or reworking operations or a well shut in for want of market anywhere on a unit which includes all or a part of this lease shall be treated as if it were production, drilling or reworking operations or a well shut in for want of a market under this lease. In lieu of the royalties elsewhere herein specified, inducing shut-in gas royalties, Lessor shall receive on production from the unit so pooled royalties only on the portion of such production allocated to this lease; such allocation shall be that proportion of the unit production that the total number of surface acres covered by this lease and included in the unit bears to the total number of surface acres in such unit. In addition to the foregoing, Lessee shall have the right to unitize, pool, or combine all or any part of the above described lands as to one or more of the formations thereunder with other lands in the same general area by entering into a cooperative or unit plan of development or operation approved by any governmental authority and, from time to time, with like approval, to modify, change or terminate any such plan or agreement and, in such event, the terms, conditions, and provisions of this lease shall be deemed modified to conform to the terms, conditions, and provisions of such approved cooperative or unit plan of development of operation and, particularly, all drilling and development requirements of this lease, express or implied, shall be satisfied by compliance with the drilling and development requirements of such plan or agreement and this lease shall not terminate or expire during the life of such plan or agreement. In the event that said above described lands or any part thereof, shall hereafter be operated under any such cooperative or unit plan of development or operation whereby the production therefrom is allocated to different portions of the land covered by said plan, then the production allocated to any particular tract of land shall, for the purpose of computing the royalties to be paid hereunder to Lessor, be regarded as having been produced from the particular tract of land to which it is allocated and not to any other tract of land; and the royalty payments to be made hereunder to Lessor shall be based upon production only as so allocated. Lessor shall formally express Lessor's consent to any cooperative or unit plan of development or operation adopted by Lessee and approved by any governmental agency by executing the same upon request of Lessee.

13. All express or implied covenants of this lease shall be subject to all Federal and State Laws, Executive Orders, Rules and Regulations, and this lease shall not be terminated, in whole or in part, nor Lessee held liable in damages, for failure to comply therewith, if compliance is prevented by, or if such failure is the result of, any such law, order, rule, regulation, war, act of God, strike, fire, explosion, flood, or any other cause reasonably beyond the control of Lessee.

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14. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee shall have the right at any time to redeem for Lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof, and the undersigned Lessors, for themselves and their heirs, successors and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made, as recited herein.

15. Should any one or more of the parties hereinabove named as Lessor fail to execute this lease, it shall nevertheless be binding upon all such parties who do execute it as Lessor. The word "Lessor," as used in this lease, shall mean any one or more or all of the parties who execute this lease as Lessor. All the provisions of this lease shall be binding on the heirs, successors and assigns of Lessor and Lessee.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written.

X Terry N. Thomas  
Terry N. Thomas, Trustee

STATE OF NORTH DAKOTA

COUNTY OF Williams

On this 4th day of March, 2011 before me personally appeared **Terry N. Thomas, Trustee**, known to me to be the person who is described in and who executed the within instrument as party of the first part, and acknowledged to me that he/she executed the same.

My Commission expires: 2/11/17

Kari Krings  
Notary Public

KARI KRINGEN  
Notary Public  
State of North Dakota  
My Commission Expires Feb 11, 2017

X LaRae A. Thomas  
LaRae A. Thomas, Trustee

STATE OF NORTH DAKOTA

COUNTY OF Williams

On this 4th day of March, 2011 before me personally appeared **LaRae A. Thomas, Trustee**, known to me to be the person who is described in

or unit plan or development of operation and, particularly, all drilling and development requirements of this lease, express or implied, shall be satisfied by compliance with the drilling and development requirements of such plan or agreement and this lease shall not terminate or expire during the life of such plan or agreement. In the event that said above described lands or any part thereof, shall hereafter be operated under any such cooperative or unit plan or development or operation whereby the production therefrom is allocated to different portions of the land covered by said plan, then the production allocated to any particular tract of land shall, for the purpose of computing the royalties to be paid hereunder to Lessor, be regarded as having been produced from the particular tract of land to which it is allocated and not to any other tract of land; and the royalty payments to be made hereunder to Lessor shall be based upon production only as so allocated. Lessor shall formally express Lessor's consent to any cooperative or unit plan of development or operation adopted by Lessee and approved by any governmental agency by executing the same upon request of Lessee.

13. All express or implied covenants of this lease shall be subject to all Federal and State Laws, Executive Orders, Rules and Regulations, and this lease shall not be terminated, in whole or in part, nor Lessee held liable in damages, for failure to comply therewith, if compliance is prevented by or if such failure is the result of, any such law, order, rule, regulation, war, act of God, strike, fire, explosion, flood, or any other cause reasonably beyond the control of Lessee.

14. Lessor hereby warrants and agrees to defend the title to the lands herein described, and agrees that the Lessee shall have the right at any time to redeem for Lessor, by payment, any mortgages, taxes or other liens on the above described lands, in the event of default of payment by Lessor, and be subrogated to the rights of the holder thereof, and the undersigned Lessors, for themselves and their heirs, successors and assigns, hereby surrender and release all right of dower and homestead in the premises described herein, insofar as said right of dower and homestead may in any way affect the purposes for which this lease is made, as recited herein.

15. Should any one or more of the parties hereinabove named as Lessor fail to execute this lease, it shall nevertheless be binding upon all such parties who do execute it as Lessor. The word "Lessor", as used in this lease, shall mean any one or more or all of the parties who execute this lease as Lessor. All the provisions of this lease shall be binding on the heirs, successors and assigns of Lessor and Lessee.

IN WITNESS WHEREOF, this instrument is executed as of the date first above written.

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X Terry N. Thomas  
Terry N. Thomas, Trustee

STATE OF NORTH DAKOTA

COUNTY OF Williams

On this 4th day of March, 2011 before me personally appeared **Terry N. Thomas, Trustee**, known to me to be the person who is described in and who executed the within instrument as party of the first part, and acknowledged to me that he/she executed the same.

My Commission expires: 2/11/17

Kari Krings  
Notary Public

KARI KRINGEN  
Notary Public  
State of North Dakota  
My Commission Expires Feb 11, 2017

X LaRae A. Thomas  
LaRae A. Thomas, Trustee

STATE OF NORTH DAKOTA

COUNTY OF Williams

On this 4th day of March, 2011 before me personally appeared **LaRae A. Thomas, Trustee**, known to me to be the person who is described in and who executed the within instrument as party of the first part, and acknowledged to me that he/she executed the same.

