



# **Manitoba's Designated Oil Fields & Pools 2018**

By

**P. Fulton-Regula, P.Geo  
Senior Petroleum Geologist  
Petroleum Branch  
Resource Development  
Manitoba Growth Enterprise & Trade**



©Queen's Printer for Manitoba, 2018.

Every possible effort is made to ensure the accuracy of all information contained within this report. The author and Manitoba Resource Development does not assume any liability for errors that may occur. Source references are included in the report and users should verify critical information.

Any digital data and software accompanying this publication are supplied on the understanding that they are for the sole use of the licensee, and will not be redistributed in any form, in whole or in part, to third parties. Any references to proprietary software in the documentation and/or any use of proprietary data formats in this release do not constitute endorsement by Manitoba Resource Development of any manufacturer's product.

When using information from this publication in other publications or presentations, due acknowledgment should be given to the Manitoba Petroleum Branch. The following reference format is recommended:

Fulton-Regula, P., 2018: Manitoba's Designated Oil Fields and Pools 2018 (NTS 62F/1-3, 6-11, 14-16; 62K/1-3, 6-8); Manitoba Growth Enterprise & Trade, Resource Development, Petroleum Branch.

**NTS grid:** NTS 62F/1-3, 6-11, 14-16; 62K/1-3, 6-8

**Keywords:** Manitoba; Oil; Pools; Fields; Daly; Sinclair; Daly Sinclair; Tilston; Waskada; Lulu Lake; Virden; Whitewater; Pierson; Kirkella; Souris Hartney; Regent; Mountainside; Birdtail; Manson; Other Areas; Favel; Melita; Lower Amaranth; Mission Canyon; Lodgepole; Bakken; Bakken-Torquay; Torquay; Three Forks; Reston-Amaranth-Lodgepole.

Published by:  
Manitoba Growth, Enterprise & Trade  
Resource Development, Petroleum Branch  
360-1395 Ellice Avenue  
Winnipeg, Manitoba  
R3G 3P2  
Tel: (204) 945-6577  
Fax: (204) 945-0586  
Website: [www.manitoba.ca](http://www.manitoba.ca)

This publication is available for free download at: [Manitoba.ca/petroleum](http://Manitoba.ca/petroleum)

## **FOREWORD**

This annual report was compiled by P. Fulton-Regula, P.Geo for the Director of the Petroleum Branch in accordance with section 11(4) of The Oil & Gas Act. This order does not include previously designated fields and pools that have been amalgamated or reassigned.

This report details the boundaries of the known oil fields and pools in Manitoba on January 1, 2018. It states the names and numerical codes used in the Manitoba Oil and Gas Information System (MOGWIS) to track the area and stratigraphic interval producing oil. Further information pertaining to the history of field or pool designations may be obtained by contacting the Petroleum Branch.

The Petroleum Branch is committed to providing quality service to all of its clients. If you have any comments or suggestions related to the quality or relevance of information received from the Branch, or service provided by Branch staff, please contact:

Amy Jordan, A/ Director  
Petroleum Branch  
Resource Development  
Manitoba Growth, Enterprise and Trade  
360-1395 Ellice Avenue  
Winnipeg, MB R3G 3P2  
Phone: (204) 945-6574  
Fax: (204) 945-0586

# TABLE OF CONTENTS

FOREWORD.....	3
MANITOBA’S DESIGNATED FIELDS .....	6
MANITOBA’S DESIGNATED POOLS .....	16
MANITOBA’S DESIGNATED POOL PLATS .....	24
APPENDIX A - Grid and Scale.....	59
APPENDIX B - Manitoba pool codes by Formation.....	61
APPENDIX C - Manitoba Williston Basin stratigraphy showing pool codes, hydrocarbon bearing zones and approved disposal zones .....	62

## List of Tables

<i>Table 1: Manitoba’s designated field codes and index map numbers.</i> .....	6
<i>Table 2: Manitoba’s designated pools.</i> .....	17

## List of Figures

<i>Figure 1: Oil field location map, southwestern Manitoba.</i> .....	7
<i>Figure 2: Index of map locations, southwestern Manitoba.</i> .....	8
<i>Figure 3: Map 1; Birdtail Field.</i> .....	9
<i>Figure 4: Map 2; Manson, Kirkella, Daly Sinclair &amp; Virden fields.</i> .....	10
<i>Figure 5: Map 3; Daly Sinclair, Virden &amp; Tilston fields.</i> .....	11
<i>Figure 6: Map 4; Manson, Daly Sinclair &amp; Virden fields.</i> .....	12
<i>Figure 7: Map 5; Tilston, Pierson &amp; Waskada fields.</i> .....	13
<i>Figure 8: Map 6; Waskada Field.</i> .....	14
<i>Figure 9: Map 7; Souris Hartney, Regent, Whitewater, Mountainside &amp; Lulu Lake fields.</i> .....	15
<i>Figure 10: Map 1, Melita Formation pools (19).</i> .....	25
<i>Figure 11: Map 1; Bakken &amp; Bakken-Torquay formation pools (60 &amp; 62).</i> .....	26
<i>Figure 12: Map 2; Reston Formation (21) &amp; Reston-Amaranth-Lodgepole formations pools (22).</i> .....	27
<i>Figure 13: Map 2; Lodgepole dolomite pools (51).</i> .....	28
<i>Figure 14: Map 2; Lodgepole Formation Daly Member pools (54).</i> .....	29
<i>Figure 15: Map 2; Lodgepole Formation Cruikshank Crinoidal Member pools (55).</i> .....	30
<i>Figure 16: Map 2; Lodgepole Formation undifferentiated pools (59).</i> .....	31
<i>Figure 17: Map 2; Bakken-Torquay formation pools (60 &amp; 62).</i> .....	32
<i>Figure 18: Map 3; Amaranth Formation Upper Amaranth Member pools (23).</i> .....	33
<i>Figure 19: Map 3; Mission Canyon Formation MC-1 Member pools (44).</i> .....	34
<i>Figure 20: Map 3; Lodgepole Formation undifferentiated pools (59).</i> .....	35
<i>Figure 21: Map 3; Bakken &amp; Bakken-Torquay formation pools (60 &amp; 62).</i> .....	36
<i>Figure 22: Map 3; Torquay Formation pools (65).</i> .....	37
<i>Figure 23: Map 4; Reston Formation (21), Reston-Amaranth-Lodgepole (22) formations, &amp; Amaranth Formation Upper Amaranth Member pools (23).</i> .....	38
<i>Figure 24: Map 4; Amaranth Formation Lower Amaranth Member-Lodgepole Formation undifferentiated pools (40).</i> .....	39
<i>Figure 25: Map 4; Lodgepole Formation undifferentiated pools (59).</i> .....	40
<i>Figure 26: Map 4; Bakken &amp; Bakken-Torquay formations pools (60 &amp; 62).</i> .....	41
<i>Figure 27: Map 5; Amaranth Formation Lower Amaranth Member pools (29).</i> .....	42
<i>Figure 28: Map 5; Amaranth Formation Lower Amaranth Member-Mission Canyon Formation MC-3b Member pools (35).</i> .....	43
<i>Figure 29: Map 5; Mission Canyon Formation MC-3 Member pools (41).</i> .....	44
<i>Figure 30: Map 5; Mission Canyon Formation MC-3b Member pools (42).</i> .....	45
<i>Figure 31: Map 5 Mission Canyon Formation MC-3a Member pools (43).</i> .....	46
<i>Figure 32: Map 5; Mission Canyon Formation MC-1 Member pools (44).</i> .....	47
<i>Figure 33: Map 5; Bakken-Torquay formations pools (62).</i> .....	48
<i>Figure 34: Map 6; Favel Formation pools (10).</i> .....	49
<i>Figure 35: Map 6; Amaranth Formation Lower Amaranth Member pools (29).</i> .....	50
<i>Figure 36: Map 6; Mission Canyon Formation MC-3b Member pools (42).</i> .....	51
<i>Figure 37: Map 6; Mission Canyon Formation MC-3a Member pools (43).</i> .....	52

<b>Figure 38:</b> Map 6; Mission Canyon Formation MC-1 Member pools (44). .....	53
<b>Figure 39:</b> Map 6; Lodgepole Formation Virden Member pools (53) & Lodgepole Formation undifferentiated (59) pools. ....	54
<b>Figure 40:</b> Map 7; Amaranth Formation Lower Amaranth Member pools (29). ....	55
<b>Figure 41:</b> Map 7; Lodgepole Formation Whitewater Lake Member pools (52). ....	56
<b>Figure 42:</b> Map 7; Lodgepole Formation Virden Member pools (53). ....	57
<b>Figure 43:</b> Map 7; Lodgepole Formation undifferentiated pools (59). ....	58
<b>Figure 44:</b> Sections in a township of the DLS system. ....	59
<b>Figure 45:</b> Legal subdivisions in a section of the DLS system. ....	60
<b>Figure 46:</b> Quarter section illustration of the DLS system. ....	60

