

HISTORICAL RESOURCE OVERVIEW

Shepard Industrial ASP

This document contains sensitive information about Historic Resources that are protected under provisions of the *Alberta Historical Resources Act*. This information is to be used to assist in planning the proposed project only. It is not to be disseminated, and no copies of this document are to be made without written permission of Historic Resources Management Branch, Alberta Culture and Tourism.



Historical Services Ltd.

Bison Historical Services Ltd.
Archaeological and Historical Consultants
2, 215 - 36 Avenue NE, Calgary, AB T2E 2L4
Phone: 403-283-8974, Fax: 403-270-0575
www.bisonhistorical.com

HISTORICAL RESOURCE OVERVIEW

Shepard Industrial ASP

**HRO 20-004
Bison No. 2008-0035**

Prepared for

Glenn Makwich

Idea Group Inc.
4034 - 4 Street SE
Calgary, Alberta
T2G 2W3

on behalf of

Shawn Belecki

Shepard Development Corp.
5720 - 4 Street SE
Calgary, Alberta
T2H 1K7

By

Stephen C. Wagner, M.A. RPA

Bison Historical Services Ltd.
2, 215 - 36 Avenue NE
Calgary, Alberta
T2E 2L4

28 August 2020

EXECUTIVE SUMMARY

The proposed Shepard Industrial ASP is located in Sections 3, 4, 9, 10, 15, and 16-023-28 W4M, southeast of the city of Calgary. The proposed development is an area structure plan. The construction start time has not been determined. The proposed development will have an approximate land surface impact of 773 ha (1910 ac).

There are no previously recorded historical resources located within the proposed development footprint. A cluster of structures are present at the same location where some are visible in 1950 aerial imagery, suggesting a likelihood of historic structures at this location.

Based on the potential for historic structures, a Historical Resources Impact Assessment (HRIA) is recommended for this project.

The recommendations in this Historical Resource Overview (HRO) document are not binding, nor do they reflect the completion of a regulatory review process. This HRO document will support the Historic Resources Application sent to the Historic Resources Management Branch (HRMB) of Alberta Culture, Multiculturalism and Status of Women, made by Bison Historical Services Ltd., on behalf of Idea Group Inc. Either specific regulatory requirements or Historical Resources Act approval will then be issued by the HRMB subsequent to their review of this HRO document.

TABLE OF CONTENTS

EXECUTIVE SUMMARY	i
TABLE OF CONTENTS	ii
INTRODUCTION	1
Historical Resources Regulatory Process	1
Historical Resources Overview (HRO) Methodology.	2
RESULTS	4
Project Description	4
Landscape and Environmental Information	4
Ecoregion	4
Cultural Background	5
Historical Resource Type Descriptions.	8
Archaeological Resources	8
Historic Structures.	9
Palaeontological Resources	9
Aboriginal Traditional Use Sites.	10
Previous Historical Resource Investigations	10
Project Setting	11
Historical Resources within or near the proposed development	11
Archaeology.	12
Historic Structures.	12
Palaeontology.	13
Traditional Use Sites	13
Summary of Historical Resource Site Potential	14
RECOMMENDATIONS	15
REFERENCES CITED	16
APPENDIX A: PROJECT PLANS.	18
APPENDIX B: PROJECT MAPS	20
APPENDIX C: BORDEN BLOCK MAPS	25
APPENDIX D: HISTORIC AERIAL IMAGERY.	28

INTRODUCTION

The proposed Shepard Industrial ASP is located southeast of the city of Calgary. The proposed development is an area structure plan. The construction start time has not yet been determined. The proposed development will have an approximate land surface impact of 773 ha (1910 ac).

Bison Historical Services Ltd. is providing historical resource consulting services for the Shepard Industrial ASP. The following is a preliminary desktop review of all known historical resources (archaeological sites and historic structures), as well as desktop assessment of the historical resource potential (i.e., potential for the presence of previously unrecorded historical resources) of the lands that the project area is located within. This report also contains recommendations for the management of historical resources throughout the project area.

Historical Resources Regulatory Process

The Historical Resources Act of Alberta provides legislation and guidelines for the preservation and study of Alberta's historical resources. In general, developments must apply for and obtain Historical Resources Act approval from the HRMB before proceeding. In the event that a historical resource will be impacted, or if a project is in a high potential area, the developer may be required to conduct an HRIA. In cases where a historical resource cannot be avoided, further studies may be required to mitigate the proposed impacts. Through the HRIA process, Historical Resources Act approval can be granted by the HRMB.

As a first step toward obtaining Historical Resources Act approval for the Shepard Industrial ASP, this document will analyze the potential archaeological and historical impacts associated with the proposed project.

The HRMB divides historical resources into four categories: archaeological sites (buried artifacts and other evidence of past human life), historic buildings and other structures, palaeontological sites (fossilized remains of organisms), and aboriginal traditional use sites (HRMB 2017).

Details of known historical resource sites are recorded in Archaeological Site Inventory Data forms, Heritage Survey Site forms, and final project reports, all of which are kept on file with the HRMB.

The significance of historical resources is denoted by a ranked HRV from 1 to 5 and defined in Table 1 (HRMB 2020). Historical Resources of limited or no significance are assigned an HRV of zero (HRV-0). Suffix letters “a”, “c”, “gl”, “h”, and “p” are used following the numerical HRV value to indicate whether the notation refers to archaeological, cultural, geological, historical, or palaeontological resources respectively (e.g., HRV-4a denotes an HRV-4 archaeological site). All known archaeological sites are also listed on the Master List of Borden Numbers, copies of which are made available only to archaeologists professionally recognized by the HRMB.

HRV Notation	Definition
1	World Heritage Sites & historic resources owned and protected by the Government of Alberta
2	Municipal or Registered Historic Resource
3	Significant historic resource that will likely require avoidance
4	A historic resource that will likely require avoidance
5	An area that is believed to contain a historic resource

Table 1: Historic Resource Value definitions (HRMB 2020).

Historical Resources Overview (HRO) Methodology

The purpose of this HRO document is to provide a general overview of historical resources located in the vicinity of the project area and to assess the potential impact that the proposed project poses to known and/or previously unrecorded historical resources. This document will also provide a recommendation for either (a) Historical Resources Act approval, or (b) an HRIA based on the potential for encountering or impacting intact significant historical resources.

The methodology of this document will be a comprehensive desktop assessment of the project area that will include known archaeological sites, historic sites, previous

permitted work in the area, and topography. Research will include, but will not be limited to, the examination and the use of the Listing of Historic Resources (public and restricted April 2020 Editions), Borden maps, Archaeological Site Inventory Data forms, Inventory Site forms (for historic sites), topographical maps, geological maps, GIS information, and aerial photography.

RESULTS

This section presents an overview of the environmental and cultural historical context for the region in which the proposed project footprint is located. Additionally, specific information regarding the environment, historical resources, and previous historical research in the immediate vicinity of the proposed project area will be presented and evaluated. Finally, specific historical recommendations in regard to the proposed development will be made.