My Commission expires: 2/11/17

Kari Krings  
Notary Public

KARI KRINGEN  
Notary Public  
State of North Dakota  
My Commission Expires Feb 11, 2017

**Exhibit "A"**

Attached to and made a part of that certain oil and gas lease dated **March 1, 2011**, by and between **Terry N. Thomas and LaRae A. Thomas as Trustees for the Jay V. Thomas Family Trust**, whose post office address is **1814 2<sup>nd</sup> Ave. E., Williston, ND 58801**, as Lessor, whether one or more, and **North Plains Energy, LLC** of **1888 Sherman St., Suite 375, Denver, CO 80203**, as Lessee, covering all that certain tract of land situated in the Counties of **Williams and McKenzie**, State of North Dakota, to-wit:

**All mineral interests not claimed by the State of North Dakota in and under the following described lands, to-wit:**

**Tracts Nos. AA-2410 and AA2467B of the Final Order of Condemnation by the United States of America as recorded in Book 130, Page 493 consisting of unsurveyed accretions in front of the following described lands, to-wit:**

**Section 11: Lot 7**

**Section 13: Acres within the W $\frac{1}{2}$  considered part of Tract Number AA2467B**

**Section 14: Lots 2, 3, 6, 7**

**Section 23: Lots 2, 3**

**Section 24: Acres within the NW $\frac{1}{4}$ NW $\frac{1}{4}$  considered part of Tract Number AA2467B**

**Notwithstanding the provisions of this lease to the contrary:**

(a) This lease shall terminate at the end of the primary term as to all of the leased premises except those stratigraphic zones included within a production or spacing unit prescribed by law or administrative authority on which is located a well producing or capable of producing oil and or gas, unless lessee is then engaged in drilling or reworking operations in accordance with the provisions of this lease. In the event that Lessee is engaged in said drilling or reworking operations at the expiration of the primary term, the lease shall remain in full force and effect as to all the leased premises so long as a continuous drilling program is maintained whereby not more than one hundred twenty days (120) shall elapse from the completion or abandonment of one well to the commencement of another well. Upon failure to maintain said continuous drilling program, this lease shall then automatically terminate as to such nonproductive part of the lease premises as provided above. Notwithstanding the termination of a portion or portions of this lease, so long as any portion of the lease remains in force and effect, Lessee shall continue to have rights of ingress and egress over all of the Leased Premises originally described on this lease for all purposes granted by this lease held by production. For the purpose of this Paragraph (a), the stratigraphic zone extending from the top of the Bakken Formation to the base of the Three Fork Sanish formation shall be deemed to be one formation and perforated zone of a producing well bore(s) or horizontal leg(s) within that formation will hold the entire formation and Lessee obligation pursuant to this Paragraph (a) shall be to release formation 100 feet above the Bakken and 100 feet below the Three Fork Sanish.

(b) The right to pool or unitize is limited to the drilling or spacing unit established by the State oil and gas regulatory commission. Production from a well producing oil and/or gas from a unit, which contains a part of the lease premises shall be considered production under the lease.

(c) Notwithstanding the provisions of this lease to the contrary, or apparently to the contrary, the right to shut-in a well capable only of producing gas provided in this lease shall not continue for a period beyond two (2) years after such well is shut-in, and then only as to the acreage in the spacing unit for that gas well; moreover, no gas well shall be deemed shut-in, for purposes of lease extension, unless that gas well is capable of producing gas in commercial quantities; provided, however, that the right to maintain this lease by virtue of the shut-in status of a well which is capable of producing oil or gas shall recur upon each occasion that a well is shut-in, but in each case for a period not in excess of two (2) consecutive years during the secondary term.

(d) If Lessee assigns all or part of this lease, both assignor and assignee shall remain subject to the terms of this agreement including but not limited to any implied covenants of exploration, development and protection from drainage until the Lessor is provided with a copy of the assignment which shows the mailing address of the assignee, excepting, however, responsibility for environmental damage as hereinafter provided shall not be avoided by any assignment with or without furnishing copies thereof, if such damage was caused by Lessee.

(e) Provisions of any State surface owner protection compensation laws, such as North Dakota Century Code Chapter 38-11.1 shall apply.

(f) Where the lease requires the Lessee to commence additional drilling or reworking operations, it is also required that such drilling or reworking operations be diligently prosecuted.

(g) If, during the term of this lease, an oil and/or gas well is completed on a drilling or spacing unit in which the Lessor has no interest and which is adjacent or tangent to any property covered by this lease within a drilling or spacing unit which is without an offset well, Lessee agrees to commence drilling operations on such property within six months of 1) completion or 2) the release of information from a "tight hole" status, or release the stratigraphic zone in which said oil and/or gas well is completed in the adjacent or tangent drilling unit or spacing unit described in this paragraph.

(h) Production under terms of this lease is intended to be paying production under which the income from production exceeds expenses allocated to such production by the operator unless otherwise agreed in writing by the parties.

(i) This lease shall not apply to coal bed methane.

(j) Lessee agrees that all royalties accruing under this lease (including those paid in kind) shall be paid without deduction for the costs of producing, gathering, storing, separating, treating, dehydrating, compression, processing, transporting, marketing, depreciation, risk-capital charges and other post-production charges making the oil, gas and other products produced thereunder marketable and ready for sale or use.

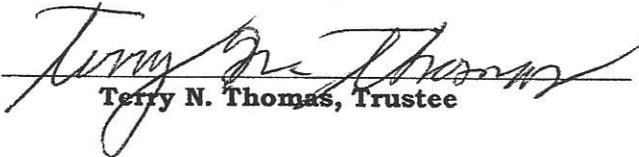
(k) Nothing in this Exhibit is intended to relieve the Lessee from any implied covenants or from any obligation to act as a reasonable prudent operator, giving due regard to the interests of the Lessor.

(l) The Lessee undertakes to and does hereby agree to defend, hold harmless and indemnify Lessor, their successors, heirs or assigns, from any and all liability, costs and attorneys' fees the Lessor may suffer as a result of claims, demands, costs or judgments against Lessor arising out of any environmental damage caused by the Lessee on this lease or Lessee's noncompliance with any environmental law, order, administrative law or rule, adopted or promulgated by the State of North Dakota or the United States of America, or any board, agency or commission of either.