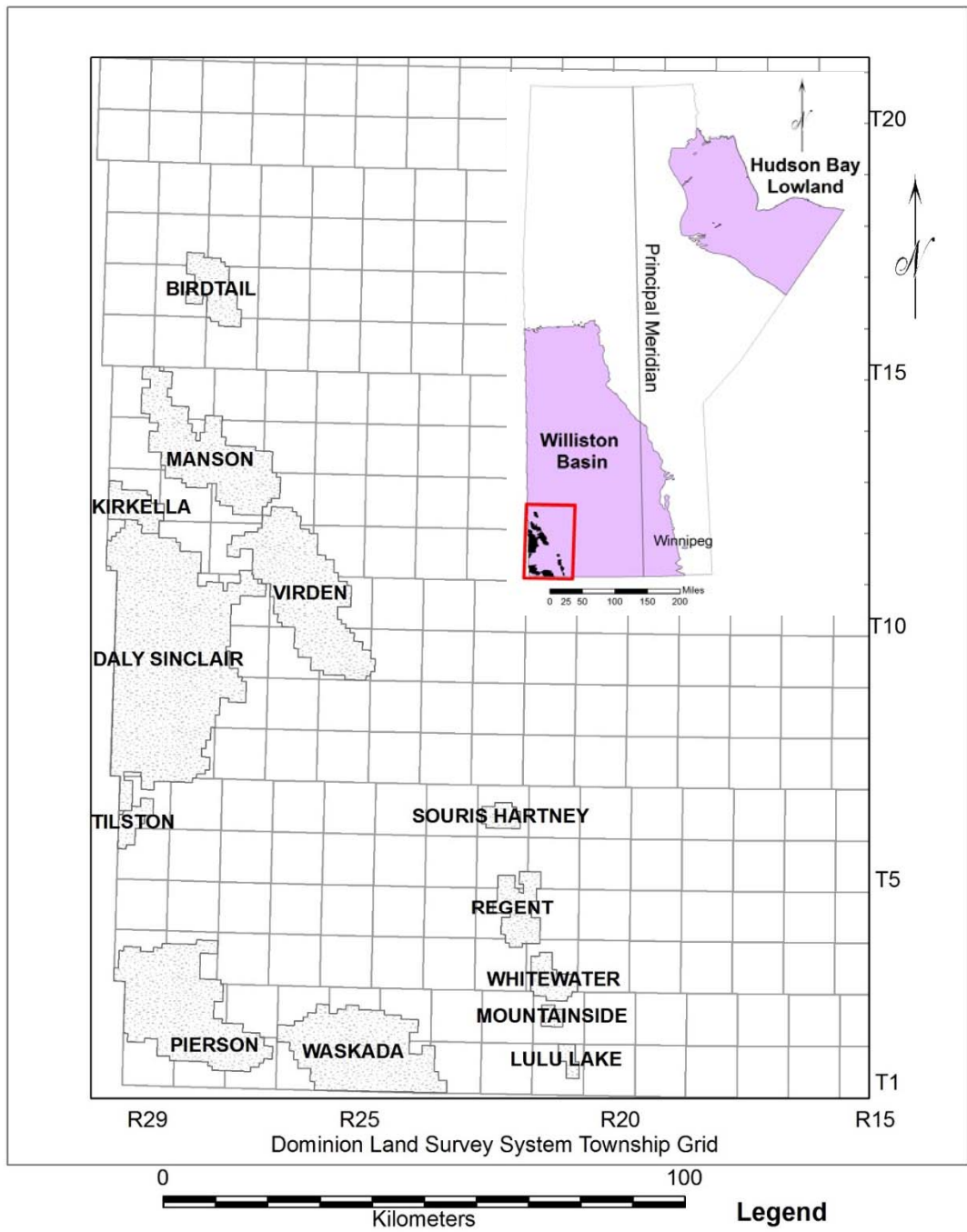
## MANITOBA'S DESIGNATED FIELDS

Effective **January 1, 2018**, the following fields are designated under clause 11(4)(b) of The Oil and Gas Act. Each oil field is given a two digit number designation, found in Table 1; this field code becomes the first two digits of the field pool code. The field boundaries are shown in Figure 1.

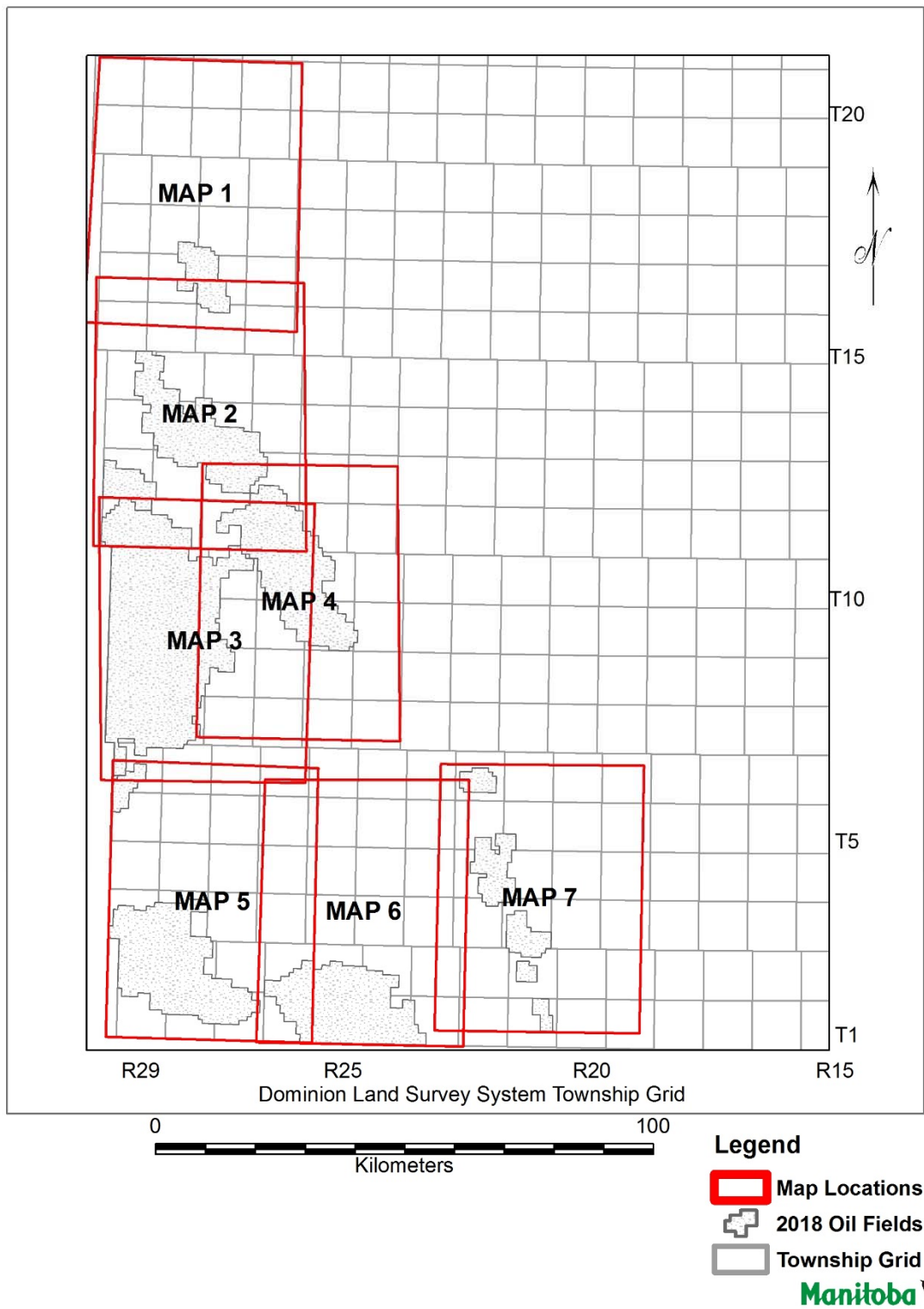
The area encompassed by each field is outlined on the reference plats (Figures 3 to 9) as per the index map in Figure 2. All fields and pools are drawn on the Dominion Land Survey (DLS) system grid. Appendix A describes the DLS system grid.

*Table 1: Manitoba's designated field codes and index map numbers.*

<b>FIELD</b>	<b>FIELD CODE</b>	<b>MAP #</b>
Daly Sinclair Field	01	3
Tilston Field	02	3 & 5
Waskada Field	03	6
Lulu Lake Field	04	7
Virden Field	05	4
Whitewater Field	06	7
Pierson Field	07	5
Kirkella Field	09	2
Souris Hartney Field	10	7
Regent Field	13	7
Mountainside Field	14	7
Birdtail Field	15	1
Manson Field	17	2

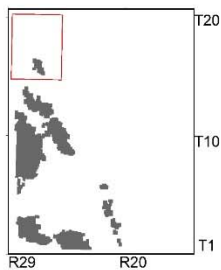
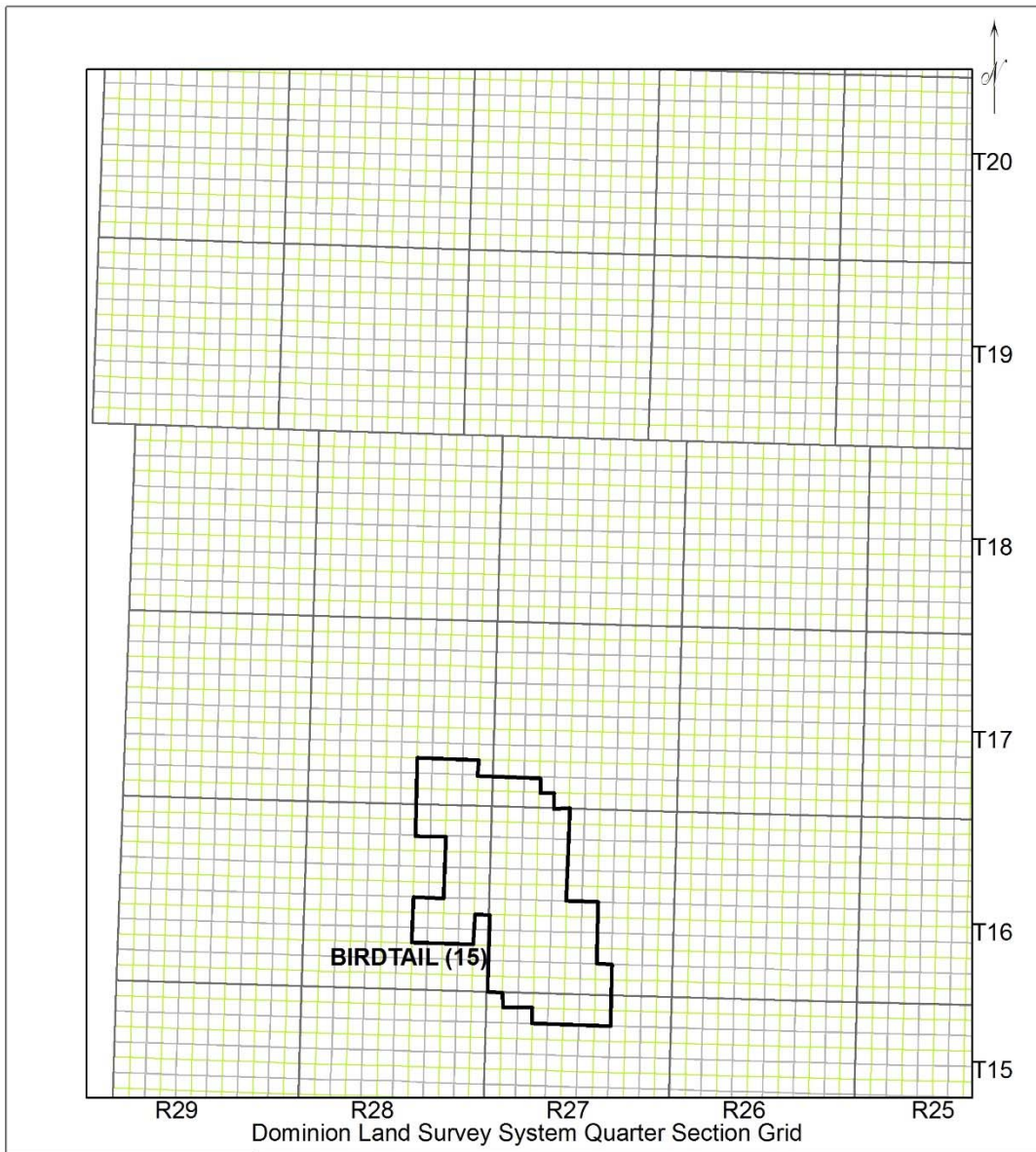