Project Description

The project consists of an area structure plan for an area immediately southeast of the city of Calgary. The footprint extends on both sides of Township Road 232 to the CP Rail tracks in the south and an abandoned rail bed to the north, from Range Road 284 eastward for approximately 3.25 km. The plan involves approximately 773 ha (1910 ac) area.

Landscape and Environmental Information

Ecoregion

The proposed project lies within the Grassland Natural Region of Alberta that occurs across the southeast of the province, extending from the Alberta-Montana border to north of the Red Deer River, and from the southern foothills to the Alberta-Saskatchewan border (NRC 2006). The Grassland merges into the Parkland Natural Region to the north, and into the Montane subregion of the Rocky Mountain Natural Region to the west. Large portions of the Grassland are intensively cultivated, with as much as 85% of the land surface presently farmed in some areas. In general, the climate of the Grassland is marked by long, warm, and dry summers, and mild winters punctuated by a high incidence of chinooks .

Only one percent of the subregion is covered by open water. The St. Mary, Oldman, and Bow Rivers are the major watercourses. Wetlands are mostly ephemeral, with few permanent marshes (NRC 2006). Orthic Dark Brown Chernozems are the

typical soil type associated with the Grassland Natural Region.

Native vegetation is restricted to peripheral areas in this heavily cultivated region, with the exception being in the southern foothills, which are comparatively undisturbed. The majority of contiguous native vegetation is now found along creeks, river valleys and coulees (Strong and Leggat 1992). Native plains rough fescue and bluebunch fescue grasslands can be dominant at higher elevations. Needle-and-thread, northern wheatgrass, sand grass, and June grass are typical native vegetation on dry, sandy sites, while blue grama grass, needle grasses and northern wheatgrass are typical of moister areas (NRC 2006).

The Grassland is host to a number of distinct wildlife communities, most diverse near permanent standing water and along rivers and smaller streams. The Richardson's ground squirrel is a key species, both as a food source for predators such as the ferruginous hawk and American badger, and for its burrows, used by animals such as burrowing owls, insects, amphibians, and snakes. Wetlands draw species such as the Canada goose, along with a variety of ducks and shorebirds. Rivers and smaller streams are also home to populations of American beaver and muskrat, while mammals such as the deer mouse, Nuttall's cottontail, mule deer, and white-tailed deer favor the tall shrub and woodland communities; the pronghorn is also present in warmer, drier areas (NRC 2006).

Absent in the Grassland today is the plains bison (*Bison bison bison*), historically the main source of sustenance and raw materials for many First Nations peoples, but eliminated by hunting at the end of the nineteenth century. Their former presence helped shape the development of grassland ecology. The herds summered in mixedgrass areas, while in winter they moved to the foothills and parklands, where food and shelter were more abundant (LaForge 2004; Peck 2004).

Cultural Background

First Nations peoples have occupied Southern Alberta for more than 10,000 years. Wormington and Forbis (1965), Reeves (1969), and Vickers (1986) have detailed in broad strokes the changes associated with this continuum. Peck (2011)

has more recently further refined the culture history of the province by examining projectile point styles in association with absolute dating of sites. The major cultural periods (Early, Middle, and Late Precontact followed by the Protohistoric) are largely defined on the basis of technology and style of projectile points (Table 2).

The first inhabitants of North America are associated with the hunting of the mammoth, but bison were also taken extensively. Fluted projectile points, commonly associated with the beginning of the Early Precontact Period are known in Alberta, but excavated sites are rare. Changes in style to lanceolate and stemmed point types suggest possible cultural shifts. This period drew to a close around 8500 to 8000 BP (before present).

While the Early Precontact Period was characterized by fluted, and then stemmed points used with spears, the Middle Precontact Period saw the appearance of notched forms of projectile points associated with the introduction of the atlatl (dart-thrower). It began in Alberta with the appearance of a variety of styles beginning about 5000 BP.

The introduction of the bow and arrow and the first appearance of ceramics in Alberta mark the beginning of the Late Precontact Period at approximately 1500 BP.

The appearance of trade goods and horse bones in the archaeological record marks the shift to the subsequent and short-lived Protohistoric Period. It lasted for just over a century, beginning about 200 BP (AD 1750), and ending with the establishment of permanent European settlements.

Alberta's Historic record spans the last two and a half centuries and began with the visit of Anthony Henday in 1754. Other early Europeans in Alberta included Alexander MacKenzie from 1789–1793, David Thompson from 1786–1808, Peter Fidler from 1792–1793, and John Palliser who delimited the western Canada-United States boundary between 1857 and 1860 (Spry 1962). In 1871, the Canadian government began construction of a transcontinental railway. The North West Mounted Police were established in 1873, followed in 1874 by the establishment of Fort Macleod. Treaties were soon signed with the major First Nations groups inhabiting Alberta, including Treaty No. 6 in 1876, Treaty No. 7 in 1877, and Treaty No. 8 in 1899.

Period	Cultural Phase/ Complex	Diagnostic Artifacts	Date (BP)
Historic	Historic Phase	European Trade Goods	<200
Proto-Historic	One Gun Phase	Cayley Series Points; Cluny Pottery; Bone "Scapula Knives"	ca. 200
	Proto-Historic Old Woman's Phase	Cayley Series Points; Saskatchewan Basin Complex: Late Variant Pottery; European Trade Goods	300-250
Late Precontact	Highwood Phase	Highwood points; Intermountain Tradition Pottery	500-300
	Old Woman's Phase	Cayley Series Points; Saskatchewan Basin Complex: Late Variant Pottery	1100-250
	Avonlea Phase	Avonlea/Timber Ridge and Head-Smashed-In Points	1350-1100
Transition	Sonota Phase	Sonota Points	1500-1350
Middle Precontact	Besant Phase	Besant and Samantha Points; Besant Pottery	2100-1500
	Sandy Creek Complex	Sandy Creek Points	ca. 2500
	Outlook Complex	Outlook Points	ca. 2500
	Bracken Phase	Bracken Points	2800-2100
	Pelican Lake Complex	Pelican Lake Points	3600-2800
	McKean Complex	McKean, Duncan, and Hanna Points	4200-3500
	Oxbow Phase	Oxbow Points	4500-4100
	Estevan Phase	Long Creek and Souris Points	4900-4500
	Calderwood Complex	Calderwood Points	5200-4700
	Gowen Complex	Gowen Points	5900-5200
	Maple Leaf Complex	Salmon River Fishtail and Oval Base Points	6300-5200
	Mummy Cave Complex	Bitterroot and Blackwater Side-Notched Points	7300-6700
Transition	Country Hills Complex	Burmis Barbed Points	7500-7300
	Lusk Complex	Lusk Points	8300-7500
Early Precontact	Plains/Mountain Complex	Plains/Mountain Points	8600-7700
	Scottsbluff-Eden Phase	Scottsbluff and Eden Points	9000-8600
	Alberta Phase	Alberta Points	9600-9000
	Agate Basin/Hell Gap Complex	Agate Basin and Hell Gap Points	10200-9600
	Sibbald Phase	Basally Thinned Points	ca. 10500
	Folsom Phase	Folsom and Midland Points	10900-10200
	Clovis Phase	Clovis Points	11050-10800
	Pre-Clovis	n/a	>11050

Table 2: Cultural historical periods in Alberta (adapted from Peck 2011)

Historical Resource Type Descriptions

Historical resources in Alberta can be divided into four types: archaeological, historic structures, palaeontological, and aboriginal traditional use. Each resource type has specific defining characteristics that are discussed below. It should be noted that historical resources can belong to multiple types.

