

Interpretation of the Seismic Reflection Survey at Teels Marsh, Mineral County, Nevada

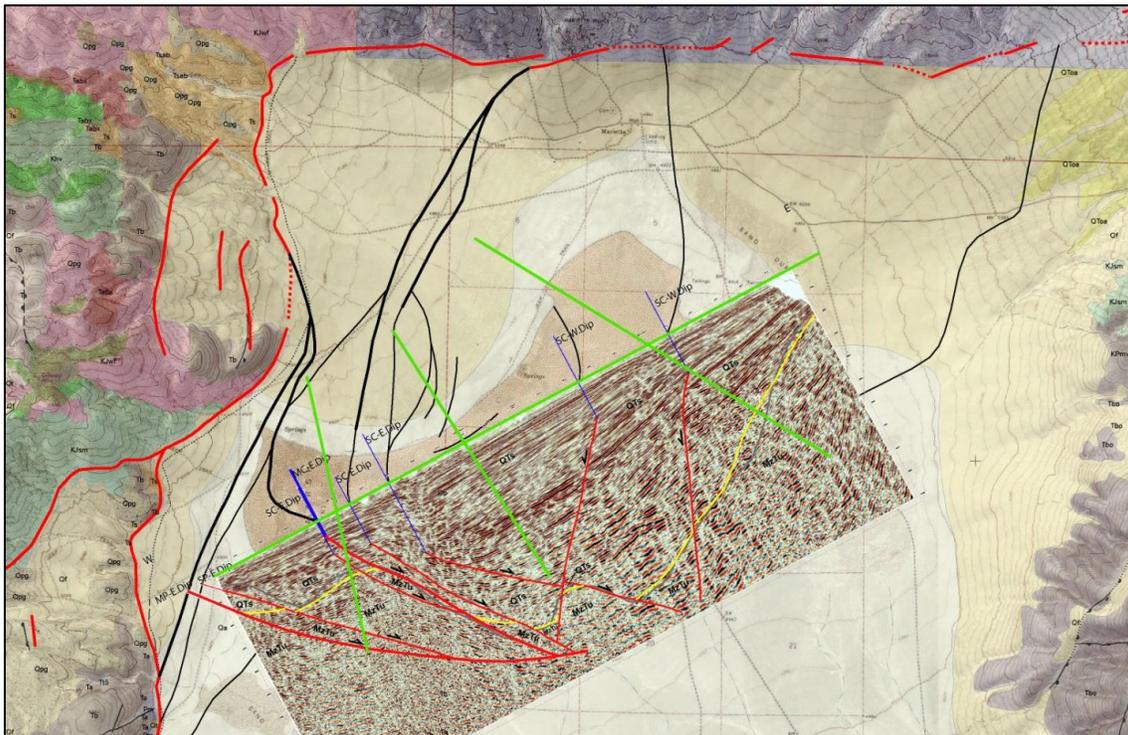
Report prepared for Dajin Resources (US) Corp.

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Longitudinal Seismic Reflection Profile (Line 4) at Teels Marsh, overlain on surface geology and interpreted structure so that the top edge of the seismic section aligns with the surface trace of the seismic line.

SUMMARY

Four seismic reflection lines totaling 19.5 km (12.1 miles) in length were acquired at Teels Marsh in May and June, 2016. After a series of processing steps that included Kirchoff migration and depth conversion, the sections were interpreted for structure and basin depth. The interpretation was constrained in part by a basin-depth model derived from a detailed gravity study.

The seismic interpretations confirm the presence, originally hypothesized in a detailed gravity model, of a deep basin beneath Teels Marsh filled with relatively unconsolidated sediments to depths reaching 2 to 2.5 km (6,500 to 8,200 ft). The basin is bounded by normal faults that accommodated development of a composite northwest-tilted half-graben elongate in a N20E to N30E direction and approximately 7 km (4.3 mi) long (Figures 1a, 1b). Greater displacements along normal faults that form the northwestern margin of the basin compared to the southeastern margin have led to the development of the northwest-tilted half-graben. The half-graben is filled with generally unconsolidated sediments dipping northwesterly to westerly. The dips progressively increase from 0° near the surface to as much as 25° at 2 km (6,560 ft) depth. This is an indication that the main northwest-bounding normal faults are slightly listric (i.e., concave upward) in geometry, and that continued displacement along these faults and tilting of the hanging wall with time has led to steeper dips in older, deeper sediments.

The outer margin of the composite half-graben is delimited by the active, range-bounding Excelsior Mountain fault (Figures 1a, 1b). Together, the sub-basins that comprise the composite half-graben occupy a pull-apart block within a left step in the sinistral strike-slip Excelsior Mountain fault zone. This fault zone comprises one of four major sinistral east-west-striking faults of the Mina Deflection of the Walker Lane (Figure 2).

Basin stratigraphy appears heterogeneous with depth but relatively continuous laterally based on seismic reflections. The reflections are variable in strength with depth but can be traced laterally for significant distances. Because seismic reflections of similar intensity can be produced by several types of sediment interfaces, it is not possible without drilling to identify specific lithologies or marker units in the seismic profiles. It is expected, nonetheless, based on shallow auger-hole observations and analogies with other basins, that basal sediments are composed of interbedded clays, fine clastics, coarse clastics, ash layers, and evaporites. Due to the consistent northwesterly to westerly dip of sediments, the deepest portion of any given sedimentary layer will generally lie northwest of the central axis of the graben, but southeast of the primary bounding graben faults on the northwest.

Introduction

A 2-dimensional reflection seismic survey consisting of four lines with a total length of 19.5 km (12.1 mi) was completed in Teels Marsh by Eagle Exploration Inc. in May and June, 2016 (Appendix A; Schwinkendorf, 2016). Three of the lines crossed the long axis of Teels Marsh at nearly right angles from northwest to southeast, and one followed the long axis of the marsh along an east-northeast trend (Figure 1a). The objectives of the survey were to define the location of bounding faults, identify possible sub-basins and/or fault blocks within the basin, and, to the extent possible, provide constraints on the distribution of subsurface sedimentary layers.