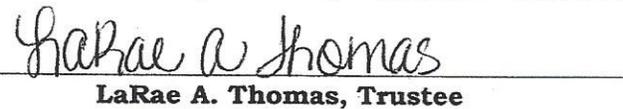
(m) Salt water disposal wells shall only be constructed and utilized with the express written permission of Lessor. No salt water from sources other than Lessor's wells may be disposed of in any salt water disposal well on Lessor's property without payment to and express written permission of Lessor. Salt water disposal wells shall be maintained and utilized in compliance with North Dakota law.

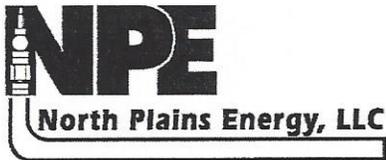
(n) In the event of any inconsistencies between the provisions of this Exhibit A and the provisions of the Lease, the provisions of Exhibit A shall control.

Dated this 4 day of March, 2011

  
Terry N. Thomas, Trustee

Dated this 4 day of March, 2011

  
LaRae A. Thomas, Trustee



1888 Sherman St., Suite 375  
Denver, CO 80203

Phone (303) 800-5100  
Fax (303) 648-6787

**VIA CERTIFIED MAIL – RETURNED RECEIPT REQUESTED**  
**Receipt Number – 7010 3090 0001 9332 6246**

March 30, 2011

Jay V. Thomas Family Trust  
Terry N. Thomas and LaRae A. Thomas, Trustees  
1814 2nd Ave. E.  
Williston, ND 58801

**RE: Township 153 North, Range 98 West**  
**Tracts AA-2410, AA2467B, consisting of unsurveyed accretions in front of the**  
**following described lands, to-wit:**  
**Section 11: Lot 7**  
**Section 13: Acres in W2 considered part of Tract Number AA2467B**  
**Section 14: Lots 2, 3, 6, 7**  
**Section 23: Lots 2, 3**  
**Section 24: Acres in NWNW considered part of Tract Number AA2467B**  
**Williams County, North Dakota**

Dear Jay V. Thomas Family Trust:

Pursuant to the oil and gas lease dated March 1, 2011 that you signed with our company, enclosed please find our check number 33152 in the amount of **\$75,662.04** for the lease bonus payment covering the above described lands. Our lease purchase report indicates that you own 63.0517 net acres within the subject area, and North Plains has agreed to pay \$1,200.00 per net acre for the lease. The term of our lease will be 3 years, and the Royalty Interest will be 20.00% of the oil and gas proceeds therefrom.

Thank you and should you have any questions please contact me at anytime.

Sincerely,

**NORTH PLAINS ENERGY, LLC**

A handwritten signature in black ink, appearing to read "Cassandra M. Graebing", is written over a horizontal line.

Cassandra M. Graebing  
Land Assistant

Enclosure

1707 North 9th Street  
PO Box 5523  
Bismarck, ND 58506-5523  
Phone: (701) 328 – 2800  
Fax: (701) 328 – 3650

<https://land.nd.gov>



June 26, 2018

Lynn Helms  
North Dakota Industrial Commission  
600 East Boulevard Avenue, Dept. 405  
Bismarck, ND 58505-0840

RE: Ordinary High Water Mark of the Missouri River Bed as Prepared by Wenck

Dear Mr. Helms:

Thank you for the opportunity to provide comments on the Ordinary High Water Mark of the Missouri River Bed review prepared by Wenck Associates, Inc. (“Wenck”).

### Overview

The North Dakota Constitution and Century Code designate the Board of University and School Lands (“Board”) as the governing body for a grant of land received at statehood for the benefit of education and certain institutions. The land, the proceeds, and investments are managed in several permanent trusts, including the Common Schools Trust Fund, for the benefit of the institutions for which the land was granted.

According to state statute, the Board also manages state-owned minerals and the oil, gas and related hydrocarbons within the beds of the State’s navigable waters. On behalf of the State, the Board oversees the Strategic Investment and Improvements Fund (“SIIF”) which receives the revenues from sovereign minerals. The Board has had this management responsibility since at least 1977.

I am here today to provide comment on the Ordinary High Water Mark of the Missouri River Bed review as prepared by Wenck (“Review”) presented to the North Dakota Industrial Commission (“NDIC”) on April 17, 2018 regarding the ordinary high water mark (“OHWM”) of the historical Missouri riverbed channel review required by N.D.C.C. ch. 61-33.1.

The Department of Trust Lands (“Department”) will not comment on the OHWM definition provided in the Review, data compilation methods, methodology, legal research conducted to determine clear and convincing evidence standards, or other technical comments relating to the specific boundary delineations. The Department’s comments will focus on the usability of the Review for purposes of “implementing any acreage adjustments, lease bonus and royalty refunds, and payment demands as may be necessary relating to state-issued oil and gas leases”, N.D.C.C. § 61-33.1-04(2)(a), specifically: (1) public domain tracts; (2) omitted data and variables; and (3) alignment of data.

INDUSTRIAL COMMISSION  
STATE OF NORTH DAKOTA  
DATE 6-26-18 CASE NO. 26584  
Introduced By Jodi Smith  
Exhibit 1  
Identified By Jodi Smith

### **Public Domain Tracts**

N.D.C.C. § 61-33.1-06 states:

Notwithstanding any provision of this chapter to the contrary, the ordinary high water mark of the historical Missouri riverbed channel abutting nonpatented public domain lands owned by the United States must be determined by the branch of cadastral study of the United States bureau of land management in accordance with federal law.

Of the estimated 7,300 nonpatented public domain acres, N.D.C.C. § 61-33.1-06 defers determination of ownership of public domain tracts to the federal government. The Department's interpretation of N.D.C.C. § 61-33.1-06 is that the OHWM of the historical Missouri riverbed channel abutting the public domain tracts was to have been established at statehood or by the Supplemental Plats conducted by "the branch of cadastral study of the United States bureau of land management." These Supplemental Plats state they were prepared for the purpose of delineating the boundaries of public domain oil and gas interests in determining the acreage of the areas affected by the movement of the Missouri River prior to the artificial flooding of Lake Sakakawea.