Archaeological Resources

In Alberta, Archaeological resources can be defined as material evidence of past human activity that has been buried, or mostly buried, that is older than 50 years from the present. This evidence can take the form of artifacts and features. Artifacts can be defined as mobile pieces of material culture, or objects made or modified by humans that can be moved from one place to another. Examples of artifacts are: stone tools (arrow heads, hide-scrapers, etc.), fire-broken rocks, ceramic sherds, iron nails, ammunition casings, tin cans, glass bottles, etc. Features are more permanent evidence of past human activity, and can consist of architectural elements, concentrations of artifacts, or other human alterations to the landscape. Examples of features include: stone circles, medicine wheels, cairns, cooking hearths, boiling pits, roasting pits, building foundations, trash middens, etc. Archaeological sites can be defined as collections of artifacts and features that are either spatially and/or temporally related. Archaeological sites can have been occupied by past people on only one occasion, or repeatedly over centuries or millennia. Examples of archaeological sites include: campsites, kill sites, stone feature sites, artifact scatters, homesteads, farmsteads, trails, etc. Archaeological sites in Alberta can be as old as 13,000 years or as recent as the 1960s. Recorded archaeological sites in Alberta are assigned Borden site numbers (see Borden System definition below). Very significant archaeological sites can also be designated as Provincial Historic Resources. Under the Historical Resources Act, the Minister of Culture can designate a historical resource as a Provincial Historic Resource. Provincially Designated resources are protected under the Act, and cannot be destroyed, disturbed, or have historic objects removed without ministerial consent. Provincially designated archaeological sites are assigned

HRV designations of 1a.

Historic Structures

In Alberta, historic structures are defined as buildings or other structures that are older than 50 years before the present day. These can be above-ground structures (houses, garages, barns, stables, granaries, sheds, grain elevators, commercial buildings, railway stations, etc.), or surface or below ground structures (ruins, trails, dams, canals, dugouts, wells, cisterns, root cellars, mines, foundations, etc.). Like archaeological sites, significant historic structures can be designated as Provincial Historic Sites. In the past, historic structures of local or regional significance were also listed as Registered Historic sites. These sites were considered to be of significance, but were not protected by the ministry. As of 2005, historic sites are no longer registered, and the ministry has begun the process of reviewing all Registered Historic Resources for possible upgrading to provincial resources. Provincially Designated Historic Resources are assigned HRV notations of 1h. Additionally, municipalities may designate historic structures of local significance as Municipal Historic Resources (HRMB 2016). Provincially Registered and Municipal resources are assigned HRV notations of 2h.

Palaeontological Resources

Palaeontology is a scientific discipline that studies the evolutionary history of all life on the planet. This often takes the form of studying the fossilized remains of plants and animals (vertebrates and invertebrates), but can also include non-fossilized or partly fossilized remains. The fossil record in Alberta goes back to approximately 600 million years ago to the beginning of the Paleozoic Era. This area was characterized by hard-shelled arthropods (e.g., trilobites) and corals. The fossil record continues through the Paleozoic (development of fish, the first trees, etc.), the Mesozoic Era (e.g., dinosaurs), and the Cenozoic Era (e.g., mammals). Fossilized remains of plants and animals are recovered in the province dating right up to the end of the last ice age (Wisconsin Glaciation). Non-fossilized or partially fossilized palaeontological

specimens date to the end of the Wisconsin Glaciation and into the beginning of the current Holocene Period (10,000 years ago to present) (MacQueen 2006; Regional Aquatics Monitoring Program 2017; University of Alberta 2017). Palaeontological sites are given site names, and are assigned HRV notations based on site significance in the same manner as archaeological sites.

Aboriginal Traditional Use Sites

In Alberta, Aboriginal Traditional Use sites are sites that qualify as historical under the Historical Resources Act, older than 50 years, but have also been identified as significant cultural heritage sites by a First Nations Community. Examples of Aboriginal Traditional Use sites can include: vision sites, medicine wheels, prayer trees, cabins, hunting locations, camping locations, berry picking locations, medicinal plant harvesting locations, fishing locations, trap lines, trails, etc. These sites are assigned HRV notations of 4c.

Starting in the 1870s, treaties began to be signed across the province with various First Nations bands. Treaty 6 covers central Alberta, and was signed between the Canadian government, the Plains Cree and related bands. Treaty 7 covers southern Alberta and includes the Blackfoot Confederacy (Siksika, Kainai, and Pikani bands), the T'suu T'ina, and Stoney/Nakoda. Treaty 8 covers northern Alberta, and includes the Woodland Cree, Beaver, Slavey, and Chipewyan Dene bands. Historically, these treaties restricted First Nations peoples to the designated reserves, but the traditional territory of each band is much larger than present day reserves, and may overlap with the territories of other bands. Traditional use sites can be located on a reserve and/or within the larger traditional territory of a First Nations band.

Previous Historical Resource Investigations

The goals of this summary are threefold. The first objective is to identify any previously recorded historical sites that may be impacted by the proposed development. A second goal is to provide a reasonable assessment of the quantity, type and distribution of known sites in the near vicinity of the proposed development. A

final goal is to provide an indication of the nature and scope of previous investigations in the development area.

Individual archaeological sites are identified using the Borden system (Borden 1952). The Borden system is a Canada-wide, geographically based system for recording historical sites which divides the country into rectangular “blocks”. In this part of Canada, each block is ten minutes of latitude by ten minutes of longitude. A Borden block in the vicinity of Calgary encompasses an area somewhat larger than two Townships (ca. 186 km²). Each block is referred to by a four-letter code uniquely describing the location of that block. Sites are sequentially numbered within each block in the order in which they are discovered and reported. The proposed development is located within Borden Blocks EfPl and EfPk (see Appendix B).

Project Setting

The project footprint is primarily cultivated agricultural land interspersed with low, wet sloughs.

Township Road 232 runs east/west through the centre of the development footprint. Range Road 283 runs north/south through the development footprint. The footprint is bounded on the north and south by rail beds. The southern rail bed is an active CPR route; the northern rail bed is out of service.

Some rural commercial and residential lots already exist within the development footprint. Two of these are in the same locations as farmsteads in historical aerial imagery from 1950.

The bedrock geology consists of Paskapoo Formation sandstone. Surficial geology is stagnant ice moraine.

Historical Resources within or near the proposed development

According to the Listing of Historic Resources (April 2020 Edition), the proposed project occurs in lands that have not been assigned HRV notations (Table 4). A breakdown of historic resources within or adjacent to the project footprint by type follows.

Legal Description	Land Ownership	HRV Notation
3, 4, 9, 10, 15, 16-023-28 W4	Freehold	None

Table 4: HRV notations of lands affected by the development

Archaeology

There are no archaeological sites recorded in the development footprint, the same sections as the development, or the sections adjacent to that.