*Figure 1: Oil field location map, southwestern Manitoba.*



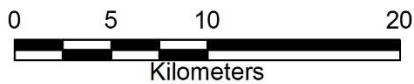
*Figure 2: Index of map locations, southwestern Manitoba.*





**Map 1**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

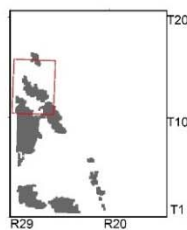
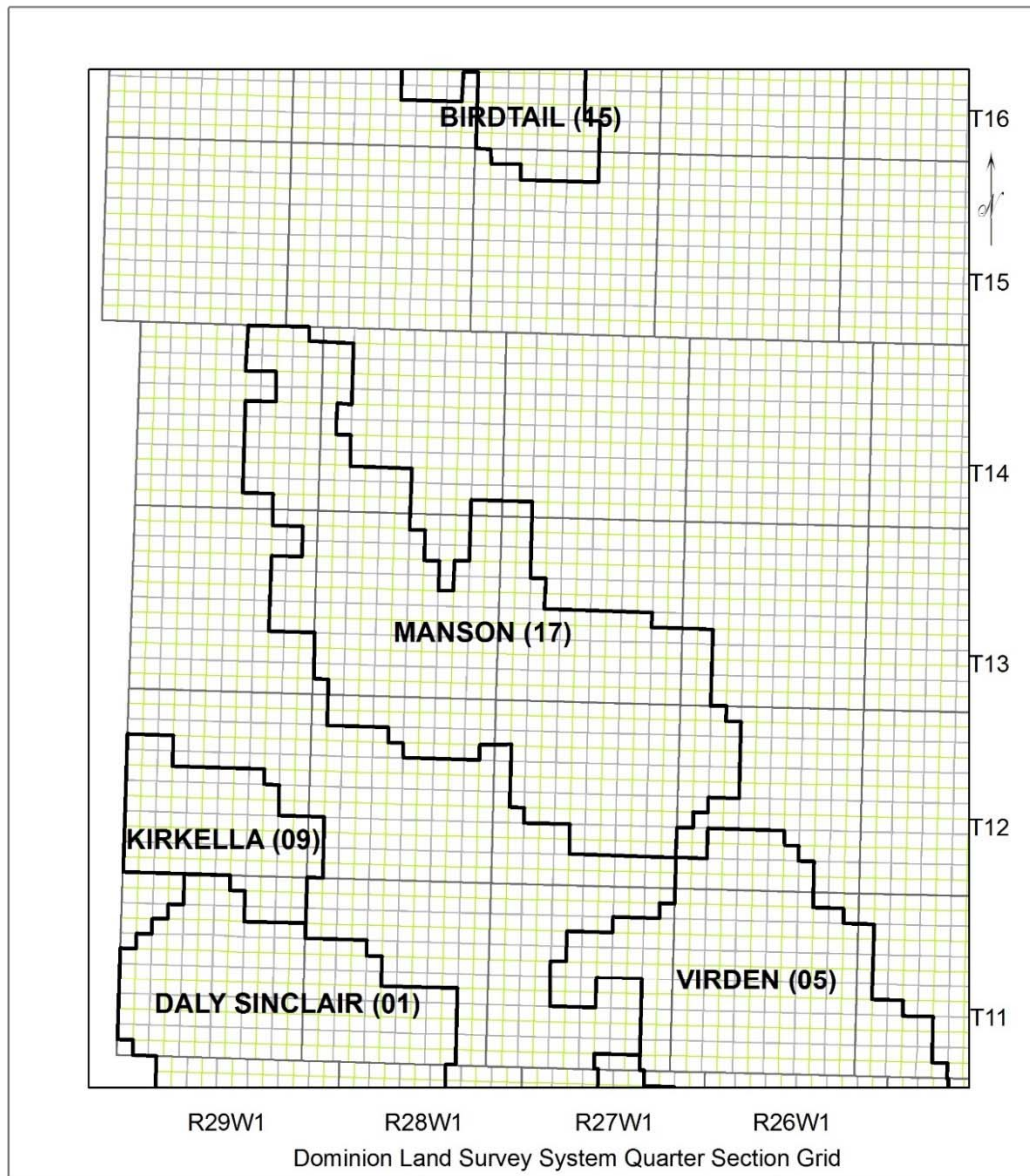


**Legend**

-  2018 Oil Fields
-  Township Grid
-  Section Grid
-  Quarter Section Grid



*Figure 3: Map 1; Birdtail Field.*

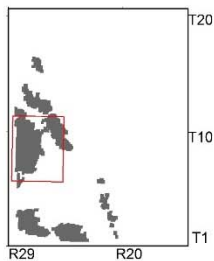
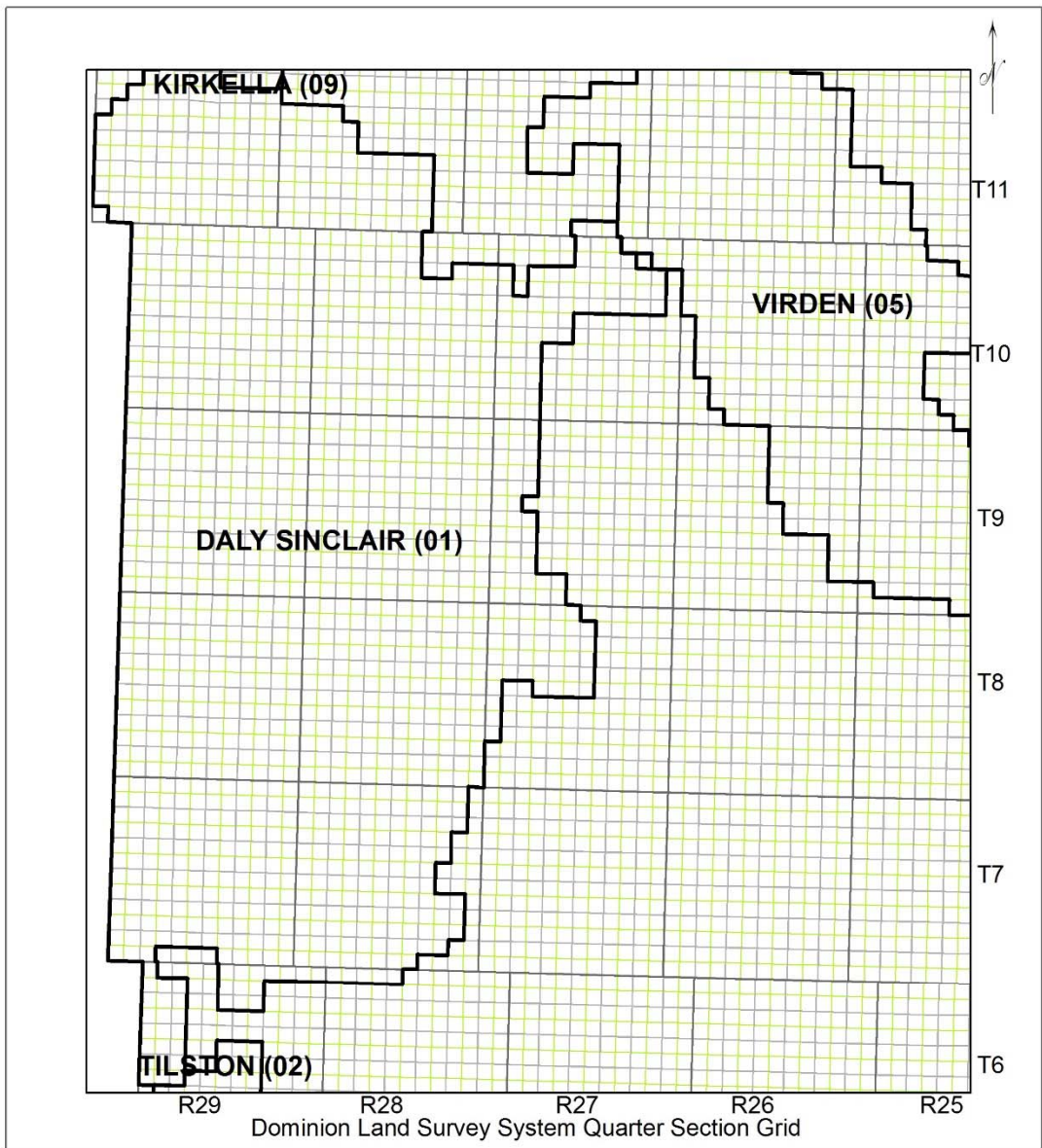


**Map 2**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula,  
 Petroleum Branch

0 5 10 20  
 kilometres

- Legend**
-  2018 Oil Fields
  -  DLS township grid
  -  DLS section grid
  -  DLS quarter section grid
- Manitoba** 

*Figure 4: Map 2; Manson, Kirkella, Daly Sinclair & Virden fields.*



**Map 3**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

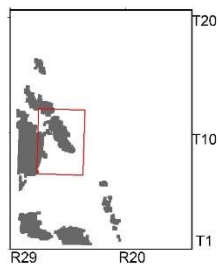
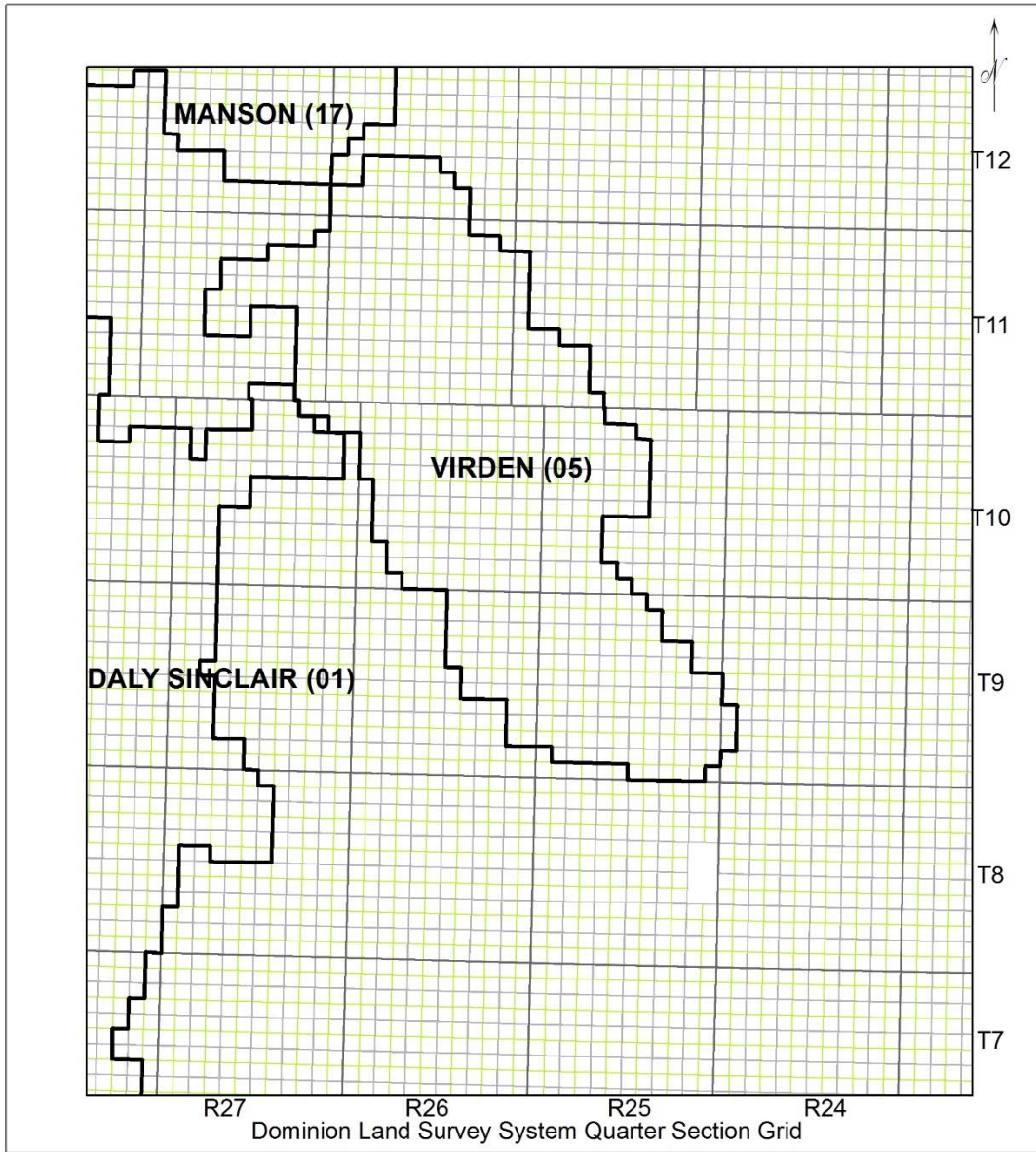