The survey employed explosives as an energy source to optimize the signal in the wet ground conditions of the playa. Source and receiver intervals were 55 feet. Additional details on the survey configuration are provided in Appendix A (Schwinkendorf, 2016).

Columbia Geophysical, LLC (Schwinkendorf, 2016) completed the data processing, which included post-stack time migration and conversion from time to depth sections using the stacking velocity field. Because no independent information on subsurface seismic velocities is available, the estimated depths are approximate, with a possible error of +/- 10 to 15%. A fairly good match between interpreted depths to consolidated rocks, based on the seismic profiles versus estimated depths based on gravity modeling (Wright, 2015), suggests that the assigned seismic velocities and corresponding depth conversions are reasonably accurate. Appendix A (Schwinkendorf, 2016) contains additional information on the seismic processing.

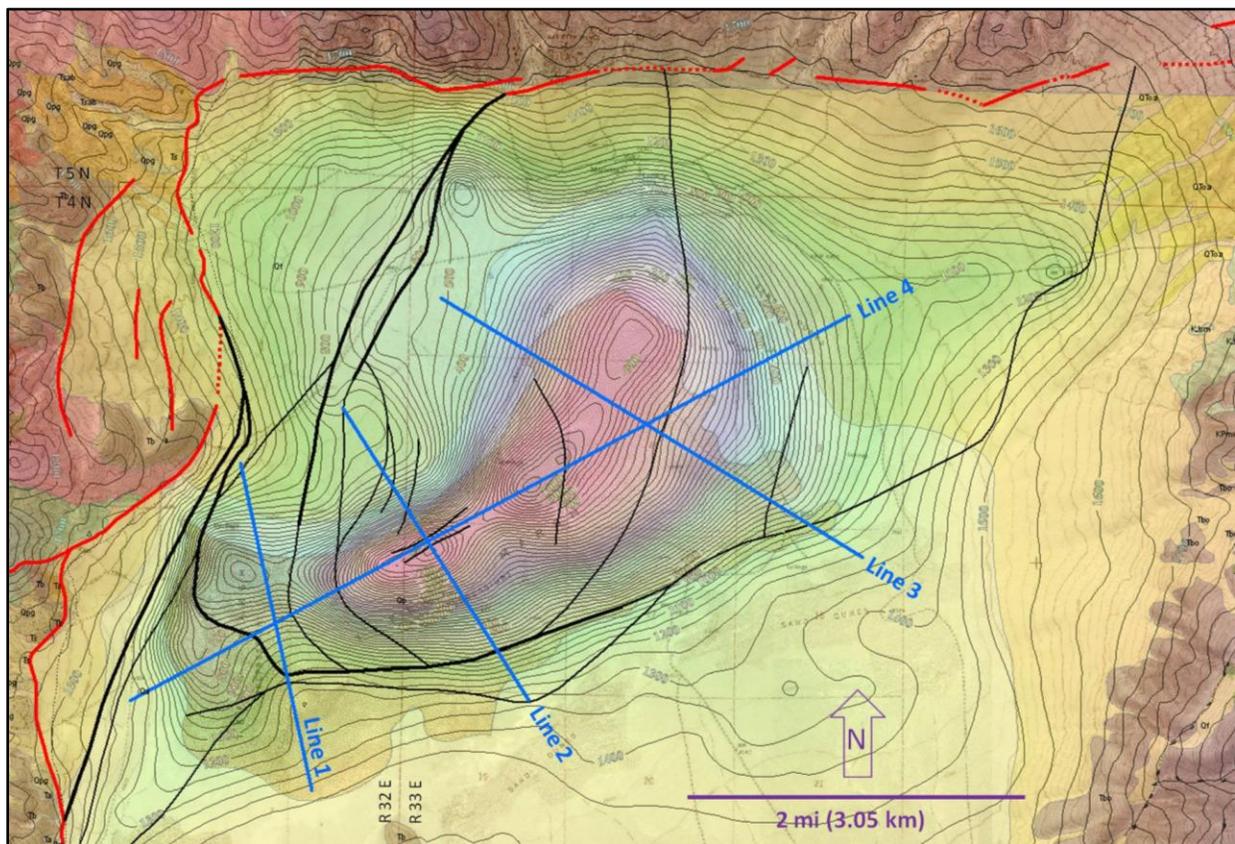


Figure 1a. Plan view of structural model for Teels Marsh based on interpretation of seismic reflection profiles and basin-removed topographic elevation model. Blue lines are seismic reflection lines. Black lines are interpreted faults, and red lines are faults of the Excelsior Mountain fault zone from Wesnousky (2005). Thin black lines and background color-shading represent elevation of the basin-removed topographic model of Wright (2015), with contours labeled in elevation above sea level in meters. See Figure 1b for distinction of inner and outer portions of the composite half-graben.