Two archaeological permitted projects were conducted within the development footprint (78-068 and 80-001). Two additional permitted projects were conducted in neighbouring sections (97-149 and 08-035) (Table 3).

A fair number of sloughs are present within the footprint, which can sometimes indicate favorable landforms for archaeological sites, particularly when associated with neighboring high ground, such as a knoll. Within this footprint however, they are located within generally flat terrain that has been tilled repeatedly. The potential for undisturbed archaeological deposits within the proposed development footprint is poor.

Due to the poor potential for intact archaeological sites, an HRIA is not recommended for the project to assess archaeological resources in the area.

Permit Numbers	Relationship to current development footprint
78-068	Located within development footprint
80-001	Located within development footprint
97-149	Located in an adjacent section
08-035	Located in an adjacent section

Table 3: List of previous permits in relation to the proposed development.

Historic Structures

Historic Structures can be further sub-divided into recorded historic structures and registered/designated structures at the municipal and/or provincial level. Most historic structures are recorded at the quarter section level, so they are presented

that way here. There are no historic structures or designated/registered structures recorded in the proposed development footprint, the same sections as the development footprint, or in adjacent sections.

There are no recorded historic structures located within the proposed development footprint. Historical aerial imagery from 1950 shows two farmsteads within the development area (Appendix D). Both of these lots are still present in current aerial imagery. The southern lot currently possesses no structures. The northern lot on Township Road 232 still possesses structures, however the layout of structures differs from that in the 1950 aerial. It is unclear from Google Streetview imagery if any of the structures on this lot meet the 50-year age requirement for historic structures, however it seems likely that this would be the case.

Due to the likelihood for structures greater than 50 years in age within the proposed development footprint, an HRIA is recommended for the project to assess historic structures in the area.

Palaeontology

The proposed development is planned for lands that do not have an HRV notation for palaeontology. The bedrock geology consists of Paskapoo Formation sandstone. Surficial geology is stagnant ice moraine. Guidance will be requested from the HRMB in regard to palaeontological resources with the project area.

Traditional Use Sites

The proposed development falls within Treaty 7 lands. The nearest First Nation Reserve is Tsuu T'ina Nation 145, which is located 20 km west of the development footprint. None of the proposed development lands have an HRV-4c notation. Guidance will be requested from the HRMB in regard to traditional use resources in the project area.

Summary of Historical Resource Site Potential

Factors considered when determining the potential for historical resources include, but are not limited to, the level of disturbance of the affected land, known historic resources and previous historical investigations in the area, topography of the region, proximity to watercourses, and deep sediments. Impact to known sites will also be taken into consideration.

The proposed development is located in lands that have not been assigned HRV notations. There are no previously recorded historical resources within the proposed development footprint. The potential for intact archaeological resources within the proposed footprint is low, however there is potential for historic structures within one lot in the development area. It is therefore recommended that an HRIA be conducted to assess historic structures.

Guidance will be requested from the HRMB in regard to assessment of the project footprint for palaeontological resources or traditional use sites in the project area.

RECOMMENDATIONS

The proposed Shepard Industrial ASP is located in Sections 3, 4, 9, 10, 15, and 16-023-28 W4M, southeast of Calgary. The proposed development is an area structure plan. The construction start time has not been determined. The proposed development will have an approximate land surface impact of 773 ha (1910 ac).

There are no previously recorded historical resources located within the proposed development footprint. A cluster of structures are present at the same location where some are visible in 1950 aerial imagery, suggesting a likelihood of historic structures at this location.

Based on the potential for historic structures, a Historical Resources Impact Assessment (HRIA) is recommended for this project.

The recommendations in this Historical Resource Overview (HRO) document are not binding, nor do they reflect the completion of a regulatory review process. This HRO document will support the Historic Resources Application sent to the Historic Resources Management Branch (HRMB) of Alberta Culture, Multiculturalism and Status of Women, made by Bison Historical Services Ltd., on behalf of Idea Group Inc. Specific regulatory requirements or Historical Resources Act approval will be then issued by the HRMB subsequent to their review of this HRO document.

REFERENCES CITED

Borden, Charles E.

1952 A Uniform Site Designation Scheme for Canada. *Anthropology in British Columbia* No. 3, pp. 44-48.

HRMB – Historic Resources Management Branch

2016 Alberta Historic Places Designation Program. Electronic document, <http://www.culturetourism.alberta.ca/heritage-and-museums/programs-and-services/historic-places-research-and-designation/historic-places-designation-program/> , Accessed July 31, 2017.

2017 Historic Resources Impact Assessments. Electronic document, <https://www.culturetourism.alberta.ca/heritage-and-museums/programs-and-services/historic-resources-impact-assessments/> , Accessed July 28, 2017.

2020 Listing of Historic Resources, Restricted Version. Land Use Planning Section, Historic Resource Management Branch, Alberta Culture, Edmonton, AB. April 2020 Version.

LaForge, Kerry

2004 Grazing: a Natural Component of Grassland Ecozone Riparian Systems. Agriculture and Agri-Food Canada, Prairie Farm Rehabilitation Administration. http://www.agr.gc.ca/pfra/land/Grazing_e.pdf

MacQueen, R. W.

2006 Geological History. Electronic Document, <http://www.thecanadianencyclopedia.ca/en/article/geological-history/>, accessed on July 31, 2017.

NRC—Natural Regions Committee

2006 Natural Regions and Subregions of Alberta. Compiled by D.J. Downing and W.W. Pettapiece. Government of Alberta. Pub. No. T/852.

Peck, Trevor D.

2004 Bison Ethology and Native Settlement Patterns During the Old Women's Phase on the Northwestern Plains. *British Archaeological Reports* S 1278 2004. Archaeopress, Oxford.

2011 *Light From Ancient Campfires: Archaeological Evidence for Native Lifeways on the Northern Plains*. AU Press. Edmonton.

Reeves, B.O.K.

1969 The Southern Alberta Palaeo-Cultural—Palaeo-Environmental Sequence. In: Post-Pleistocene Man and His Environment on the Northern Plains, edited by R.G. Forbis, L.B. Davis, O.A. Christensen, and G. Fedirchuk. University of Calgary Archaeological Association, Calgary, pp. 6-46.

Regional Aquatics Monitoring Program

2017 Geologic History. Electronic Document, <http://www.ramp-alberta.org/river/geography/geological+prehistory/paleozoic.aspx>, accessed on July 31, 2017.

Spry, Irene M.

1962 The Palliser Expedition: An account of John Palliser's British North American Exploring Expedition 1857-1860. MacMillan, Toronto.

Strong, W.L. and K.R. Leggat

1992 Ecoregions of Alberta. Alberta Forestry, Lands and Wildlife, Edmonton.

University of Alberta

2017 Paleontology. Electronic Document, <https://www.ualberta.ca/earth-atmospheric-sciences/undergraduate-studies/degree-programs/paleontology>, accessed on July 31, 2017.

Vickers, J. R.