**Legend**

-  2018 Oil Fields
-  Township Grid
-  Section Grid
-  Quarter Section Grid

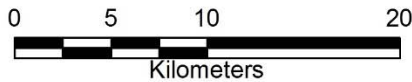


*Figure 5: Map 3; Daly Sinclair, Virden & Tilston fields.*



**Map 4**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

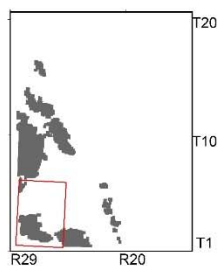
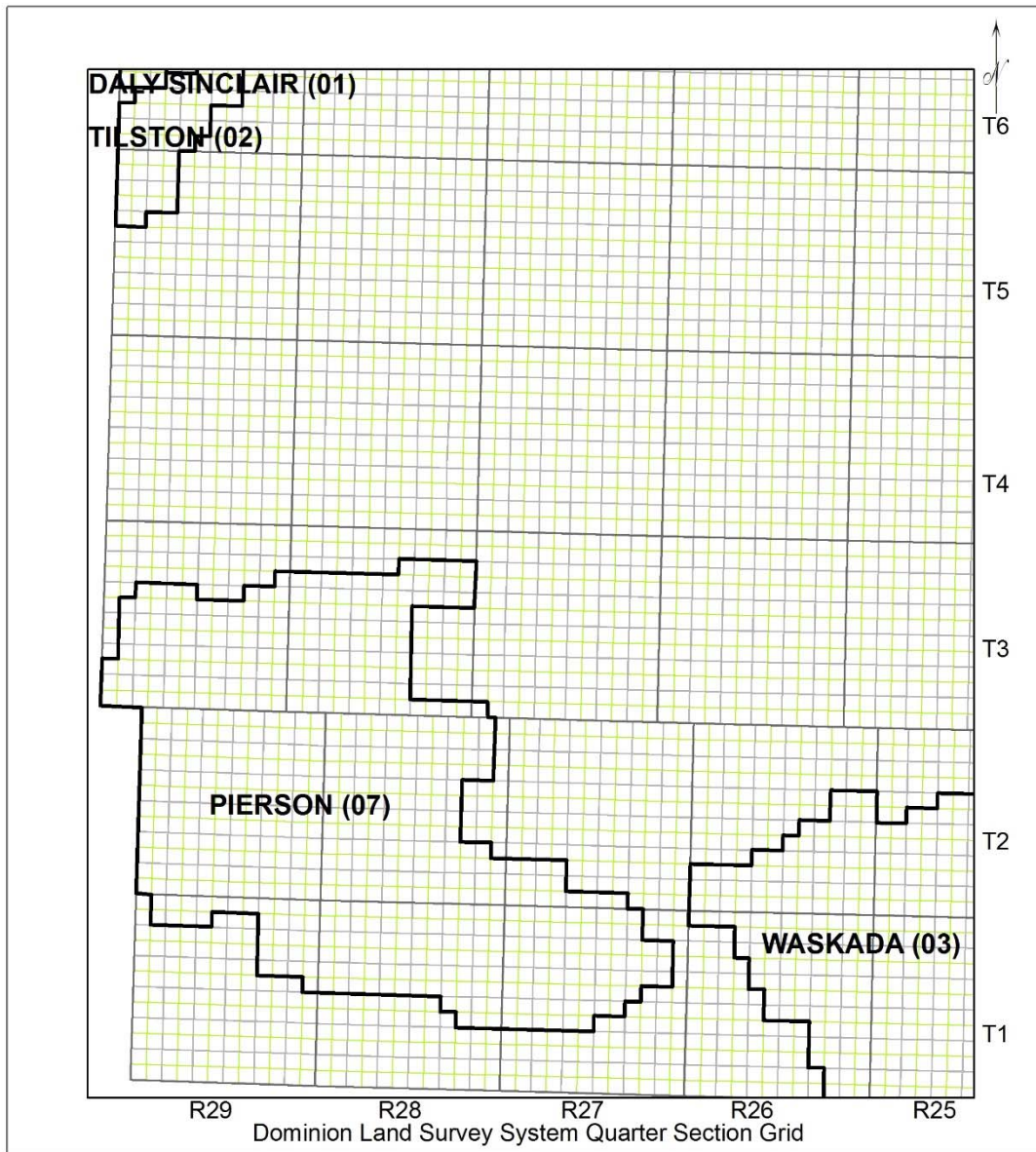


**Legend**

-  2018 Oil Fields
-  Township Grid
-  Section Grid
-  Quarter Section Grid



*Figure 6: Map 4; Manson, Daly Sinclair & Virden fields.*



**Map 5**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

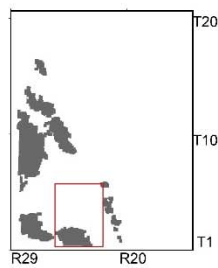
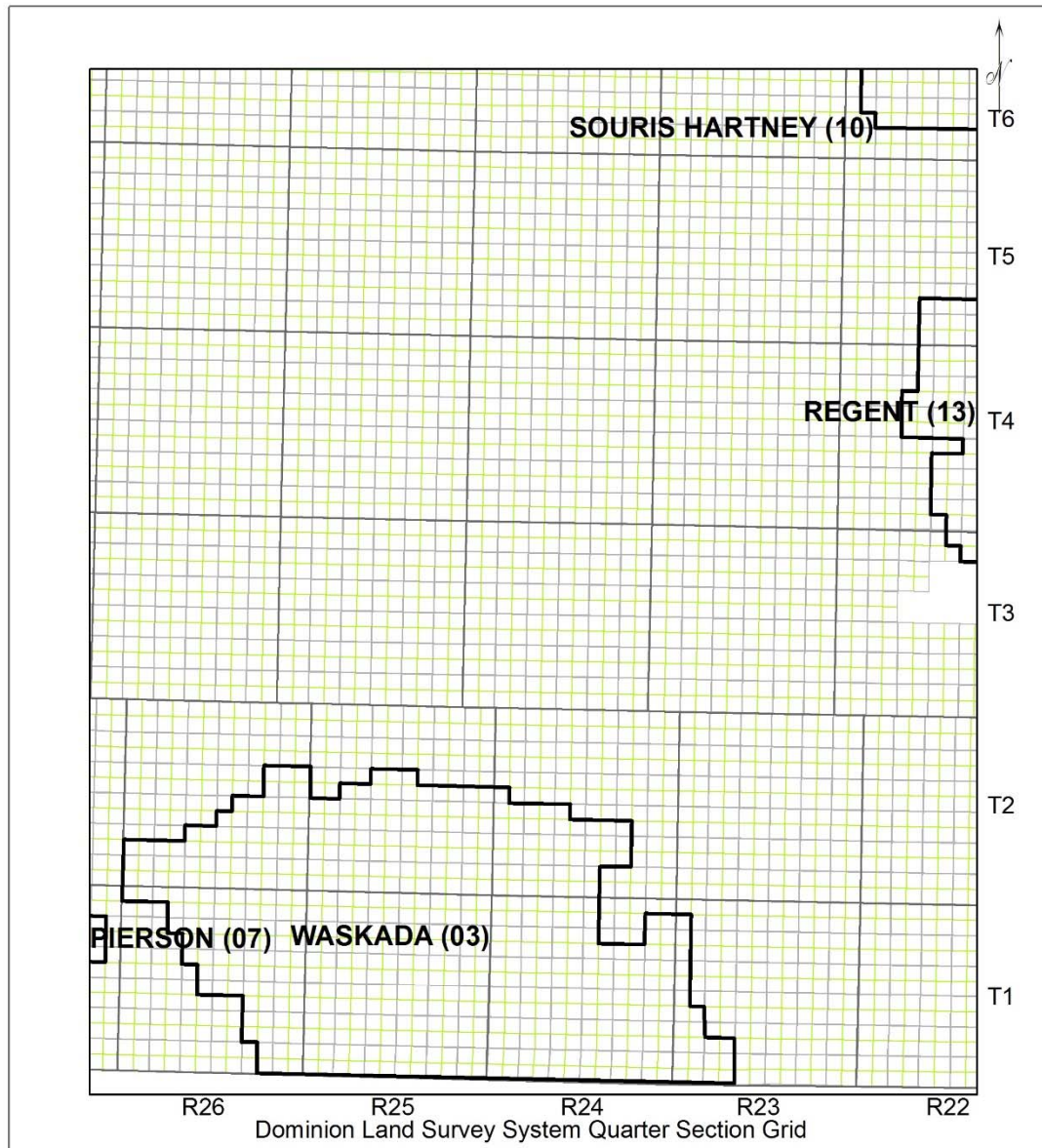