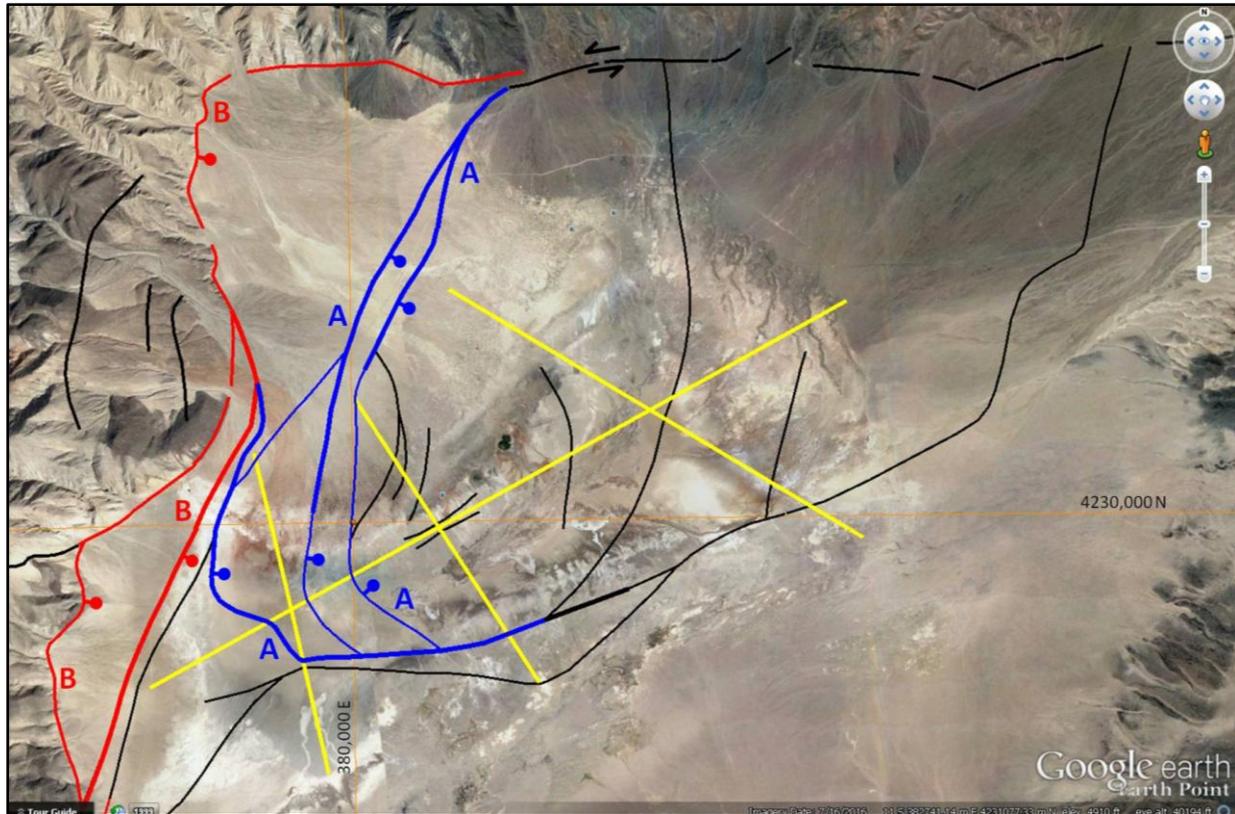


Figure 1b. Google Earth-view of structural model for Teels Marsh. Blue lines (labeled “A”) are principal normal faults associated with the inner half-graben and red lines (labeled “B”) are principal normal faults associated with the outer half-graben. The “blue” faults of the inner graben were interpreted from the seismic survey. Most of the “red” faults of the outer graben are part of the active Excelsior Mountain fault zone mapped by Wesnousky (2005).

Interpretation Process and Results

Output products from the seismic processing include digital SEG-Y files and high-resolution pdf files. The pdf files of the migrated, depth-converted profiles were loaded into Adobe Illustrator for interpretation. To help constrain the interpretation, traces of the “depth-to-Tertiary volcanic basement” model (i.e., basin-removed topography) derived from a detailed gravity survey (Wright, 2015) were added to each seismic section. The interpretation was also guided by a preliminary structural model (Coolbaugh, 2016) and by familiarity of the authors with structural settings and active tectonics in the Walker Lane and elsewhere in Nevada (cf. Faults and Hinz, 2015; Faults et al., 2011; Coolbaugh et al., 2013). Faults were identified on each profile and then compared and correlated to those of the other profiles to ensure consistency and build an overall structural model. The interpreted profiles are shown in Figures 3-6, and plan-views of the structural model are illustrated in Figures 1a and 1b.

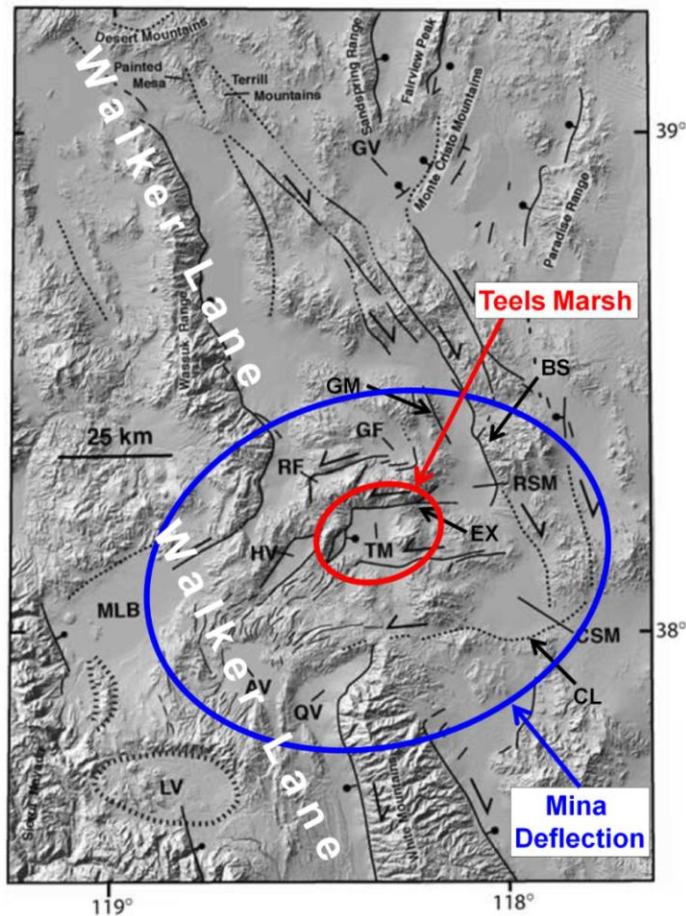


Figure 2. Teels Marsh is located in the Mina Deflection, which is a broad right-step in the northwest-striking Walker Lane zone of dextral strike-slip faults in west-central Nevada. Within the Mina Deflection, a series of EW-striking, left-lateral faults transfer motion eastward from strike-slip faults in the southern Walker Lane to strike-slip faults in the north-central Walker Lane (Oldow et al., 2008; Faults and Henry, 2008). TM = Teels Marsh, RSM = Rhodes Salt Marsh, CSM = Columbus Salt Marsh, GF = Garfield Flat, HV = Huntoon Valley, RF = Rattlesnake Flat, MLB = Mono Lake Basin, LV = Long Valley caldera, AV = Adobe Valley, QV = Queen Valley, GV = Gabbs Valley, EX = Excelsior Mountain fault, GM = Gumdrop Hills fault, CL = Coaldale fault, BS = Benton Springs fault. Figure adapted from Wesnousky (2005).