1986 Alberta Plains Prehistory: A Review. Archaeological Survey of Alberta Occasional Paper No. 27, Edmonton.

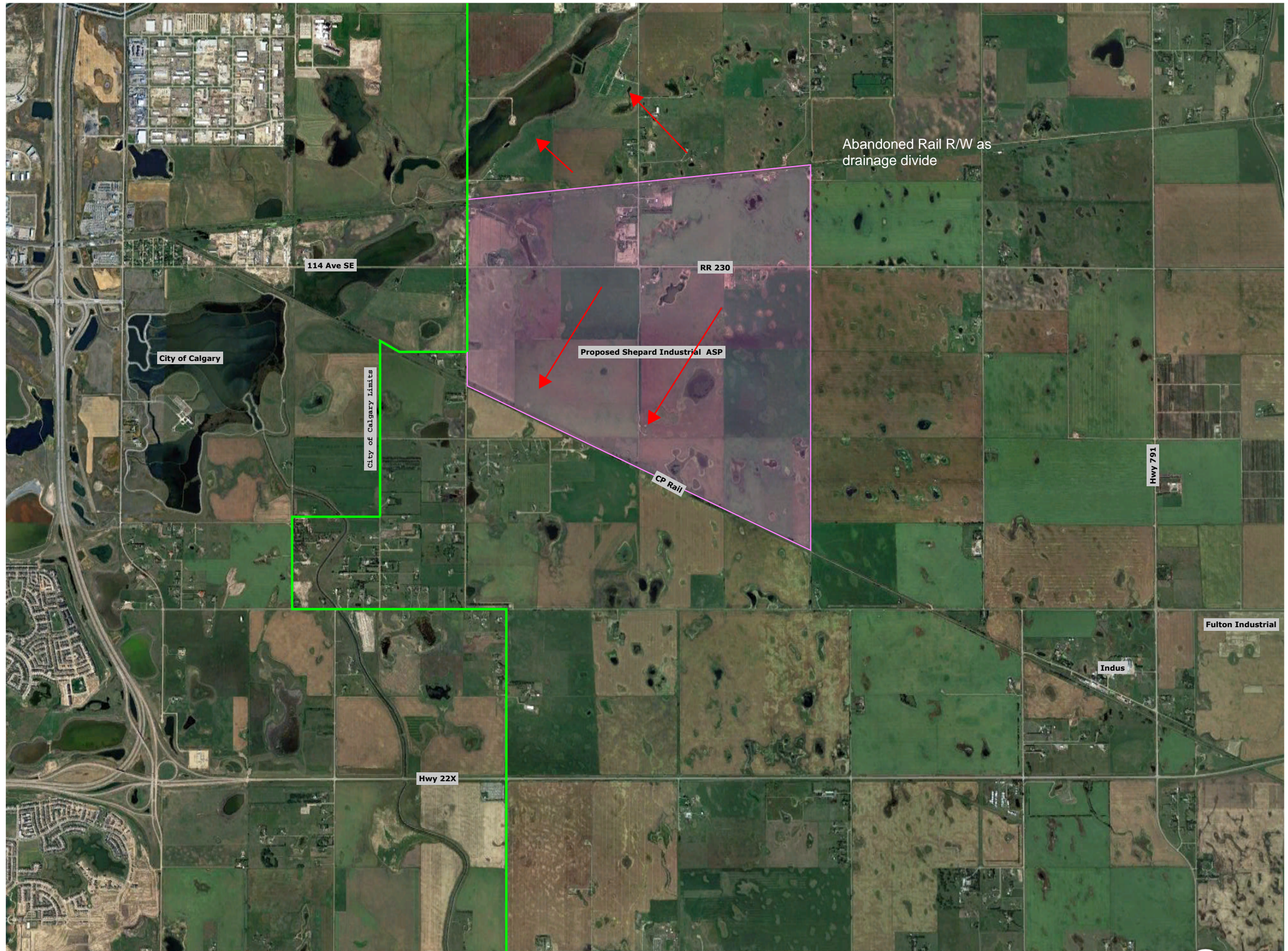
Wormington, H.M. and R.G. Forbis

1965 An Introduction to the Archaeology of Alberta, Canada. Proceedings No. 11, Denver Museum of Natural History.

APPENDIX A: PROJECT PLANS

Shepard Industrial ASP

Bison No. 2008-0035; HRO 20-004



Owner

Consultant



Legend

Project

Drawing Title

Project Lead

Scale

Project #

Date (YY-MM-DD)