The Department's initial analysis of the Review, which included comparison to the Supplemental Plats, determined Wenck: (1) did not identify in its OHWM Delineation Results Tables 2a and 2b ("Tables") which tracts are deemed public domain, and (2) delineated the OHWM through public domain tracts, thus affecting the State's total estimated acreage presented in the Review. Examples of the OHWM delineated through public domain tracts are as follows:

T153- R99 Sec. 34; T152-R99 Sec. 6 – Exhibit A  
T153-R98 Sec. 11 – Exhibit B  
T153-R98 Sec. 21 & 28 – Exhibit C

### **Omitted Data and Variables**

Through the Department's initial analysis of the Review, it appears data is missing from the Tables which may lead to invalid conclusions.

The Department is missing relevant river acreage data. The rows of the Tables titled BLM River Corridor appear to provide an overall acreage for the riverbed, but do not identify the acreage for specific quarter-quarter sections. The Review does not fully allocate acreages above or below the OHWM; thus preventing the Department from calculating the number of acres within each section. For the Department to implement acreage adjustments as required under the N.D.C.C. ch. 61-33.1, the Department will need this data, whether the data is provided by Wenck or it is necessary for the Department to contract with an independent engineering firm to provide this data. The Department will also need accretion data attributable to riparian or upland landowners within each quarter-quarter section. Without this data, the Board cannot accurately "implement any acreage adjustments, lease bonus and royalty refunds, and payment demands as may be necessary relating to state-issued oil and gas leases." N.D.C.C. § 61-33.1-04(2)(a).

Examples of areas with missing data include:

T153-R99 Sec. 27 – Exhibit D  
T154-R96 Sec. 25 – Exhibit E

### **Alignment of Data**

#### *Significant Digit-Decimal Point*

The Department requests the columns of the Tables be brought out to at least two decimal points, to mirror how land is denoted in the Bureau of Land Management Master Title Plats (“Master Title Plats”) or PLSS. Currently, the Tables only provide one decimal point and that rounding of acreage could result in a significant acreage change for the State and fee owners. Without the additional information, the Department would be forced to make assumptions on acreage adjustment.

#### *Total Acres - Tables 2a and 2b*

The Department requests additional information regarding Wenck’s determination of “Total Acres” as presented in the second column of the Tables, as that information is not clearly defined in the Review. In many instances, it appears acreage in a quarter-quarter has increased or decreased with no explanation of where that acreage went or was added from. The Department would also seek additional information regarding the acreage depicted throughout the Tables as it is not congruent with the Master Title Plats by which the Department and industry’s spacing unit boundaries have been derived.

#### *Legal Descriptions*

Many of the legal descriptions of the tracts of land along the historical Missouri riverbed channel are incorrectly labeled. The Review seems to disregard pre-established government lots that were created per the original Master Title Plats. Instead, in many instances, the Review refers to government lots by their location within the section.

Furthermore, the Review protracts quarter-quarters both in riparian areas and through accreted lands. This is erroneous and does not protect the interests of the upland mineral owners, both in terms of their rights to the shoreline and patented area. Examples of possible inaccurate legal descriptions are:

T153-R93W Sec. 20 – Exhibit F  
T153-R93W Sec. 26– Exhibit G  
T153-R94W Sec. 3 & 4; T154-R93 Sec. 34 – Exhibit H  
T153-R99 Sec. 36 – Exhibit I

### **Conclusion**

The Department recognizes and appreciates the significant work of Wenck and the NDIC to produce the Review and recognizes it as the initial step in the process; however, additional work is needed by either Wenck or an independent engineering firm to provide the Department with the necessary data to “implement any acreage adjustments, lease bonus and royalty refunds, and payment demands as may be necessary relating to state-issued oil and gas leases”. N.D.C.C. § 61-33.1-04(2)(a). Finally,