Structural Interpretation

The structural model compiled from the seismic reflection profiles depicts a composite half-graben structure beneath Teels Marsh (Figures 1a, 1b), with an interior graben similar in size (approximately 6.5 to 7 km (4.0 to 4.3 mi) long and up to 2.5 km (8,200 ft) deep) to that predicted by the preliminary structural model (Coolbaugh, 2016) and model of basin-removed topography (Wright, 2015), both of which were based primarily on the detailed gravity survey. However, the seismic profiles provide additional information on the location and style of faulting that led to development of the half-grabens and reveal that the interior graben is centered somewhat to the northwest of the location predicted by

the gravity data. This shift in location may be due to a distortion in the basin-removed topographic model caused by the presence of relatively high-density mafic volcanic rocks in the sub-surface in the west-central portion of the valley. This was hypothesized by Wright (2015) based on magnetic anomalies and outcrops of basalt on the margins of the basin. Alternatively, the shift may be caused by the geometry of the bounding faults, which project beneath the current primary depocenter of the basin at a shallower depth on the northwest side than on the more distal parts of the basin to the east and southeast.

The seismic profiles reveal a persistent west to northwest dip in sediments that comprise basin fill (Figures 3-6). A strong reflection discontinuity on the northwest margin of these sediments likely corresponds to the principal fault(s) (faults labeled "A" in Figure 1b) that define the northwest margin of a well-developed half-graben. Progressively increasing sediment dips with depth demonstrate that the principal bounding faults on the northwest are somewhat listric in character (i.e., concave upward geometries). The decrease in tilts up section also indicates that normal motion along these primary faults was concurrent with sediment deposition in the basin.

In detail, the half-grabens are composed of an interior deep basin approximately 6 km long located near the center of the valley, adjacent to a shallower fault-bounded basin to the west and north (Figure 1b). Faults defining the boundary between these two sub-basins on seismic section 4 appear to die out upward before reaching the surface (Figure 6), suggesting that the eastern graben is older than the western graben, and that faulting has shifted westward with time. A westward shift is consistent with evidence of Holocene motion along the Excelsior Mountain fault, which defines the outermost western and northern margins of the western half-graben (Wesnousky, 2005). This is consistent with the presence of subsurface geothermal activity adjacent to the Excelsior Mountain fault along the western range front (Coolbaugh et al., 2006; Zehner et al., 2012). In a more regional context, the half-grabens in Teels Marsh occupy a pull-apart block formed by a large left-step in the sinistral strike-slip Excelsior Mountain fault. The Excelsior Mountain fault is one of four sinistral, east-west-striking faults that define the right-stepping Mina Deflection within the Walker Lane (Figure 2; Oldow et al., 2008; Faulds and Henry, 2008), a zone of dextral strike-slip faults bounding the Great Basin to the east and the Sierra Nevada to the west.

Additional antithetic and synthetic faults with lesser displacements occur along the southeastern margin of the half-grabens and within the grabens themselves. Some of these are marked on the seismic reflection profiles and plan map (Figures 1, 3-6), and additional small faults could be interpreted from the seismic data, or could be present without leaving definitive evidence on the profiles. Lesser motion on minor antithetic and synthetic faults could have subdivided the basin into smaller fault blocks. These minor faults could either serve as barriers to fluid flow along individual sedimentary aquifers, or serve as local conduits for fluid flow between fault blocks.

Stratigraphy

Long, continuous reflections observed in the interior of the half-grabens in the four seismic reflection profiles indicate significant lateral continuity of sedimentary units that comprise basin fill. Seismic reflection intensities are more variable in a vertical direction, which is consistent with an expected intercalation of clays, silts, sands, ash beds, evaporites, and possible conglomerates and perhaps some late Miocene to Quaternary volcanic flows. Without drilling, it is not possible to unequivocally determine the composition of specific sedimentary beds, the contacts of which have produced reflections in the seismic profiles, as demonstrated by a comparison between drill logs and seismic

profiles at Clayton Valley (Spanjers, 2015). Nonetheless, the seismic sections reveal that the deepest part of each sedimentary unit generally lies to the northwest of the central axis of the half-graben due to the pervasive northwesterly to westerly dip of bedding. The deeper portions of possible aquifers form potential targets, where relatively dense lithium-enriched brines could concentrate, as has occurred at Clayton Valley (Zampirro, 2004).