Issued For/Revisions		Date YY.MM.DD
No.	Description	

Drawing

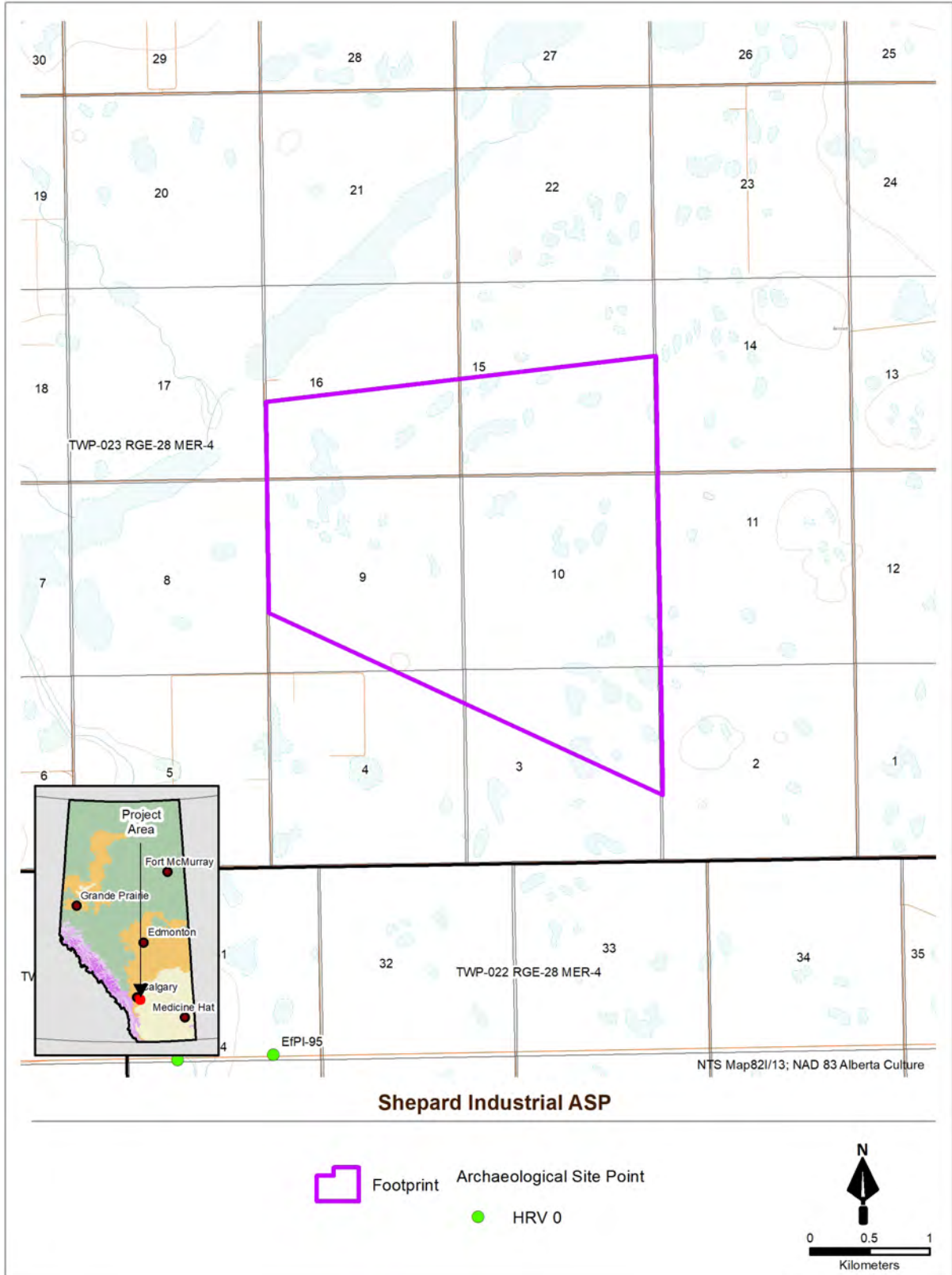
APPENDIX B: PROJECT MAPS

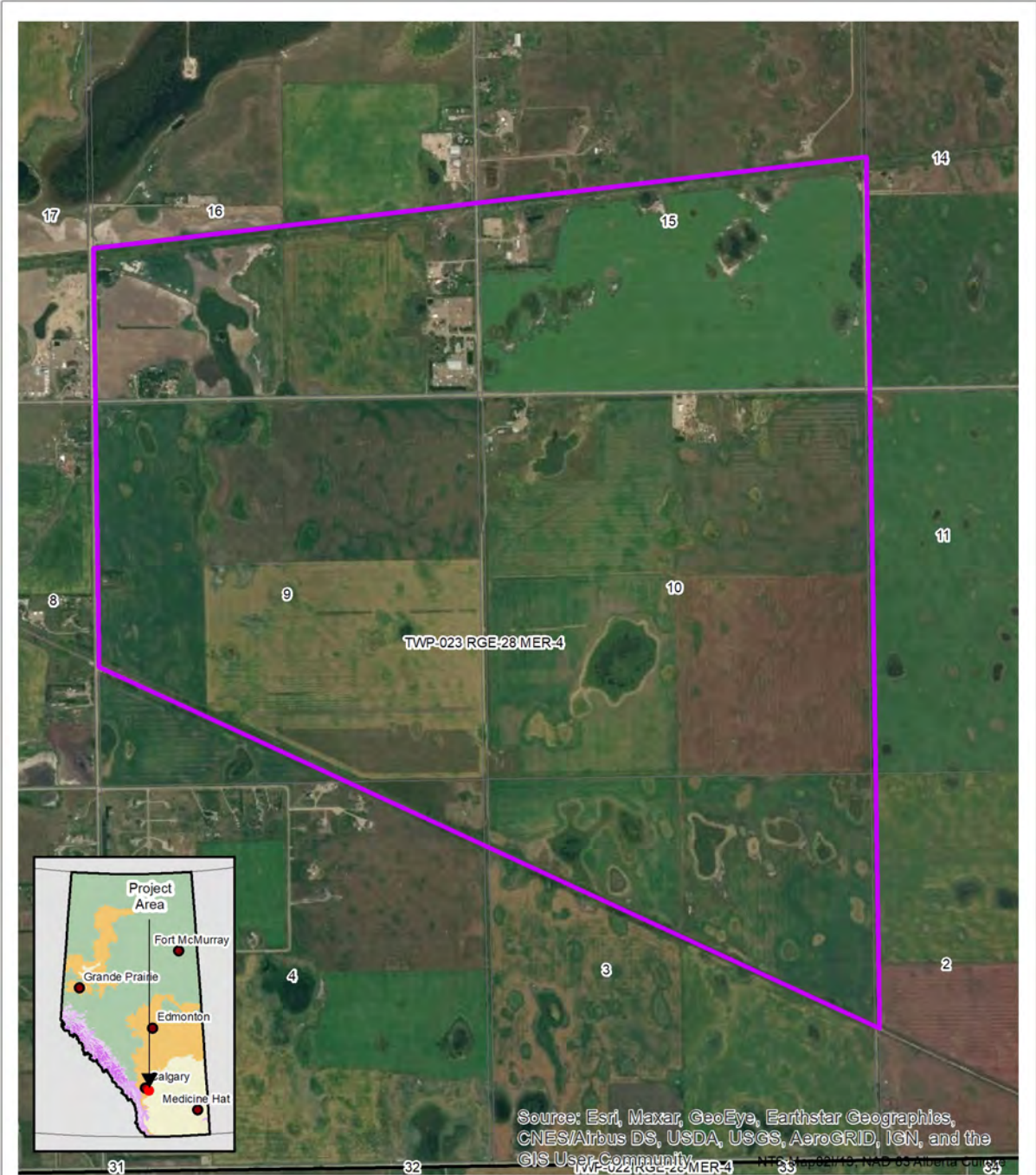
1:50,000

Large Scale

Bedrock Geology

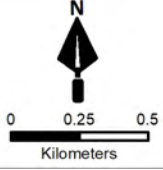
Surficial Geology