**Legend**

-  2018 Oil Fields
-  Township Grid
-  Section Grid
-  Quarter Section Grid

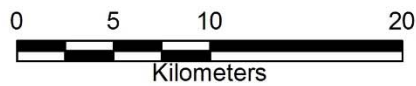


*Figure 7: Map 5; Tilston, Pierson & Waskada fields.*



**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

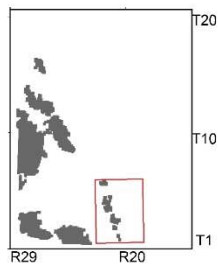
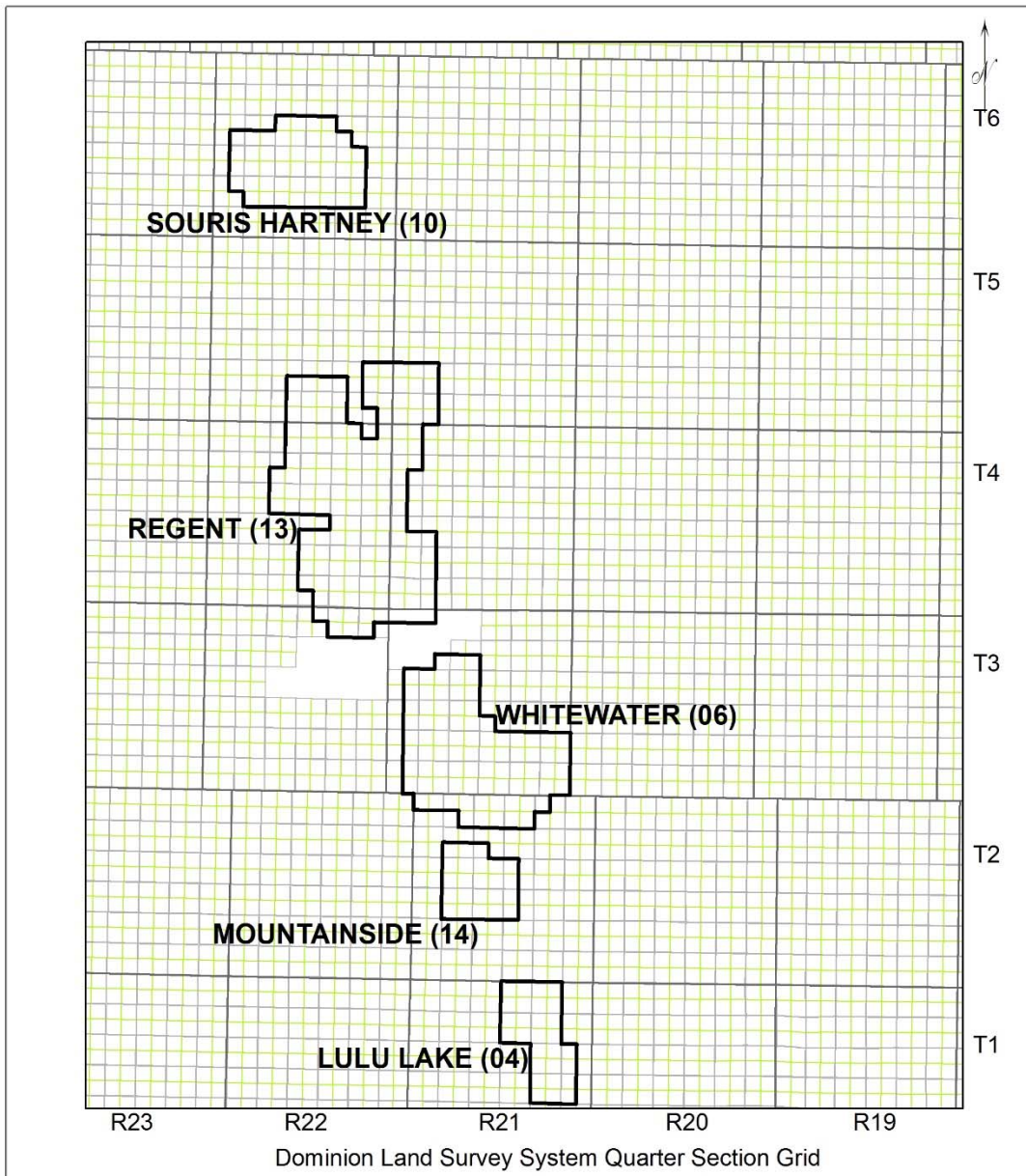


**Legend**

-  2018 Oil Fields
-  Township Grid
-  Section Grid
-  Quarter Section Grid



*Figure 8: Map 6; Waskada Field.*



**Map 7**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch



**Legend**

- 2018 Oil Fields
- Township Grid
- Section Grid
- Quarter Section Grid



*Figure 9: Map 7; Souris Hartney, Regent, Whitewater, Mountainside & Lulu Lake fields.*

## MANITOBA'S DESIGNATED POOLS

Effective **January 1, 2018** the following oil pools are designated under clause 11(4)(a) of the Oil and Gas Act.

A list of all Manitoba oil pools can be found in Table 2, with their respective discovery or reference well. A graphic representation of the area encompassed by each oil pool is shown in Figures 10 to 43 by stratigraphic interval. The listing of Manitoba Pool Codes by Formation can be found in Appendix B. The stratigraphy of the Williston Basin in Manitoba showing the stratigraphic intervals by Period, Epoch, Group, Formation and Member can be found in Appendix C.

Pool codes are assigned in the following manner: Each oil pool is given a two digit formation code number followed by a letter designation denoting the sequence of discovery; this pool code follows the two digit field code and is comprised of three to five digits.



*Table 2: Manitoba's designated pools.*

POOL	FIELD POOL CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
<b>DALY SINCLAIR FIELD</b>				
Upper Amaranth A	01 23A	18	102/09-35-009-28W1/00	695.2-698.2
Lodgepole A	01 59A	20	100/14-04-010-28W1/00	725.4-821.4
Lodgepole C	01 59C	20	100/03-33-008-27W1/00	736.7-837.0
Lodgepole I	01 59I	20	100/05-07-010-29W1/00	822.0-865.0
Lodgepole K	01 59K	20	100/08-30-010-29W1/00	788.0-877.5
Lodgepole P	01 59P	20	100/03-27-010-29W1/00	769.0-853.2
Lodgepole T	01 59T	20	100/08-17-010-29W1/00	808.0-813.0
Lodgepole W	01 59W	20	100/10-18-007-29W1/00	927.5-932.5
Lodgepole X	01 59X	20	100/02-21-007-28W1/00	
Lodgepole FF	01 59FF	20	100/12-11-011-29W1/00	730.5-733.5; 748.5-751
Lodgepole GG	01 59GG	20	100/06-16-011-29W1/00	744-783.3
Lodgepole HH	01 59HH	20	100/05-10-011-29W1/00	826.6-827.7
Lodgepole II	01 59II	20	100/11-27-011-29W1/00	836.5-838; 839-840
Lodgepole JJ	01 59JJ	16	102/12-34-011-29W1/00	730-748.2
Lodgepole KK	01 59KK	20	102/12-22-008-29W1/00	834.83
Lodgepole MM	01 59MM	20	102/01-14-008-29W1/00	846.93
Lodgepole NN	01 59NN	20	102/03-03-008-28W1/00	814.77-819.73
Lodgepole OO	01 59OO	20	102/09-29-008-29W1/00	871.02-877.05
Lodgepole PP	01 59PP	20	100/08-07-011-29W1/00	782.5-783.5
Bakken J	01 60J	21	100/07-18-010-27W1/02	780.3-784.6
Bakken- Torquay A	01 62A	21	100/01-22-010-29W1/00	859.5-866.0
Bakken- Torquay N	01 62N	21	103/04-24-010-28W1/02	814.0-917.0
Bakken- Torquay Q	01 62Q	21	100/08-30-009-27W1/00	834.0-873.0
Bakken- Torquay R	01 62R	21	100/16-31-009-27W1/02	832.5-834.5
Bakken- Torquay X	01 62X	21	100/03-34-006-29W1/00	1029-1041
Bakken- Torquay Z	01 62Z	21	100/07-16-011-29W1/00	753-757.5; 842-846
Bakken- Torquay CC	01 62CC	21	100/12-24-011-29W1/00	837-840; 842-846
Bakken- Torquay DD	01 62DD	21	100/12-34-010-27W1/00	765-774.34
Bakken- Torquay GG	01 62GG	21	102/02-30-006-29W1/00	1096.18-1106.81
Bakken- Torquay HH	01 62HH	21	102/01-26-010-27W1/00	770.22-782.03
Bakken- Torquay II	01 62II	21	100/16-18-006-29W1/00	1099-1105.95
Torquay B	01 65B	22	100/09-30-007-28W1/00	969.0-971.0
<b>TILSTON FIELD</b>				
Mission Canyon 1 A	02 44A	32	100/06-31-005-29W1/00	940.0-969.0
Mission Canyon 1 C	02 44C	32	100/02-08-006-29W1/00	925.0-940.0

POOL	CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
Mission Canyon 1 D	02 44D	32	100/11-15-006-29W1/00	907.0-910.5
Bakken- Torquay A	02 62A	33	100/13-29-005-29W1/00	1118.7-1120.7
<b>WASKADA FIELD</b>				
Favel A	03 10A	34	100/01-03-002-25W1/02	479.5-841.0
Favel B	03 10B	34	100/03-27-001-25W1/02	478.0-479.5
Favel C	03 10C	34	100/10-17-001-24W1/00	481.5-484.5
Lower Amaranth A	03 29A	35	100/11-30-001-25W1/03	884.5-920.5
Lower Amaranth I	03 29I	35	100/03-01-001-25W1/00	873.7-910.0
Lower Amaranth J	03 29J	35	100/01-03-001-25W1/00	885.0-920.5
Lower Amaranth O	03 29O	35	100/13-10-002-24W1/00	869.5-879.5
Lower Amaranth P	03 29P	35	100.04-05-001-23W1.02	970.5-972.0
Mission Canyon 3b A	03 42A	36	100/11-30-001-25W1/03	920.5-929.6
Mission Canyon 3b B	03 42B	36	100/13-27-001-26W1/00	920.0-936.5
Mission Canyon 3b C	03 42C	36	100/05-07-001-25W1/00	931.5-941.0
Mission Canyon 3b E	03 42E	36	100/04-08-001-25W1/00	936.0-948.0
Mission Canyon 3b F	03 42F	36	100/11-22-001-26W1/02	929.5-948.0
Mission Canyon 3b G	03 42G	36	100/11-05-002-26W1/00	929.0-955.5
Mission Canyon 3a A	03 43A	37	100/01-25-001-26W1/00	928.0-950.0
Mission Canyon 3a B	03 43B	37	100/12-23-001-25W1/00	904.6-912.6
Mission Canyon 3a C	03 43C	37	100/12-26-001-26W1/00	924.0-940.0
Mission Canyon 3a D	03 43D	37	100/10-30-001-25W1/00	921.0-931.0
Mission Canyon 3a E	03 43E	37	100/02-12-001-26W1/02	930.0-944.0
Mission Canyon 3a F	03 43F	37	100/15-05-001-25W1/00	931.0-941.0
Mission Canyon 3a G	03 43G	37	100/12-31-001-25W1/00	912.5-929.0
Mission Canyon 3a H	03 43H	37	100/06-18-002-251W1/00	899.0-907.0
Mission Canyon 3a I	03 43I	37	100/07-35-001-26W1/00	917.0-935.0
Mission Canyon 3a K	03 43K	37	100/06-19-001-25W1/00	924.0-934.0
Mission Canyon 3a L	03 43L	37	100/08-32-001-25W1/00	909.5-917.0
Mission Canyon 3a M	03 43M	37	100/10-10-001-25W1/00	915.0-925.0
Mission Canyon 3a N	03 43N	37	100/02-20-001-25W1/00	919.5-930.0
Mission Canyon 3a O	03 43O	37	100/10-04-001-25W1/00	931.5-933
Mission Canyon 1 A	03 44A	38	100/01-30-001-25W1/00	917.4-947.9
Mission Canyon 1 B	03 44B	38	100/09-13-001-26W1/00	920.5-967.4
Mission Canyon 1 C	03 44C	38	100/02-22-001-25W1/00	908.3-943.0
Mission Canyon 1 D	03 44D	38	100/04-09-002-25W1/00	986.0-912.0
Mission Canyon 1 E	03 44E	38	100/06-33-001-25W1/00	905.5-942.0
Mission Canyon 1 F	03 44F	38	100/02-27-001-25W1/00	902.5-930.0