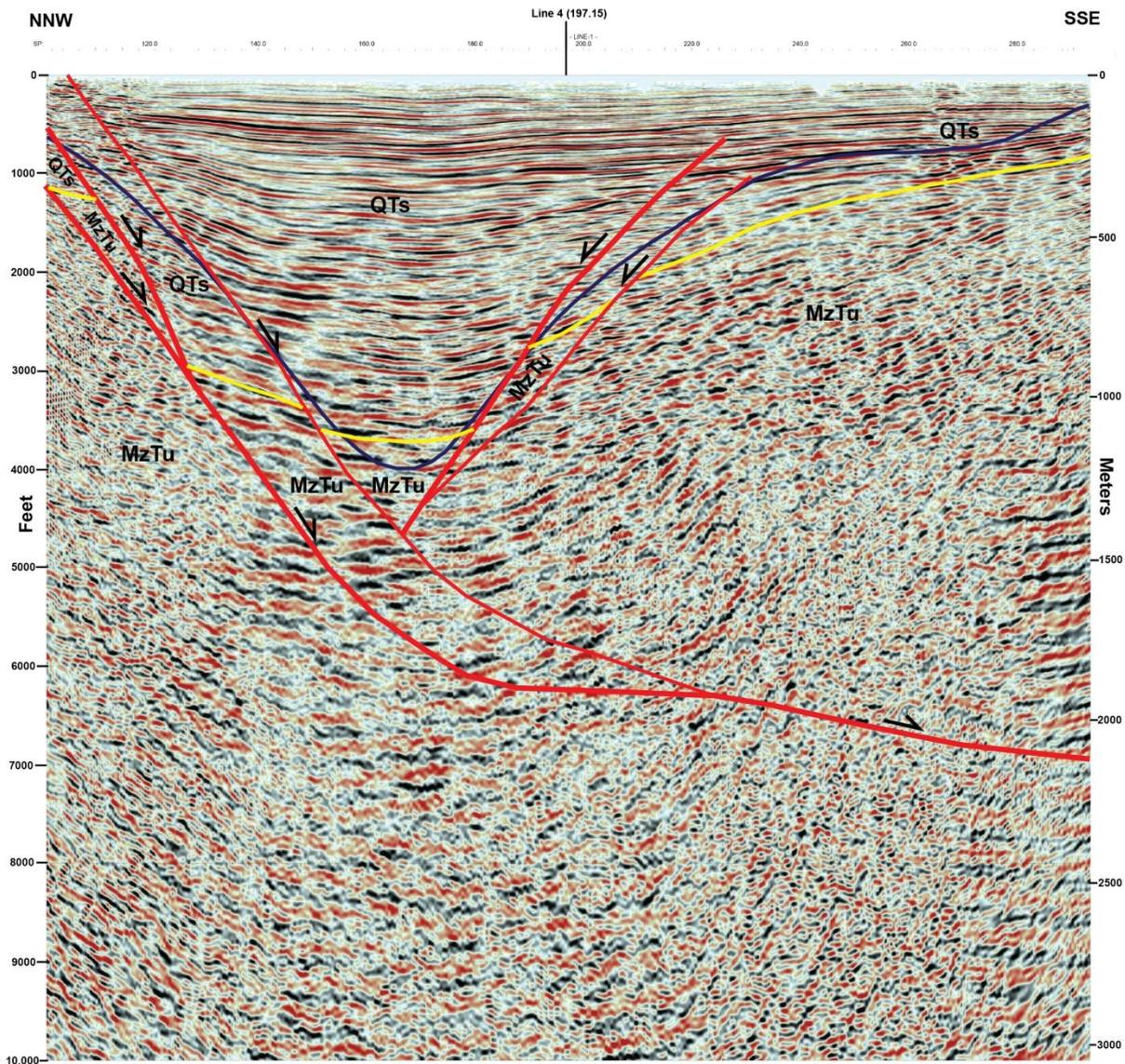


Figure 3. Seismic reflection profile, line 1, looking northeast. Red lines are interpreted faults, and the yellow line is the interpreted contact between basin-fill deposits above and rocks below. Gray line is the basin fill-rock contact from the basin-removed topographic elevation model of Wright (2015). QTs = Quaternary and Tertiary sediments, MzTu = undivided Mesozoic and Tertiary rocks. Vertical to horizontal scale is 1:1.