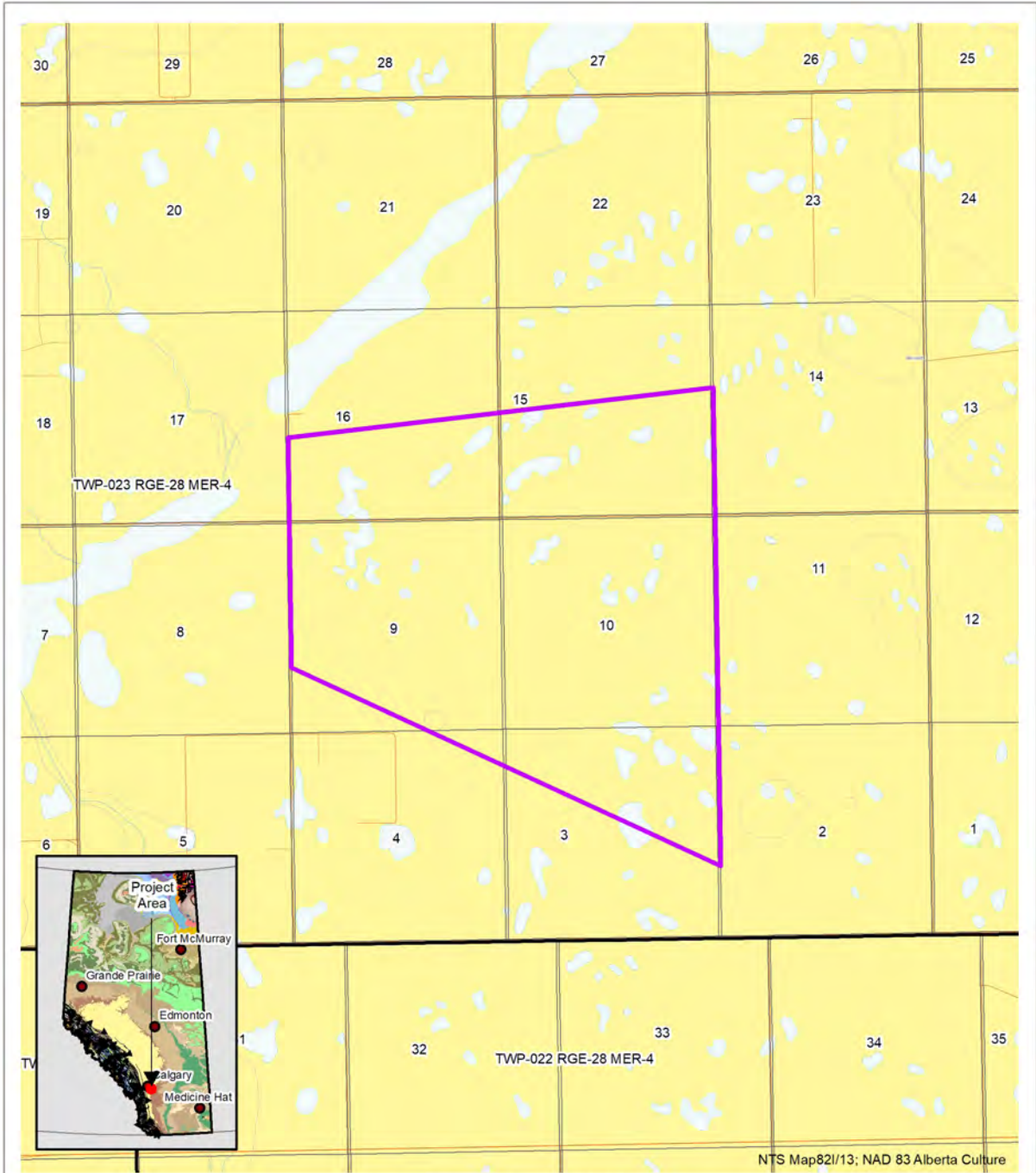




Shepard Industrial ASP

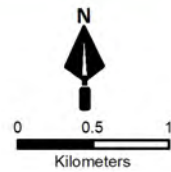
 Footprint

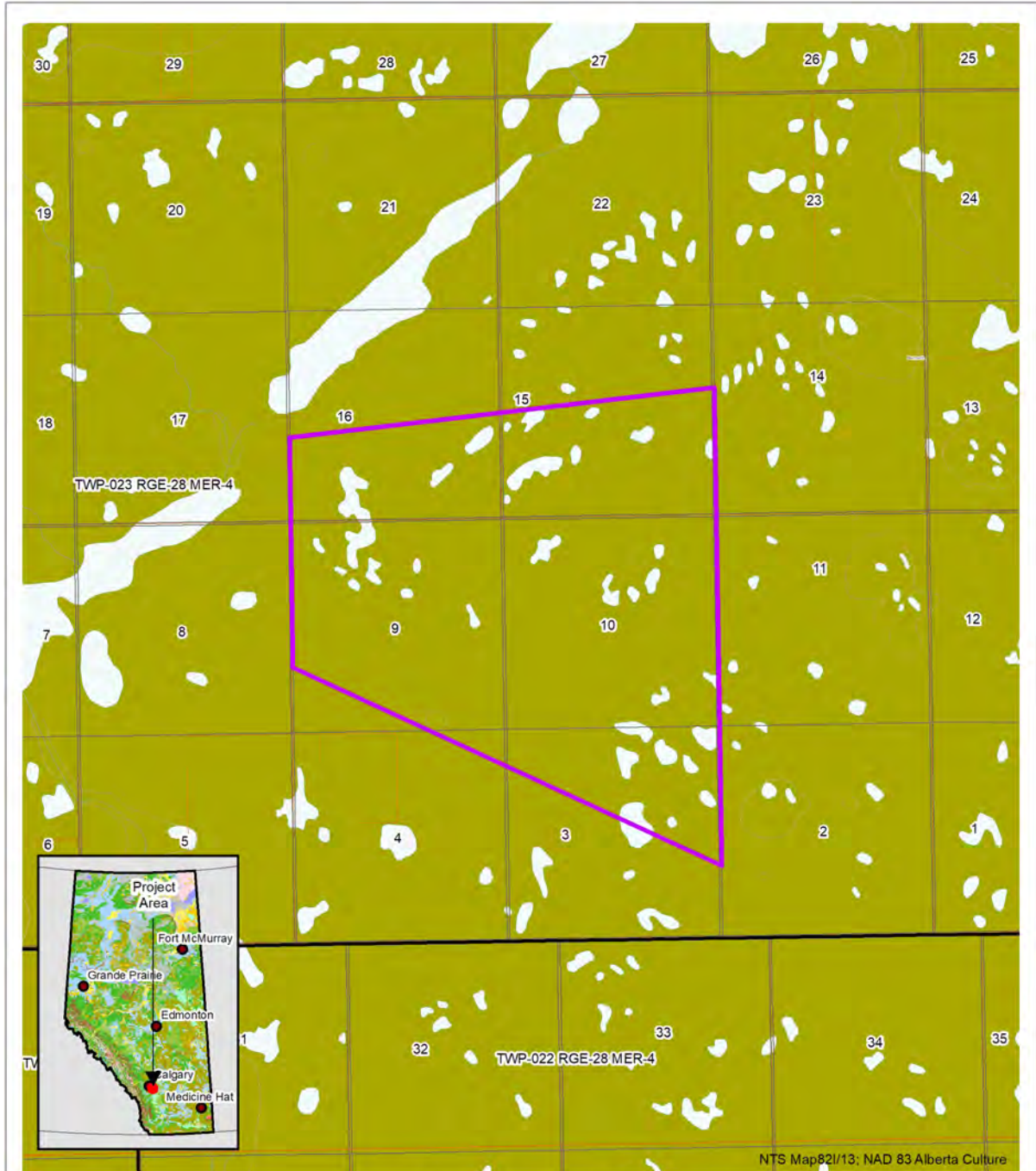






Shepard Industrial ASP

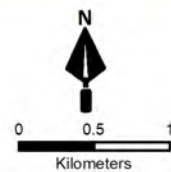
-  Footprint
-  Porcupine Hills, Paskapoo (Plains) and Ravenscrag formations