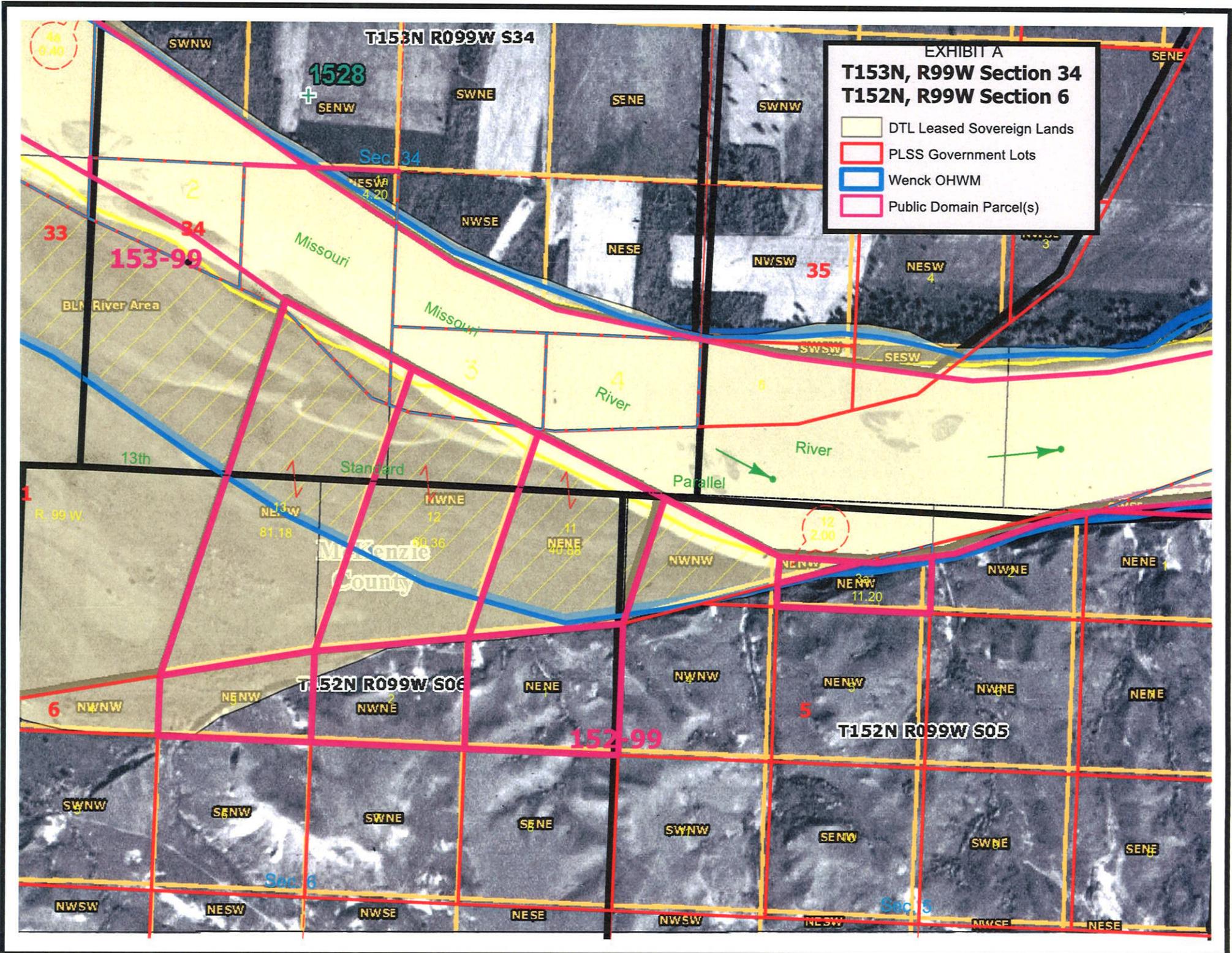
Page 4  
Lynn Helms  
June 26, 2018

the Department reserves the right to raise additional issues or concerns with the Wenck Review as further information is provided and/or additional analysis is conducted.