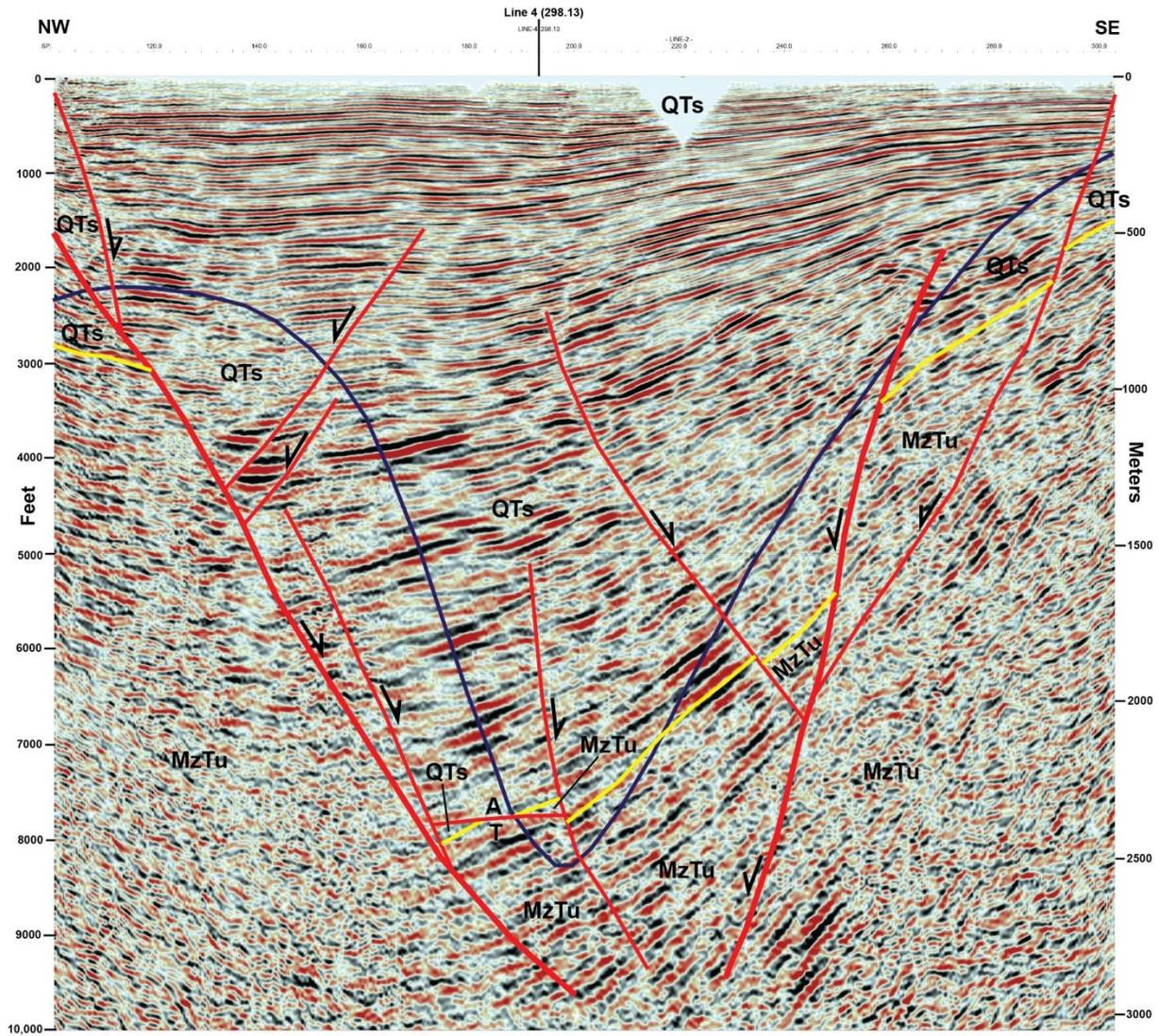


Figure 4. Seismic reflection profile, line 2, looking northeast. Red lines are interpreted faults, and the yellow line is the interpreted contact between basin-fill deposits above and rocks below. Gray line is the basin fill-rock contact from the basin-removed topographic elevation model of Wright (2015). QTs = Quaternary and Tertiary sediments, MzTu = undivided Mesozoic and Tertiary rocks. A = away, T = towards. Vertical to horizontal scale is 1:1.

Teels Marsh Seismic Interpretation
Coolbaugh and Faults, Oct. 31, 2016

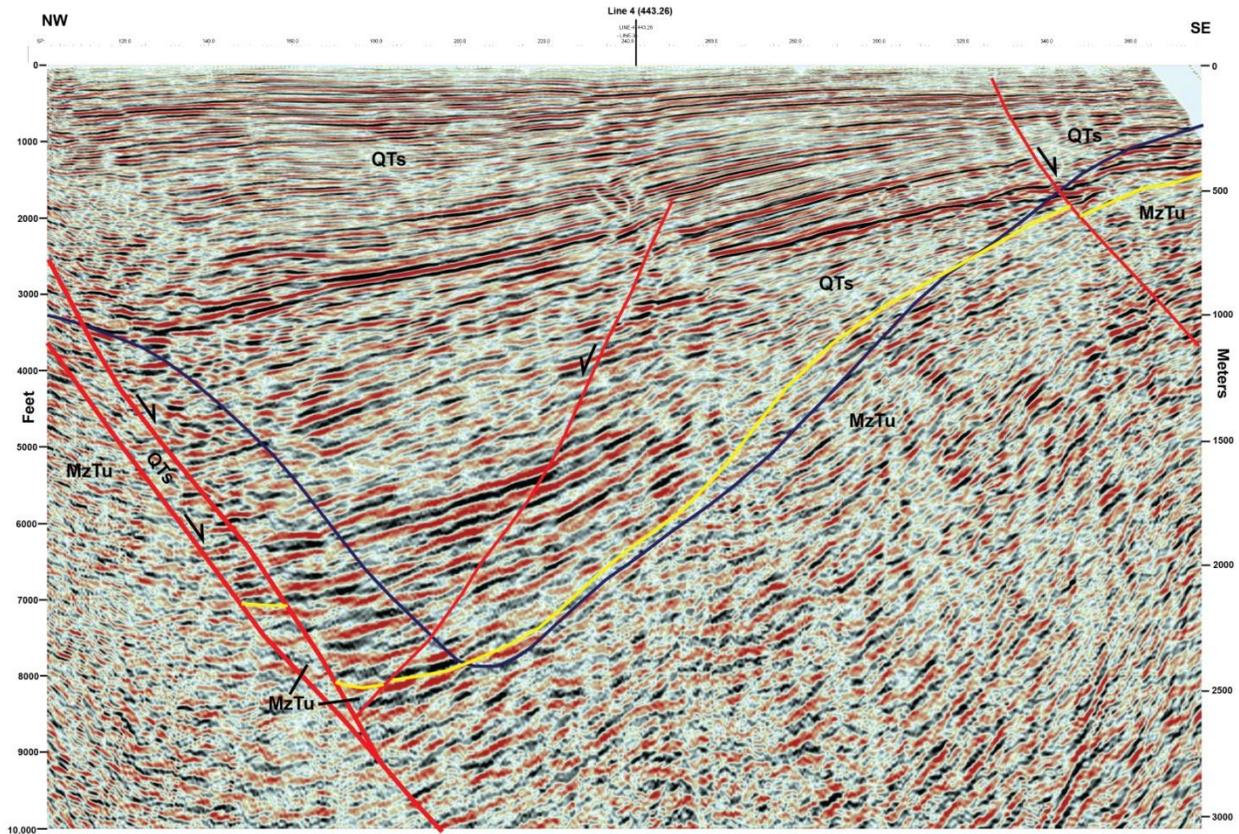


Figure 5. Seismic reflection profile, line 3, looking northeast. Red lines are interpreted faults, and the yellow line is the interpreted contact between basin-fill deposits above and rocks below. Gray line is the basin fill-rock contact from the basin-removed topographic elevation model of Wright (2015). QTs = Quaternary and Tertiary sediments, MzTu = undivided Mesozoic and Tertiary rocks. Labels to left and right of figure are depth measured in thousand-foot-intervals, with lowest depth of 10,000 feet (3,048 meters). Vertical to horizontal scale is 1:1.