POOL	CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
Mission Canyon 1 G	03 44G	38	100/04-05-001-24W1/00	910.0-937.0
Mission Canyon 1 H	03 44H	38	100/03-24-001-25W1/00	898.0-910.0
Mission Canyon 1 I	03 44I	38	100/02-14-002-25W1/00	882.0-915.0
Mission Canyon 1 J	03 44J	38	100/04-24-002-26W1/00	898.0-900.0
Mission Canyon 1 K	03 44K	38	100/02-33-001-24W1/00	871.7-900.0
Mission Canyon 1 L	03 44L	38	100/04-12-001-24W1/00	941.5-946.0
Mission Canyon 1 M	03 44M	38	100/09-25-001-24W1/00	939.5-941.5
Mission Canyon 1 N	03 44N	38	100/06-07-001-24W1/00	897.5-898.5
Mission Canyon 1 O	03 44O	38	100/13-09-002-24W1/00	865.0-873.0
Mission Canyon 1 P	03 44P	38	100/15-10-002-24W1/00	888.8-893.8
Mission Canyon 1Q	03 44Q	38	100/07-06-002-24W1/00	876.5-878.5
<b>LULU LAKE FIELD</b>				
Lodgepole WL A	04 52A	41	100/08-23-001-21W1/00	1008.5-1027.0
Lodgepole WL B	04 52B	41	100/15-27-001-21W1/00	1005.5-1024.0
<b>VIRDEN FIELD</b>				
Reston A	05 21A	23	100/08-06-012-26W1/00	569-574
Lodgepole A	05 59A	25	102/06-27-011-26W1/00	563.9-667.0
Lodgepole B	05 59B	25	100/06-28-010-26W1/00	623.0-726.0
Lodgepole C	05 59C	25	100/10-21-009-25W1/00	595.0-648.0
Lodgepole D	05 59D	25	100/07-11-009-25W1/00	598.9-655.3
Lodgepole E	05 59E	25	100/07-26-009-26W1/00	634.0-732.1
Lodgepole G	05 59G	25	100/10-01-011-27W1/00	647.0-710.0
Lodgepole K	05 59K	25	100/15-16-011-27W1/00	895.2
<b>WHITEWATER FIELD</b>				
Lower Amaranth A	06 29A	40	100/04-21-003-21W1/02	745.0-757.7
Lodgepole WL A	06 52A	41	100/16-17-003-21W1/00	759.6-786.1
Lodgepole WL B	06 52B	41	100/16-02-003-21W1/00	790.5-812.5
Lodgepole Virden A	06 53A	42	100/05-12-003-21W1/00	787.0-804.5
<b>PIERSON FIELD</b>				
Lower Amaranth A	07 29A	27	100/04-26-003-28W1/00	915.7-949.5
Lower Amaranth B	07 29B	27	100/12-30-002-28W1/02	955.0-992.0
Lower Amaranth L	07 29L	27	100/02-26-001-29W1/00	1000.0-1038.0
Lower Amaranth S	07 29S	27	100/02-31-002-29W1/00	
Lower Amaranth T	07 29T	27	100/15-32-001-29W1/02	
Lower Amaranth U	07 29U	27	100/11-35-002-28W1/00	962.18-964.3

POOL	CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
Lower Amaranth V	07 29V	27	100/11-35-002-28W1/00	952.94
Lower Amaranth W	07 29W	27	100/06-07-002-29W1/00	1029.5-1032.5
Lower Amaranth X	07 29X	27	102/01-03-003-29W1/00	1000.2-1003.76
Lower Amaranth – Mission Canyon 3b A	07 35A	28	100/14-17-002-29W1/02	1023.5-1028.5; 1036.5-1038.8
Lower Amaranth – Mission Canyon 3b B	07 35B	28	100/01-35-002-28W1/00	959.0-963.0; 950.5-956.5
Lower Amaranth – Mission Canyon 3b C	07 35C	28	100/11-34-002-28W1/00	974-975; 955-961
Lower Amaranth – Mission Canyon 3b D	07 35D	28	100/15-20-002-28W1/02	975.0-979.0; 988.5-990
Mission Canyon 3 B	07 41B	29	100/14-05-002-28W1/02	1007.5-1030.0
Mission Canyon 3 C	07 41C	29	100/12-06-003-29W1/00	1165.0-1605.0 MD
Mission Canyon 3 D	07 41D	29	100/07-21-001-27W1/00	
Mission Canyon 3b B	07 42B	30	100/08-07-003-28W1/00	981.5-990.6
Mission Canyon 3b C	07 42C	30	100/06-17-003-29W1/00	1002.0-1016.0
Mission Canyon 3b D	07 42D	30	100/13-32-002-29W1/00	1021.1-1033.3
Mission Canyon 3b E	07 42E	30	100/11-30-002-28W1/00	990.0-1002.0
Mission Canyon 3b J	07 42J	30	100/13-33-001-28W1/00	1002.0-1026.0
Mission Canyon 3b K	07 42K	30	100/05-30-001-28W1/00	1025.0-1043.5
Mission Canyon 3b L	07 42L	30	100/06-23-002-29W1/00	1012-1020
Mission Canyon 3b M	07 42M	30	100/08-06-002-27W1/00	967.7-969.7
Mission Canyon 3b N	07 42N	30	100/04-34-002-28W1/00	974.5-975.8
Mission Canyon 3b O	07 42O	30	100/09-26-002-28W1/00	963-965
Mission Canyon 3b Q	07 42Q	30	100/10-29-002-29W1/00	1029.5-1031.5
Mission Canyon 3b R	07 42R	30	104/07-21-001-27W1/00	971.69-976.67
Mission Canyon 3a A	07 43A	31	100/08-16-003-29W1/00	999.7-1018.0
Mission Canyon 3a B	07 43B	31	100/09-18-003-28W1/00	976.9-990.6
Mission Canyon 3a E	07 43E	31	100/06-10-003-28W1/00	970.3-985.0
Mission Canyon 3a F	07 43F	31	100/14-05-003-29W1/03	1085.0-1385.0 MD
Mission Canyon 3a G	07 43G	31	100/06-36-002-29W1/02	1002.8-1003.85
Mission Canyon 3a H	07 43H	31	100/10-29-002-29W1/00	1029.5-1031.5
Mission Canyon 1 A	07 44A	32	100/04-25-003-28W1/00	948.0-980.0
<b>KIRKELLA FIELD</b>				
Lodgepole Dolomite A	09 51A	13	100/14-08-012-29W1/00	725.0-742.0
Lodgepole Dolomite B	09 51B	13	100/04-19-012-29W1/00	729.0-744.0