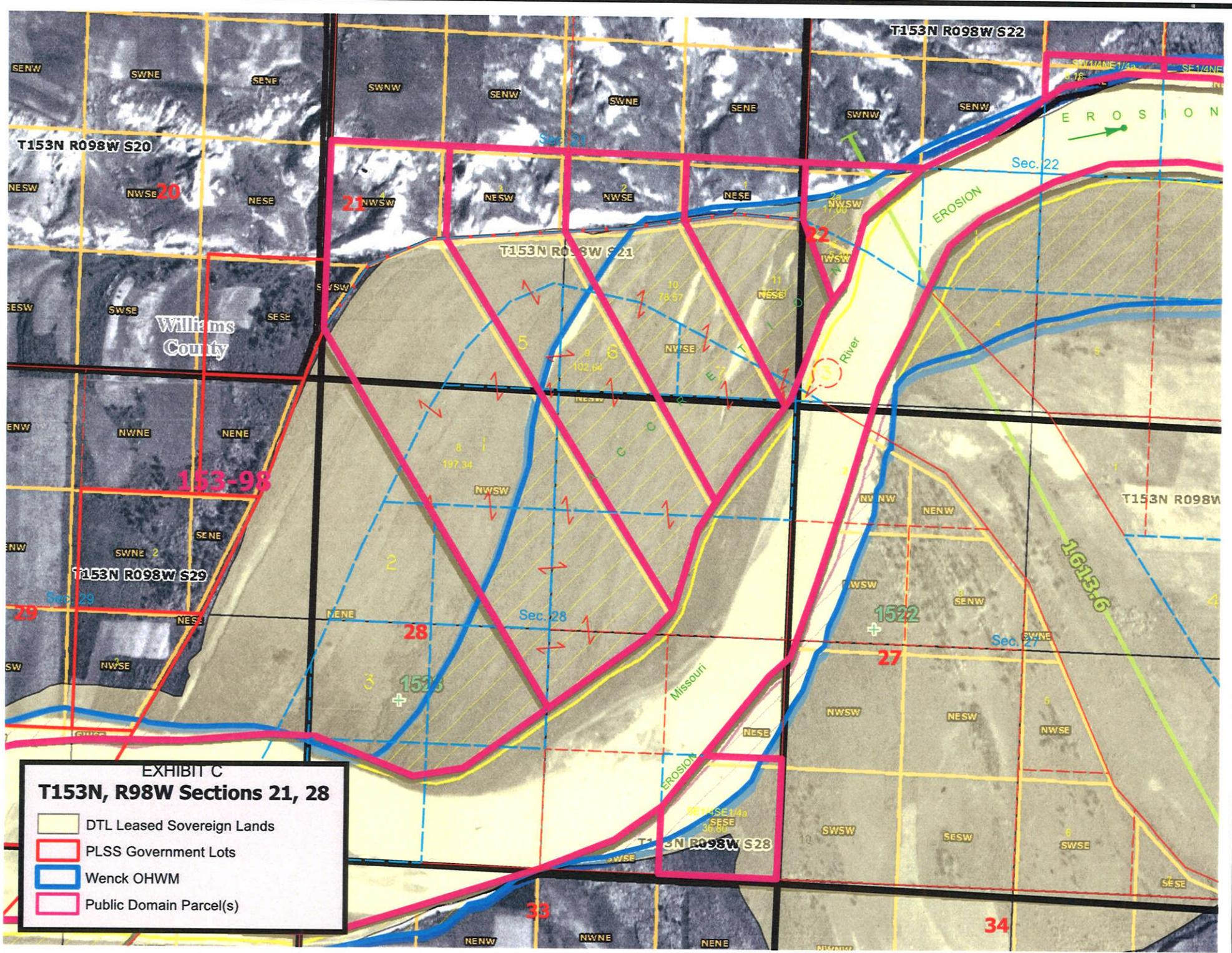
Sincerely,

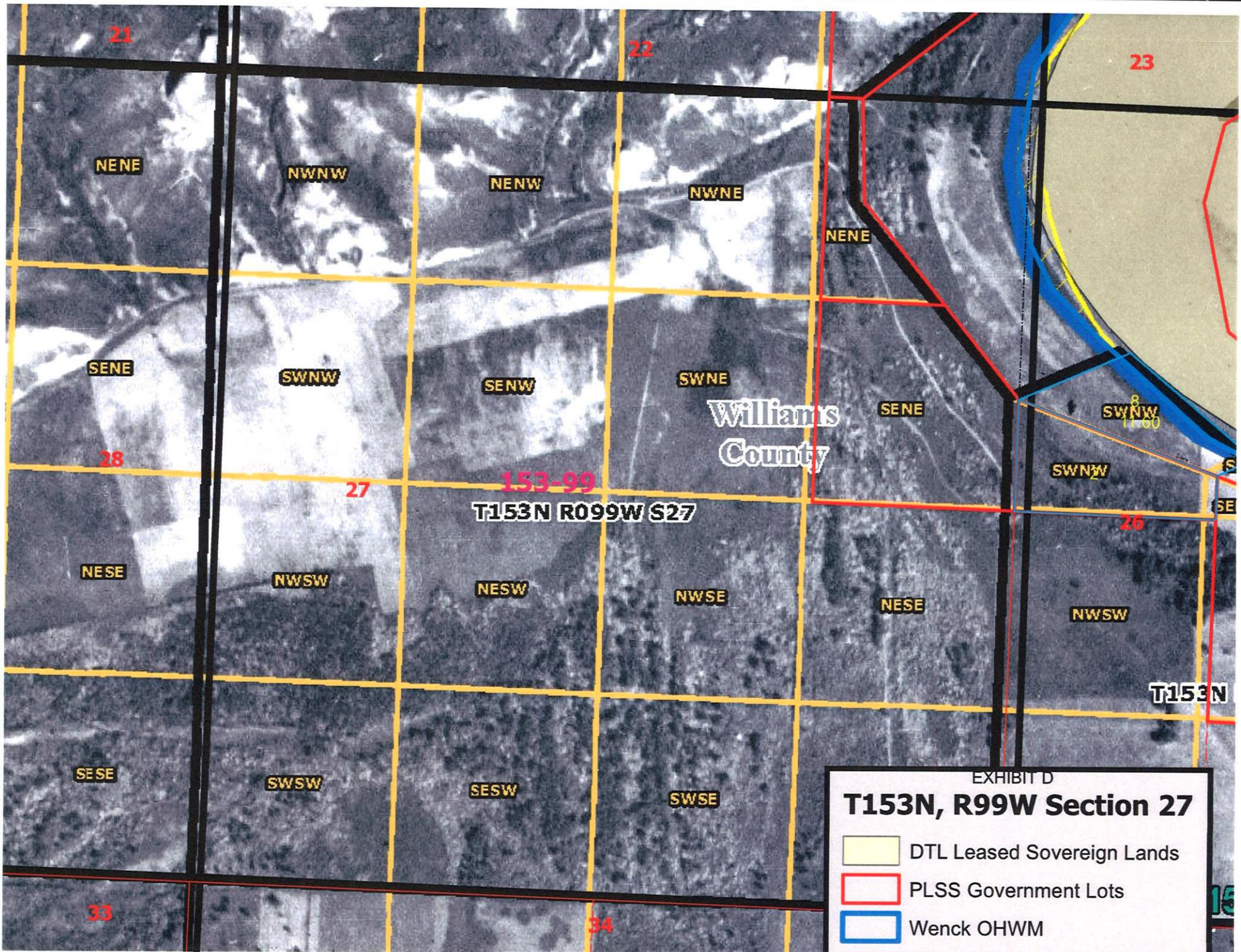
A handwritten signature in cursive script that reads "Jodi Smith".

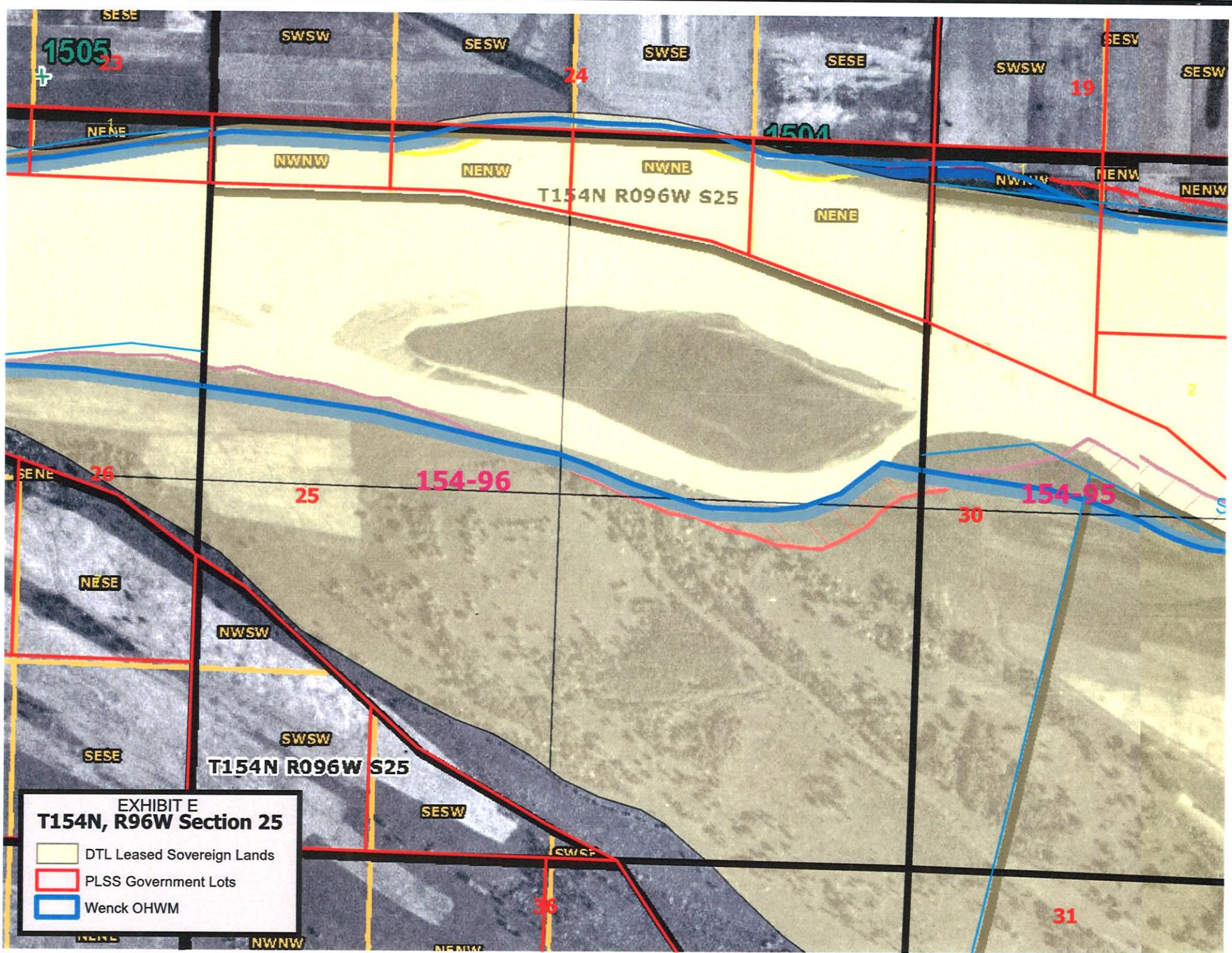
Jodi Smith  
Commissioner of University and School Lands