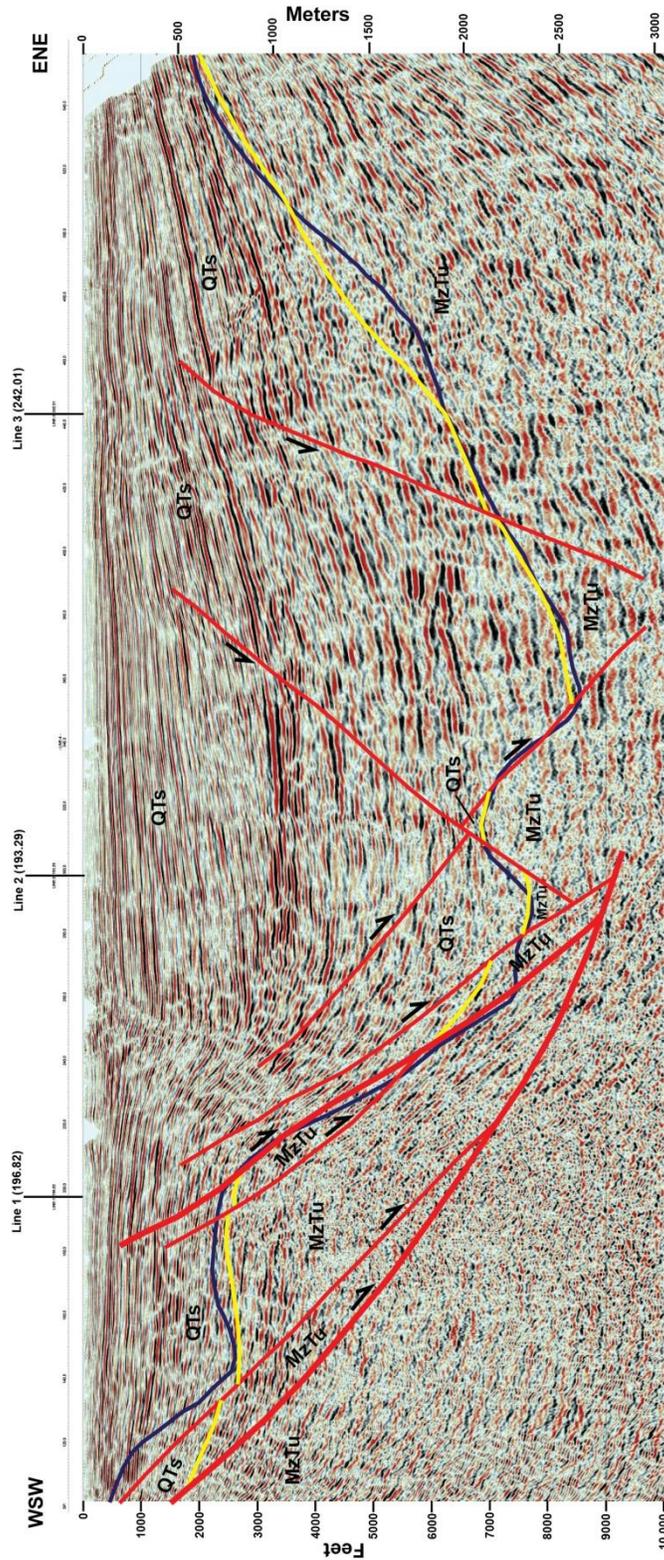


Figure 6. Seismic reflection profile, line 4, looking northwest. See figure 5 for explanation of symbols and labels. Maximum depth is 10,000 feet (3,048 meters). Vertical to horizontal scale is 1:1

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Appendix A

Data Processing Report

2D Seismic Reflection Survey

Teels Marsh, Mineral County, Nevada

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September 28, 2016

General Description:

A two-dimensional seismic reflection survey, consisting of 4 seismic lines totaling 12.1 miles in length, was acquired in the Teels Marsh Area located in Mineral County, Nevada for Dajin Resources Corp. in May and June 2016. Eagle Exploration of Traverse City, Michigan was chosen to acquire the 2D survey program. Due to the nature of the soft surface and marsh conditions of Teels Marsh, explosives were used as the energy source. Light weight shot hole drills were used to minimize the damage to the marsh although intermittent rain storms caused occasional challenges to crew travel on the muddy playa surface for both source vehicles as well as recording crew movement. Columbia Geophysical, LLC of Centennial, Colorado provided acquisition parameter analysis and consulting services during field testing, as well as data processing testing, analysis, and final data processing services.

Purpose/Objective:

Data collected from the seismic survey was used to define stratigraphy in the near surface formations as well as imaging of deeper formations. The seismic data was integrated with existing gravity data as well as other geologic information. Resolution of fault locations, basin depths, and overall basin boundaries were imaged very successfully with this survey.

Field Testing:

Field-testing to determine field production parameters was performed prior to actual production and results were analyzed by Columbia Geophysical. Columbia Geophysical, Eagle Exploration, and Dajin Resources Corp. agreed upon final field acquisition parameters.

Field Tests Performed:

- 1) On line 1 (westernmost northwest to southeast line, Figure 1), two test locations were chosen which differed in terms of surface conditions. One location was in the middle of the line in the flat playa marsh area, while the other was located toward the southeast end of the line in a sandier, dry part of the line.

- 2) At each location, 4 holes were drilled with the following depths and charge sizes.
 - a) 1 Hole 10 feet deep / 1/2 lb charge
 - b) 2 Hole pattern, each 10 feet deep / each with 1/2 lb charge (shot at same time)
 - c) 1 Hole 20 feet deep / 1 lb charge

These recorded data shots were then compared and analyzed both for frequency content as well as depth penetration. Parameters for production shooting were then determined from these source tests. It was found that the single 10 foot hole containing the 1/2 lb charge was quite comparable to both the two-hole pattern with 1/2 lb in each hole and the single 20 foot hole with a 1 lb charge. The single 10 foot hole source with 1/2 lb of dynamite was chosen and eventually saved extra drilling costs as well as limiting surface damage from the drilling of extra holes.

Data Acquisition Parameters:

Recording System...ISeis Sigma	Record Length.....3 seconds
Source Size.....1/2 lb Dynamite	Sample Interval.....1 millisecond
Source Interval.....55 foot interval	Receiver Interval.....55 foot interval
Source Type.....Dynamite	Receiver Type.....GeoSpace-One Detector
Source Depth.....10 foot hole	Receiver Array.....1 - 10 hz geophone per station

2D Line Information: (see Figure 1 for Teels Marsh line and station locations)

Teels Marsh Line / TM-16-1....Stations 101-296, total length 2.00 miles
Teels Marsh Line / TM-16-2....Stations 101-303, total length 2.11 miles
Teels Marsh Line / TM-16-3....Stations 101-390, total length 3.02 miles
Teels Marsh Line / TM-16-4....Stations 101-556, total length 4.97 miles

Seismic Data Processing Sequence:

The following data processing sequence was used for the Teels Marsh project. This flow was a result of process testing results and client consultation at the beginning and during actual data processing. PROMAX seismic data processing software and IBM computers were used to process the data. Renegade Refraction software was used for computation and correction of near surface weathering corrections.