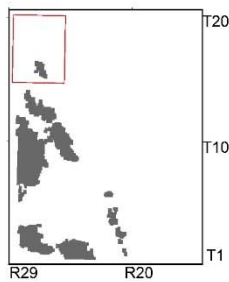
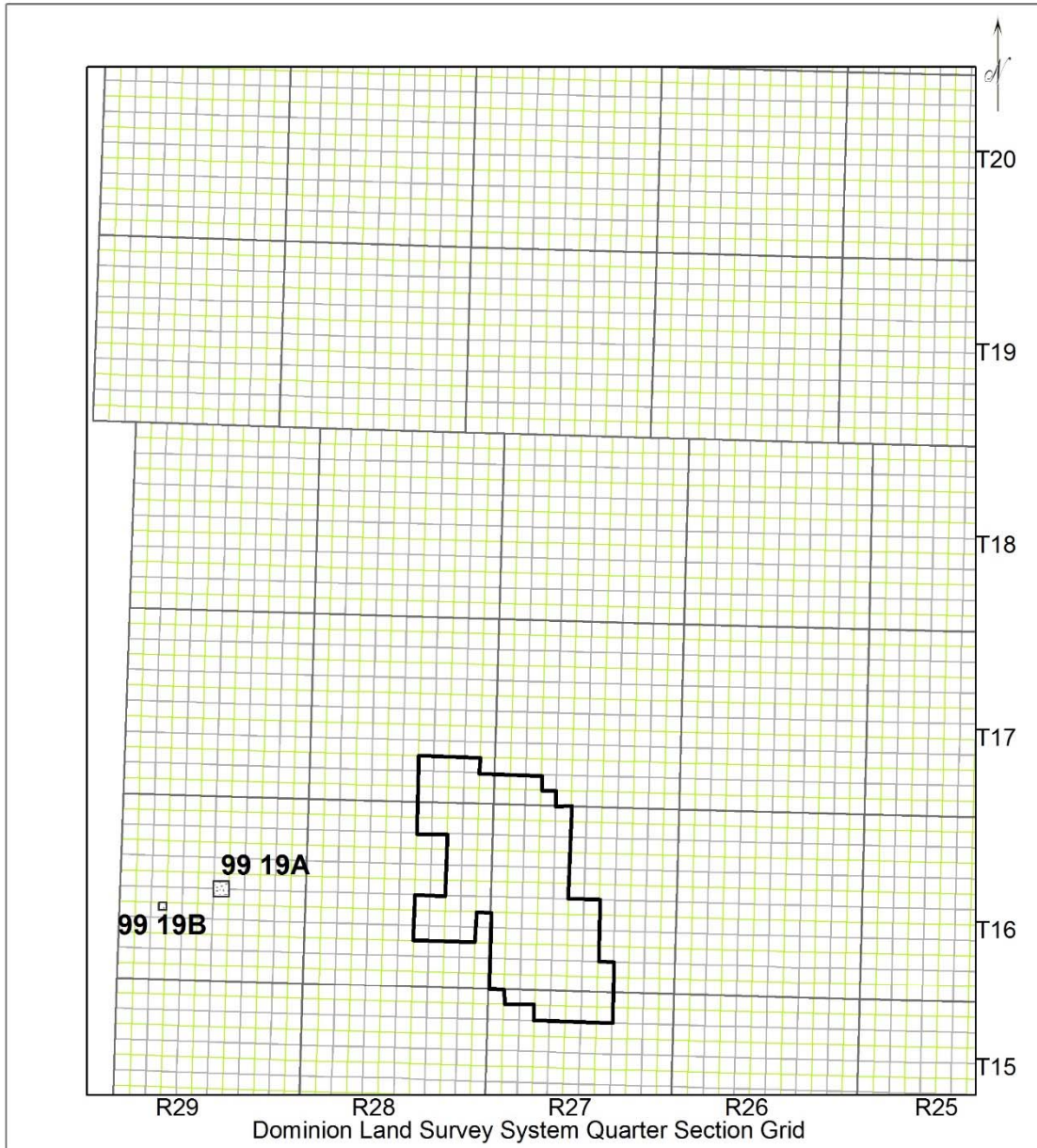
POOL	CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
Lodgepole Daly A	09 54A	14	100/14-10-012-29W1/00	722.4-734.3
Lodgepole Daly B	09 54B	14	100/05-17-012-29W1/00	746.0-755.0
Lodgepole Daly C	09 54C	14	100/04-18-012-29W1/00	745.5-757.0
Lodgepole Daly D	09 54D	14	100/14-01-012-29W1/00	714.0-740.0
Lodgepole Daly E	09 54E	14	100/16-06-012-29W1/00	746.0-758.0
Lodgepole Crinoidal A	09 55A	15	100/10-03-012-29W1/00	758.0-761.5
Lodgepole Crinoidal B	09 55B	15	100/11-15-012-29W1/00	716.0-720.0 md
Lodgepole Crinoidal C	09 55C	15	100/15-10-012-29W1/00	715.0-729.0
Lodgepole A	09 59A	16	100/16-16-12-29W1/03	741.5-742.5; 752.5-753.5
Lodgepole B	09 59B	16	100/04-36-011-29W1/00	741.5-745
Bakken-Torquay A	09 62A	17	100/12-15-012-29W1/02	786.5-791.5
Bakken-Torquay B	09 62B	17	100/16-03-012-29W1/02	809.0-811.0
Bakken-Torquay C	09 62C	17	100/14-35-011-29W1/00	817-818.5
Bakken-Torquay D	09 62D	17	102/04-36-011-29W1/02	828.5-835
<b>SOURIS HARTNEY FIELD</b>				
Lodgepole Virden A	10 53A	42	100/04-16-006-22W1/00	653.2-671.8
<b>REGENT FIELD</b>				
Lodgepole WL A	13 52A	41	100/16-02004-22W1/00	761.5-780.0
Lodgepole WL B	13 52B	41	100/15-21-004-22W1/00	758.6-777.8
Lodgepole Virden A	13 53A	42	100/06-07-004-21W1/00	766.9-781.8
Lodgepole Virden B	13 53B	42	100/14-13-004-22W1/00	759.0-780.0
Lodgepole Virden D	13 53D	42	100/12-31-004-21W1/00	733.0-738.4
Lodgepole Virden E	13 53E	42	100/02-07-005-21W1/00	713.5-715
<b>MOUNTAINSIDE FIELD POOL</b>				
Lodgepole WL A	14 52A	41	103/11-16-002-21W1/00	1078.0-1451.4
<b>BIRDTAIL FIELD</b>				
Bakken A	15 60A	11	100/05-04-016-27W1/00	518.5-524.5
Bakken-Torquay A	15 62A	11	100/09-30-016-27W1/00	535.5-538
Bakken-Torquay D	15 62D	11	100/04-14-016-28W1/00	449.72-459.1
<b>MANSON FIELD</b>				
Reston-Amaranth-Lodgepole A	17 22A	12	100.01-34-012-27W1.00	556-557

POOL	CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
Reston-Amaranth-Lodgepole B	17 22B	12	100.04-27-012-27W1.00	565-566
Reston-Amaranth-Lodgepole C	17 22C	12	100.16-19-012-26W1.00	548-551
Reston-Amaranth-Lodgepole D	17 22D	12	100.07-01-013-27W1.00	537-538.8
Reston-Amaranth-Lodgepole E	17 22E	12	100.03-31-012-26W1.00	538.9-540.9
Reston-Amaranth-Lodgepole F	17 22F	12	100.04-19-012-26W1.00	560.0-562.4
Bakken-Torquay A	17 62A	17	100/01-34-012-28W1/00	700.41-707.44
Bakken-Torquay B	17 62B	17	100/14-09-013-28W1/00	672-674
Bakken-Torquay G	17 62G	17	100/04-06-014-28W1/00	
Bakken-Torquay H	17 62H	17	100/11-04-014-28W1/00	625.7-629.2; 630.9-633.2
Bakken-Torquay J	17 62J	17	100.01-34-12-27W1.00	644-645
Bakken-Torquay K	17 62K	17	100.08-36-013-28W1.00	606-608
Bakken-Torquay L	17 62L	17	100.08-02-013-27W1.00	650.8-654
Bakken-Torquay M	17 62M	17	100.15-17-012-27W1.00	669.5-670; 671-672.8
<b>OTHER AREAS</b>				
Melita A	99 19A	10	100/14-15-016-29W1/00	432.3-446.0
Melita B	99 19B	10	100/06-17-016-29W1/00	438-441
Lower Amaranth-Lodgepole	99 40A	24	100/03-33-008-24W1/00	570.0-584.0
Mission Canyon 1 A	99 44A	38	100/08-31-002-23W1/00	812.0-843.0
Mission Canyon 1 D	99 44D	32 & 38	100/16-02-003-26W1/00	879.0-922.0
Mission Canyon 1 E	99 44E	32	100/16-06-006-28W1/00	905.0-908.0
Mission Canyon 1 G	99 44G	19 & 32	100/02-16-006-26W1/00	855.0-1229.0 MD
Mission Canyon 1 H	99 44H	19 & 32	100/03-13-006-27W1/00	786.5-790.0
Mission Canyon 1 J	99 44J	32	100/11-36-005-29W1/00	923.0-927.5
Mission Canyon 1 K	99 44K	19	100/09-02-007-27W1/00	777.0-779.5
Mission Canyon 1 L	99 44L	19	100/06-03-007-27W1/00	789.7-794.0
Mission Canyon 1 M	99 44M	38	100/05-35-002-24W1/00	842.0-845.0
Mission Canyon 1 O	99 44O	38	100/14-36-001-23W1/00	944-948
Mission Canyon 1 R	99 44R	32	100/12-21-005-28W1/00	905-908; 899-902
Lodgepole WL C	99 52C	41	100/13-19-004-22W1/00	762.0-775.7
Lodgepole Virden C	99 53C	39	100/05-32-002-23W1/00	827.0-828.5
Lodgepole I	99 59I	39	100/11-35-002-24W1/00	960.0-1955 MD, 1063-1308 MD
Lodgepole J	99 59J	39 & 43	100/10-18-005-22W1/00	757.0-759; 764.0-765.5
Lodgepole S	99 59S	43	100.04-31-006-21W1.00	623.3-627
Bakken-Torquay L	99 62L	33	100/05-08-004-29W1/00	1209.5-1214.5
Bakken-Torquay M	99 62M	33	100/10-08-006-28W1/00	1064.0-1066.0
Bakken- Torquay U	99 62U	21	100/01-11-010-27W1/00	779.7-789.4

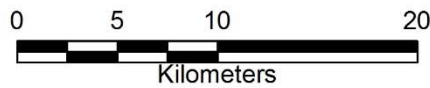
POOL	CODE	FIGURE #	REFERENCE WELL	
			UWI	TVD INTERVAL (meters KB)
Bakken- Torquay DD	99 62DD	11	100/15-32-017-28W1/00	511-513
Bakken- Torquay JJ	99 62JJ	17	100/08-10-012-28W1/02	740.62-759.93
Bakken- Torquay KK	99 62KK	17	100/09-23-011-28W1/00	821.11-824.91
Bakken- Torquay LL	99 62LL	11	100/04-25-015-27W1/00	527.7
Bakken-Torquay MM	99 62MM	17	100/14-21-014-28W1/00	594.5-595.5
Bakken-Torquay NN	99 62NN	11	100/03-26-018-29W1/00	478.5-486
Bakken-Torquay SS	99 62SS	11	100.04-21-016-29W1.00	540.77-561.45

**MANITOBA'S DESIGNATED POOL PLATS**





**Map 1**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

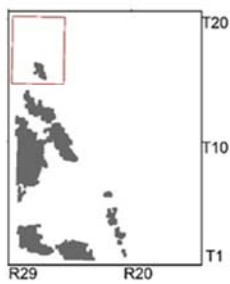
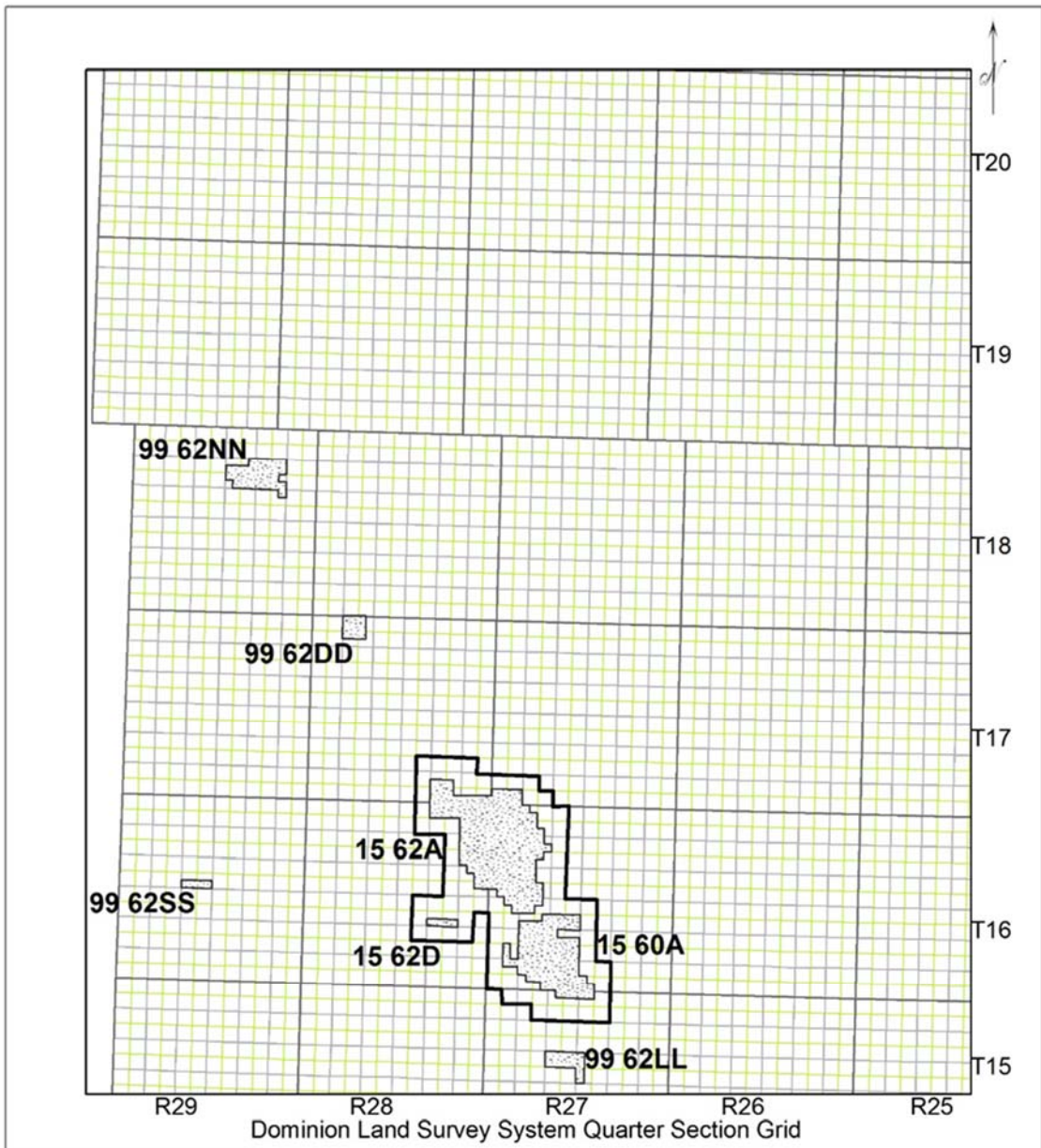