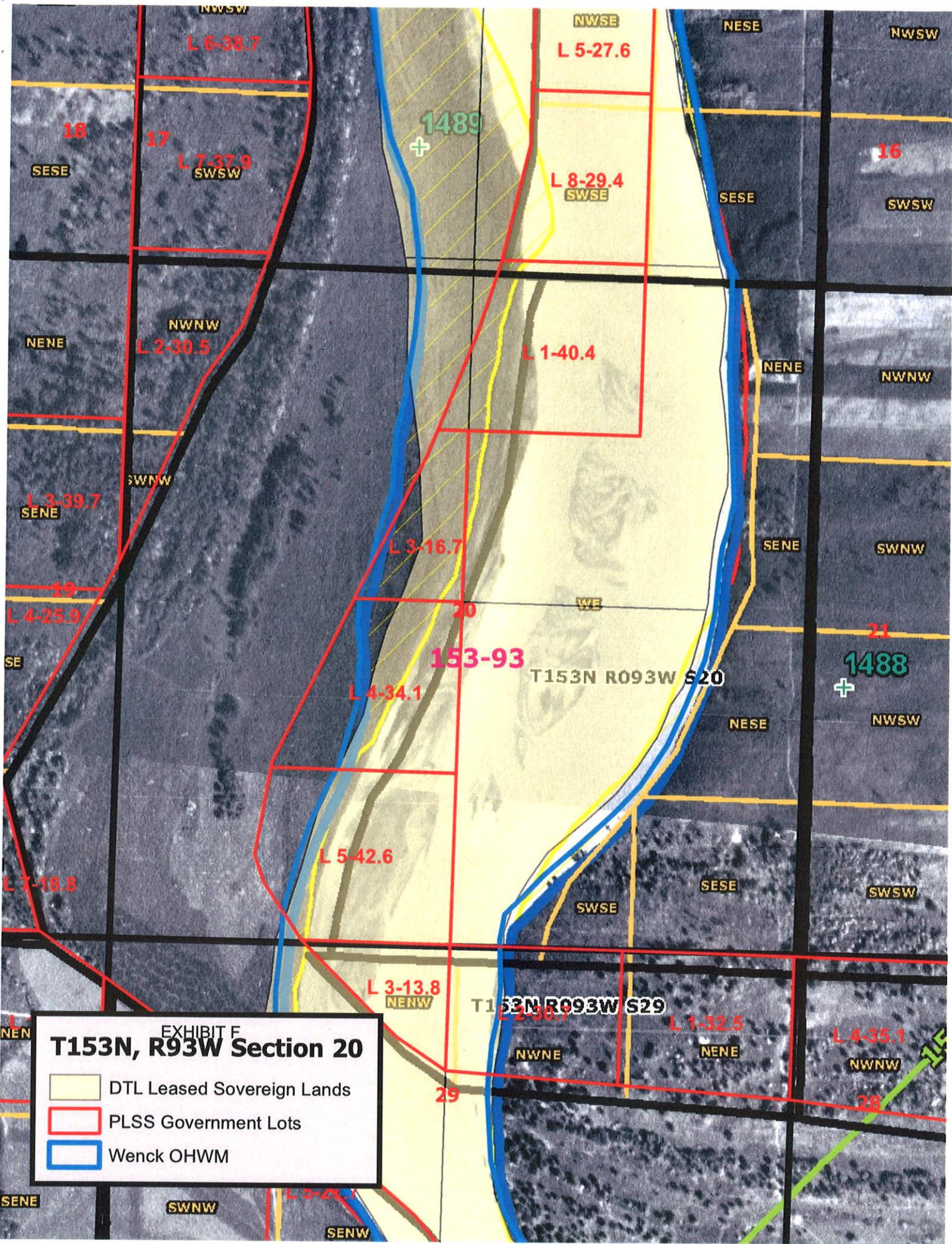












**EXHIBIT F**  
**T153N, R93W Section 20**

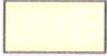
- DTL Leased Sovereign Lands
- PLSS Government Lots
- Wenck OHWM