Shepard Industrial ASP

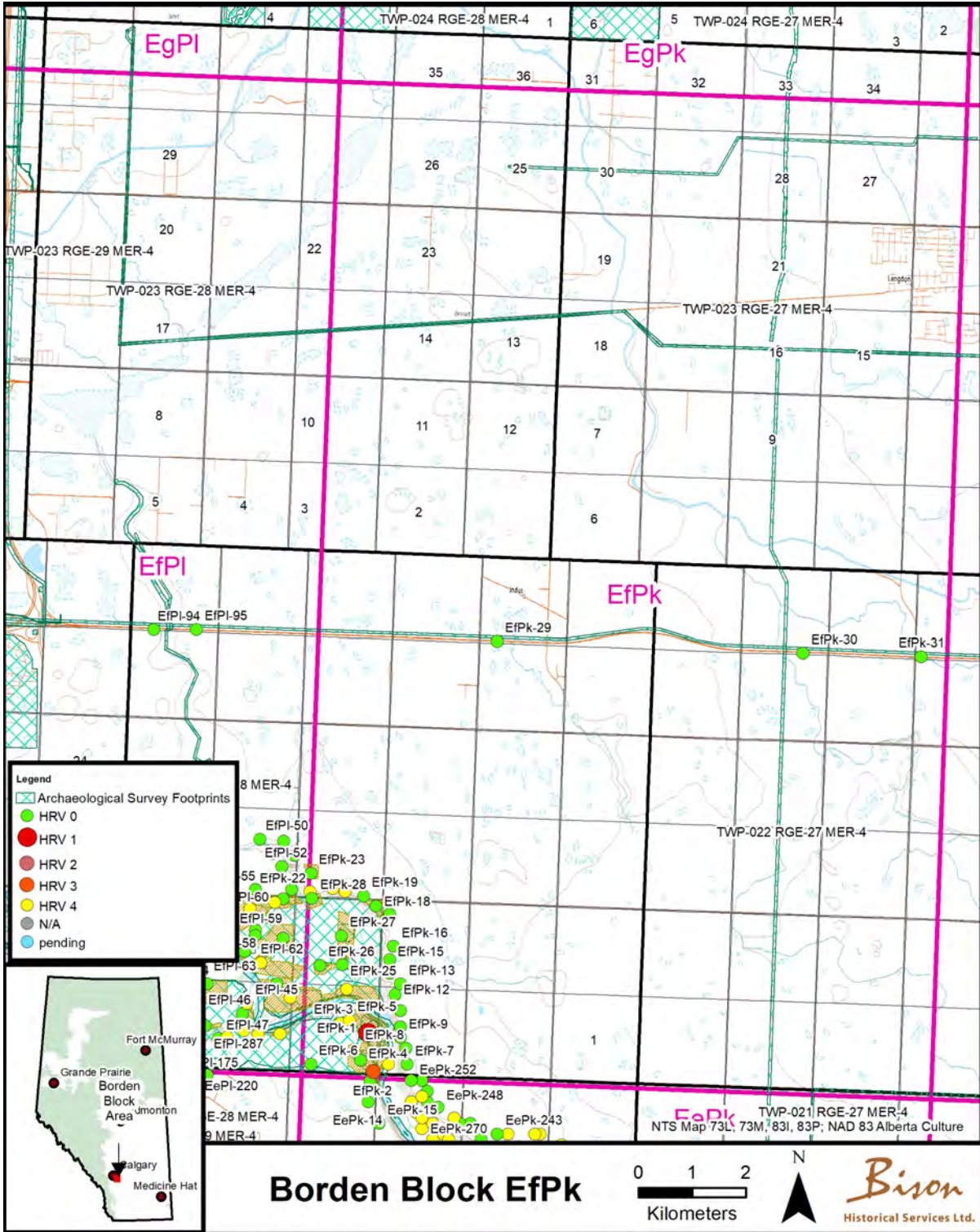
-  Footprint
-  Stagnant Ice Moraine (MS)

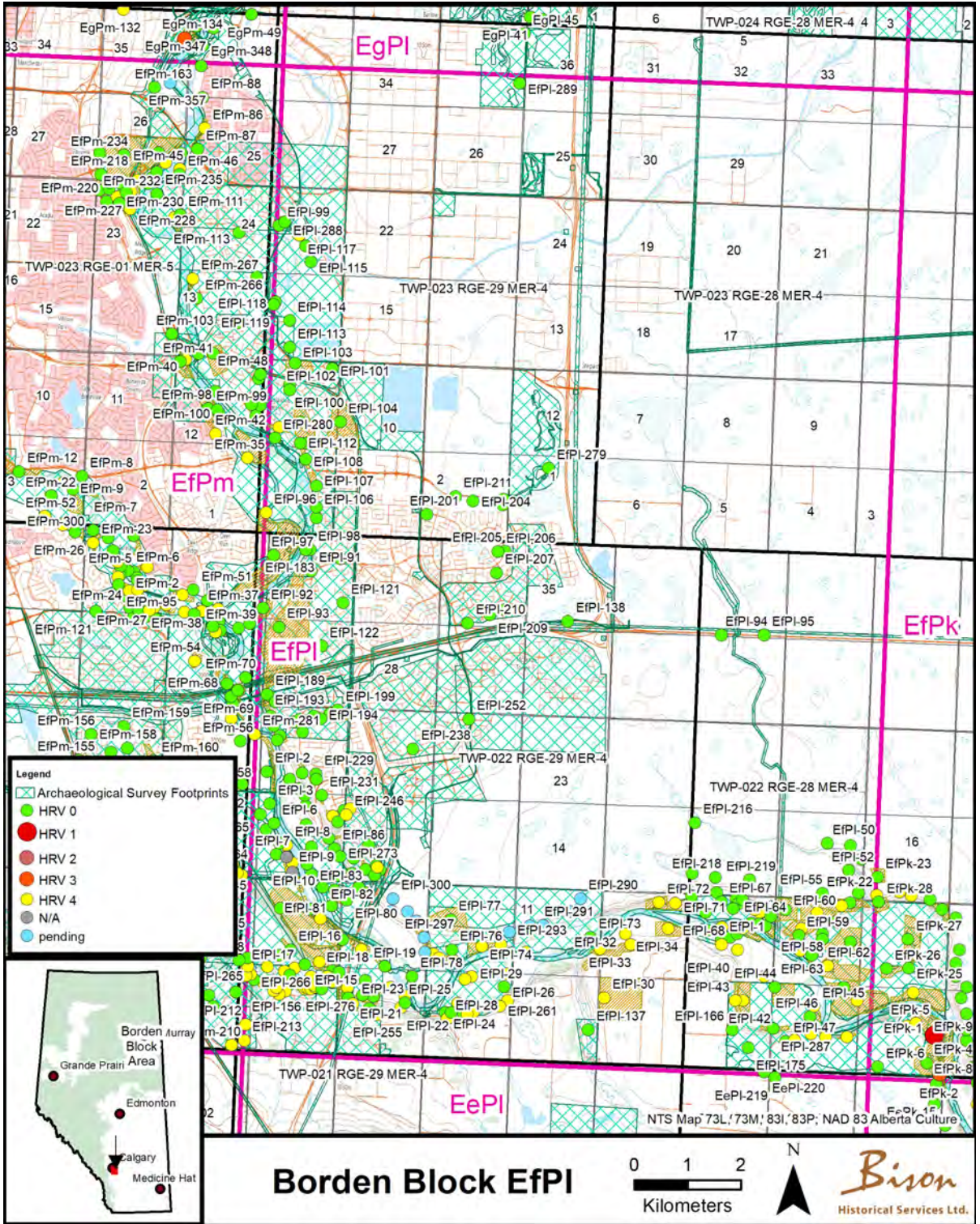


APPENDIX C: BORDEN BLOCK MAPS

EfPI

EfPk





APPENDIX D: HISTORIC AERIAL IMAGERY

5016-1549 20 (1950)