- 1) Format Conversion from Field Format to Segy
- 2) Geometry Definition & Application
- 3) Editing of Trace Data
- 4) Refraction Statics Calculations
Datum: 5,000 Feet Vr: 6,000 Feet/Second
- 5) Gain Recovery
- 6) Spherical Divergence
- 7) Frequency & Amplitude Analysis
- 8) Surface Consistent Deconvolution (Testing)
- 9) Zero Phase Spectral Whitening
- 10) Trace Balance
- 11) Statics to Floating Datum
- 12) CDP Sort
- 13) Interactive Velocity Analysis
- 14) Mute Analysis for Initial Mute
- 15) Brute Stack (Datum vs Refract)
- 16) Surface Consistent Autostatics
- 17) Interactive Velocity Analysis
- 18) Surface Consistent Autostatics
- 19) Q.C. Gathers & Shot Records
- 20) Normal Moveout Corrections
- 21) Final Mute
- 22) Statics Applied to Flat Datum
- 23) CDP Trim Statics
- 24) CDP Stack
- 25) Spectral Analysis and Filter Analysis
- 26) Spectral Whitening
- 27) Bandpass Filter
- 28) FX Noise Attenuation
- 29) Time Variant Scaling
- 30) Kirchoff Migration
- 31) Depth Conversion (Convert from Time to Depth)

During data acquisition and processing, daily contact with the crew was maintained as data quality and field conditions were monitored to continue to maintain a high degree of data quality. Field records were sent to check quality of the data. Transfer of production data was done both by electronic transfer as well as USB disk. Screen capture images were sent to the client of intermediate processing stages and discussions of the data followed thus keeping everyone involved in the various stages of data processing.

Deliverables:

Included in the deliverables were Seg-Y files of:

- a) Final Filtered Time Stack
- b) Final Filtered Depth Stack (Converted from time to depth)
- c) Final Filtered Migrated Stack
- d) Final Filtered Depth Migrated Stack (Converted from time to depth)

PDF plots of the above stacks and migrations were also delivered to the client. Intermediate processing stages were shared with the client by emailed screen images.

Conclusions:

The quality of the final migrated data volumes was very good and the imaging was quite sufficient to outline general basin boundaries, fault systems, and stratigraphic features of both shallow as well as deeper units. The overall quality of the Teels Marsh Seismic Survey was considered to be very high.

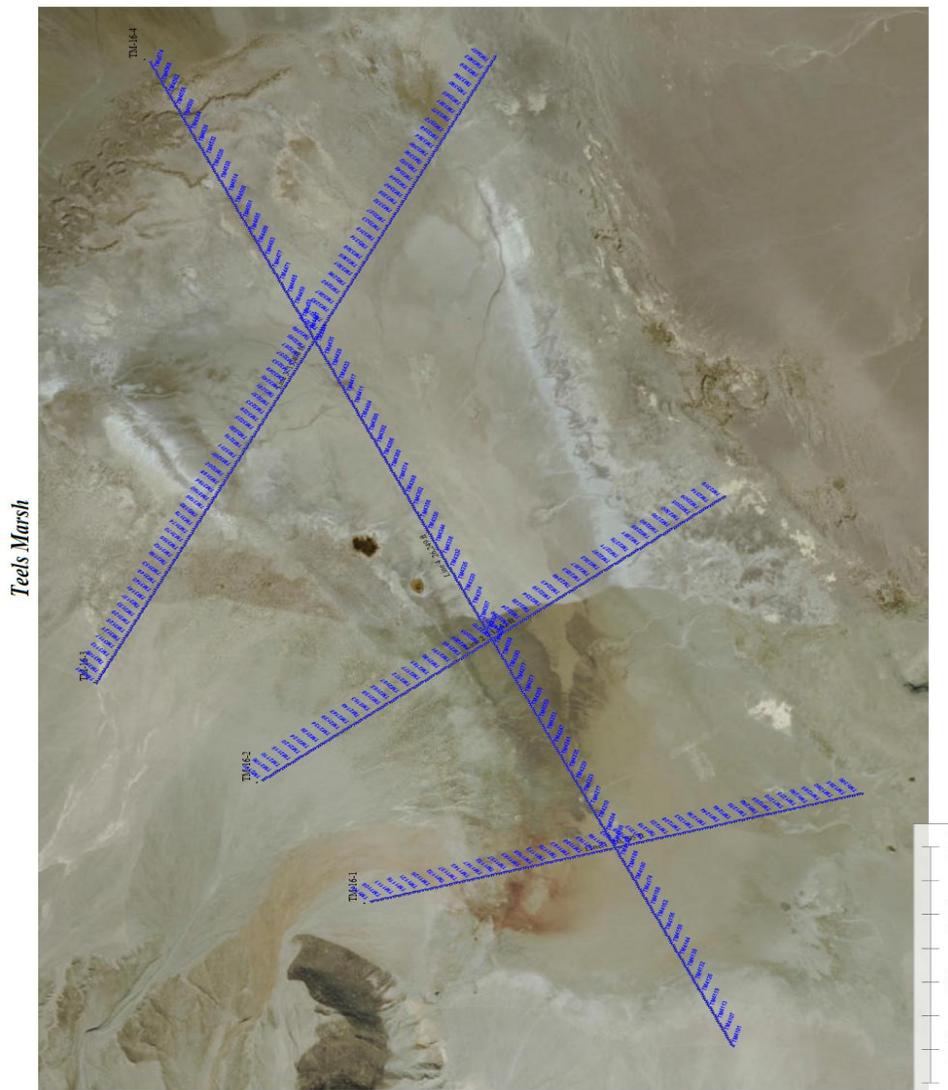


Figure 1. Location of seismic lines at Teels Marsh relative to orthophotography, with approximate scale. North is towards left. The three NW-SE lines, from west to east, are lines 1, 2, and 3. The longer SW-NE line is line 4.