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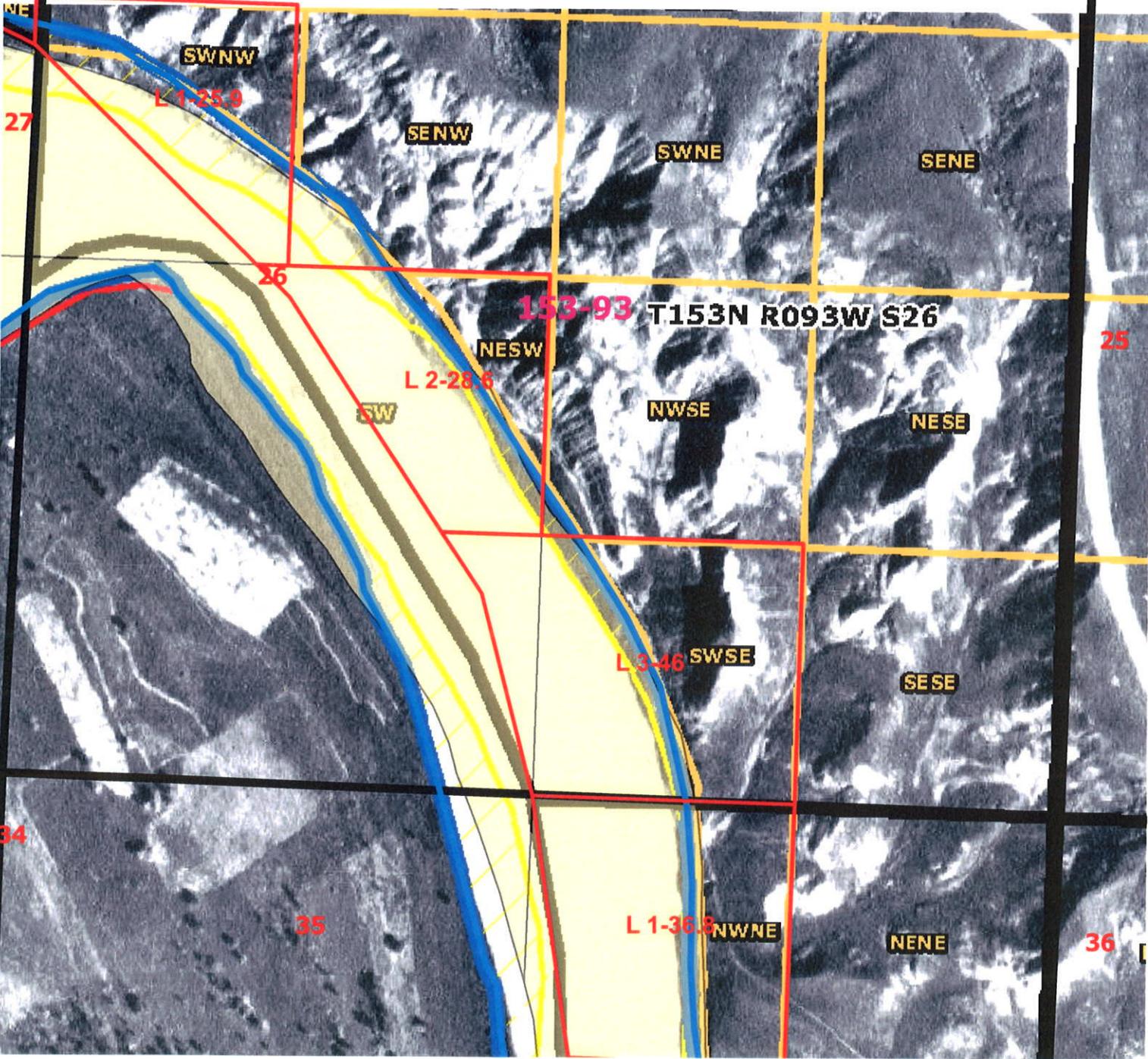
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EXHIBIT G  
**T153N, R93W Section 26**

-  DTL Leased Sovereign Lands
-  PLSS Government Lots
-  Wenck OHWM

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**EXHIBIT H**  
**T153N, R94W Sections 3 and 4;**  
**T154N, R94W Section 34**

-  DTL Leased Sovereign Lands
-  PLSS Government Lots
-  Wenck OHWM

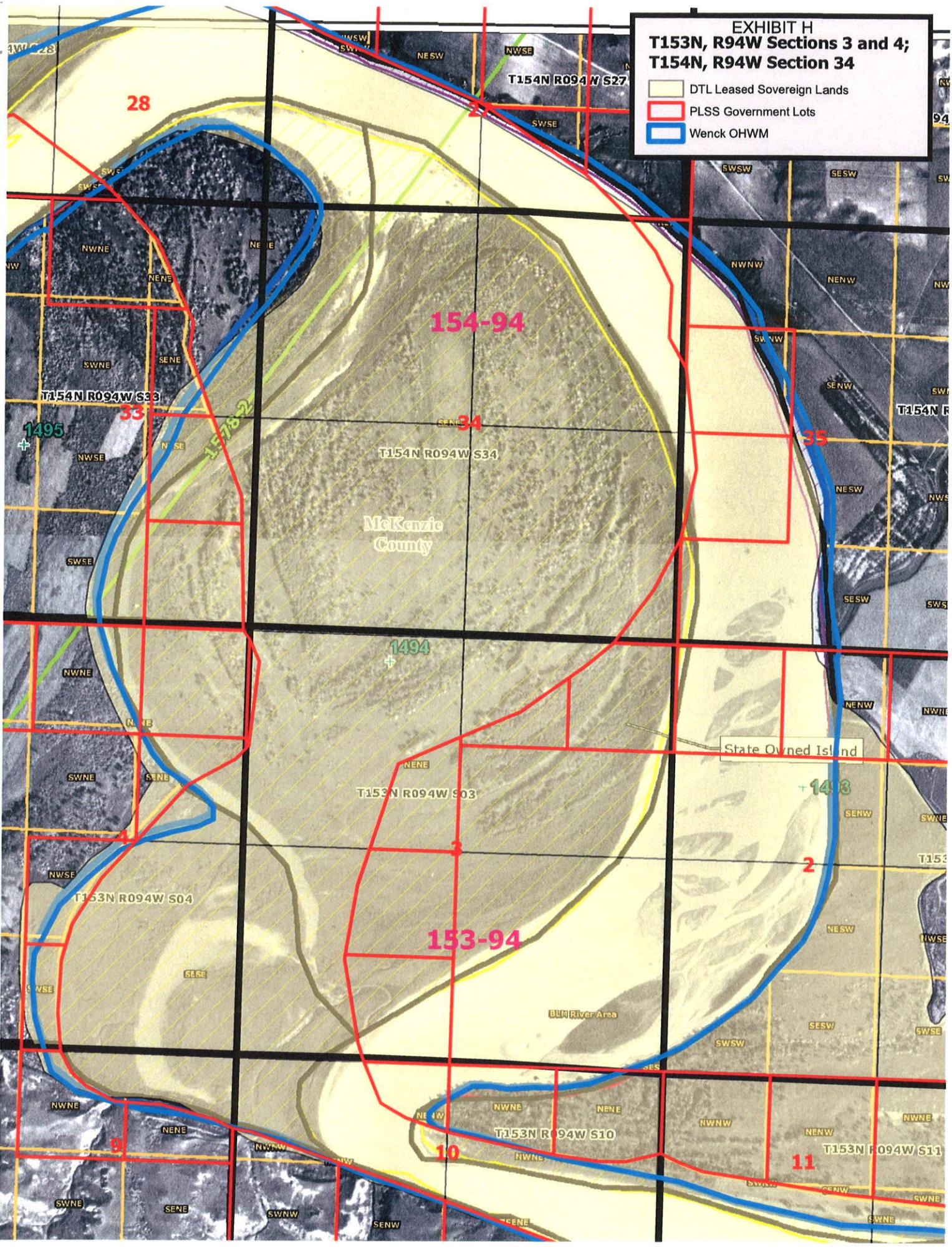


EXHIBIT I  
T153N, R99W Section 36

- DTL Leased Sovereign Lands
- PLSS Government Lots
- Wenck OHWM