**Legend**

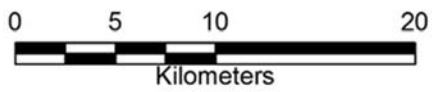
-  **2018 Oil Fields**
-  **Oil Pools**
-  **Township Grid**
-  **Section Grid**
-  **Quarter Section Grid**



*Figure 10: Map 1, Melita Formation pools (19).*



**Map 1**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

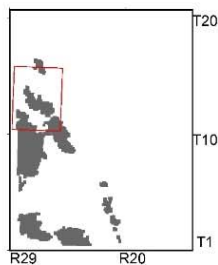
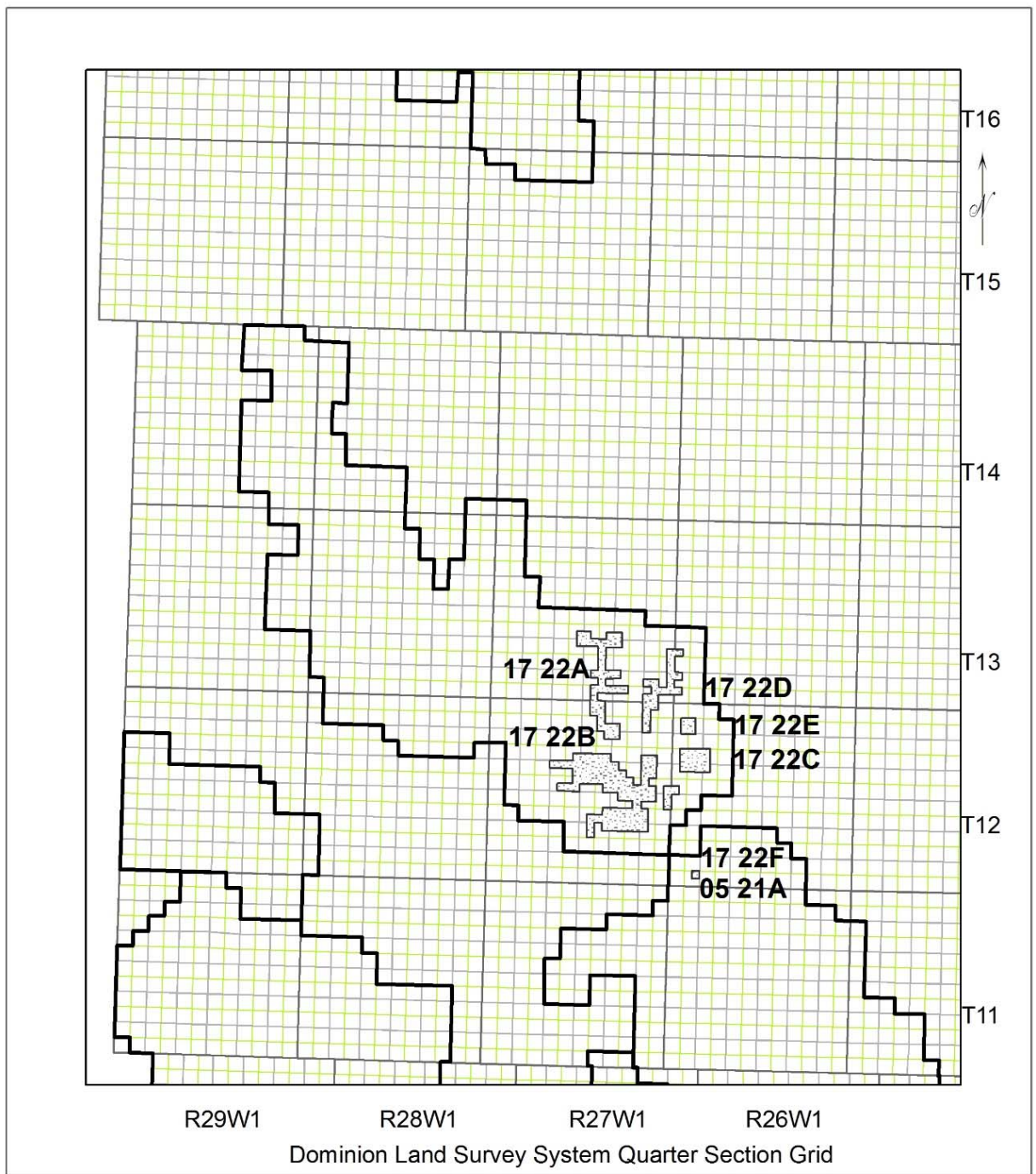


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



*Figure 11: Map 1; Bakken & Bakken-Torquay formation pools (60 & 62).*



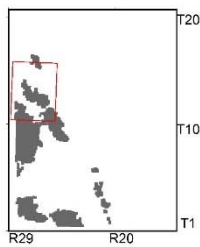
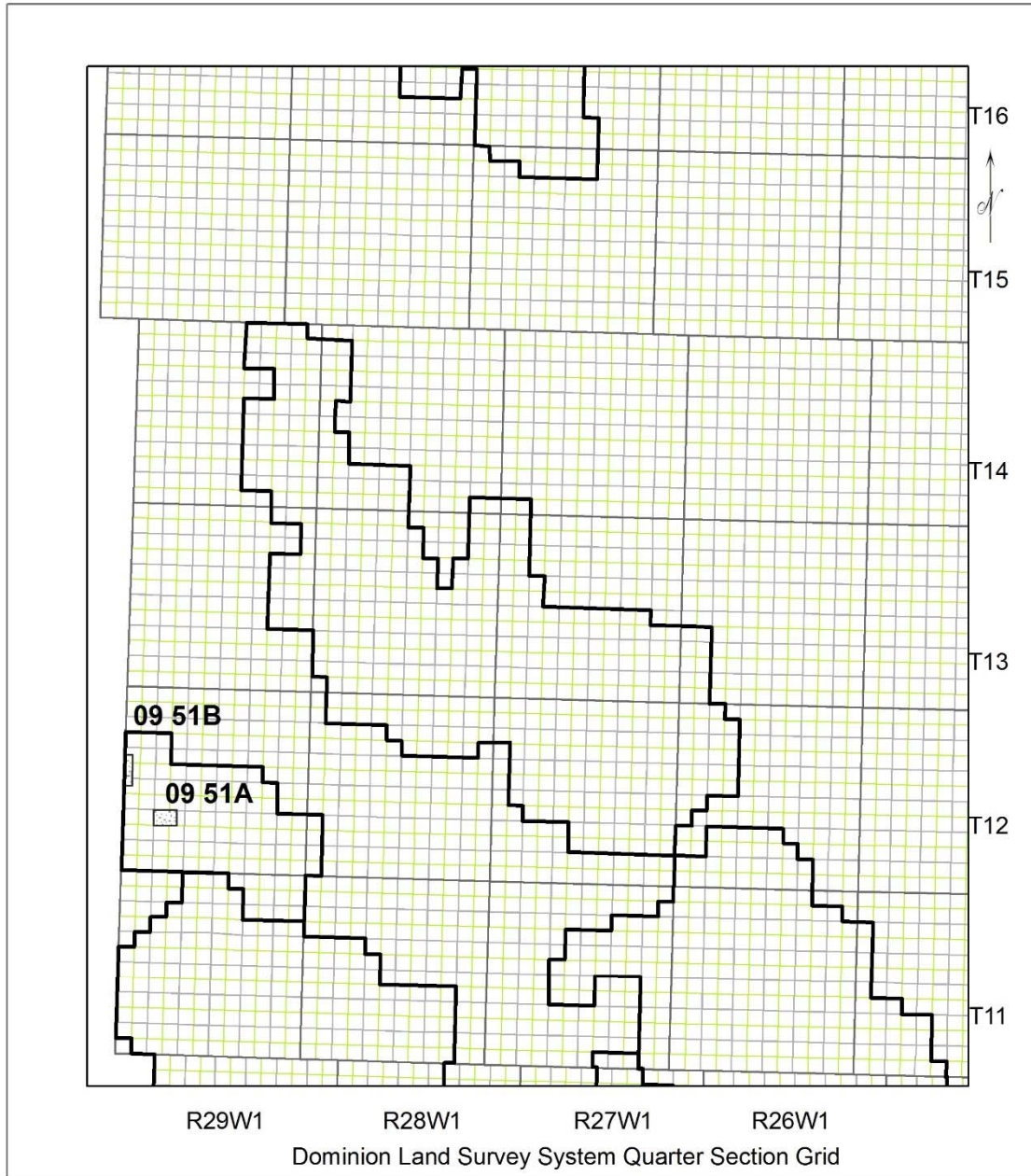
**Map 2**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula,  
 Petroleum Branch

0      5      10      20  
 kilometres

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - DLS township grid
  - DLS section grid
  - DLS quarter section grid









**Figure 12:** Map 2; Reston Formation (21) & Reston-Amaranth-Lodgepole formations pools (22).

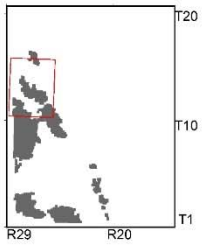
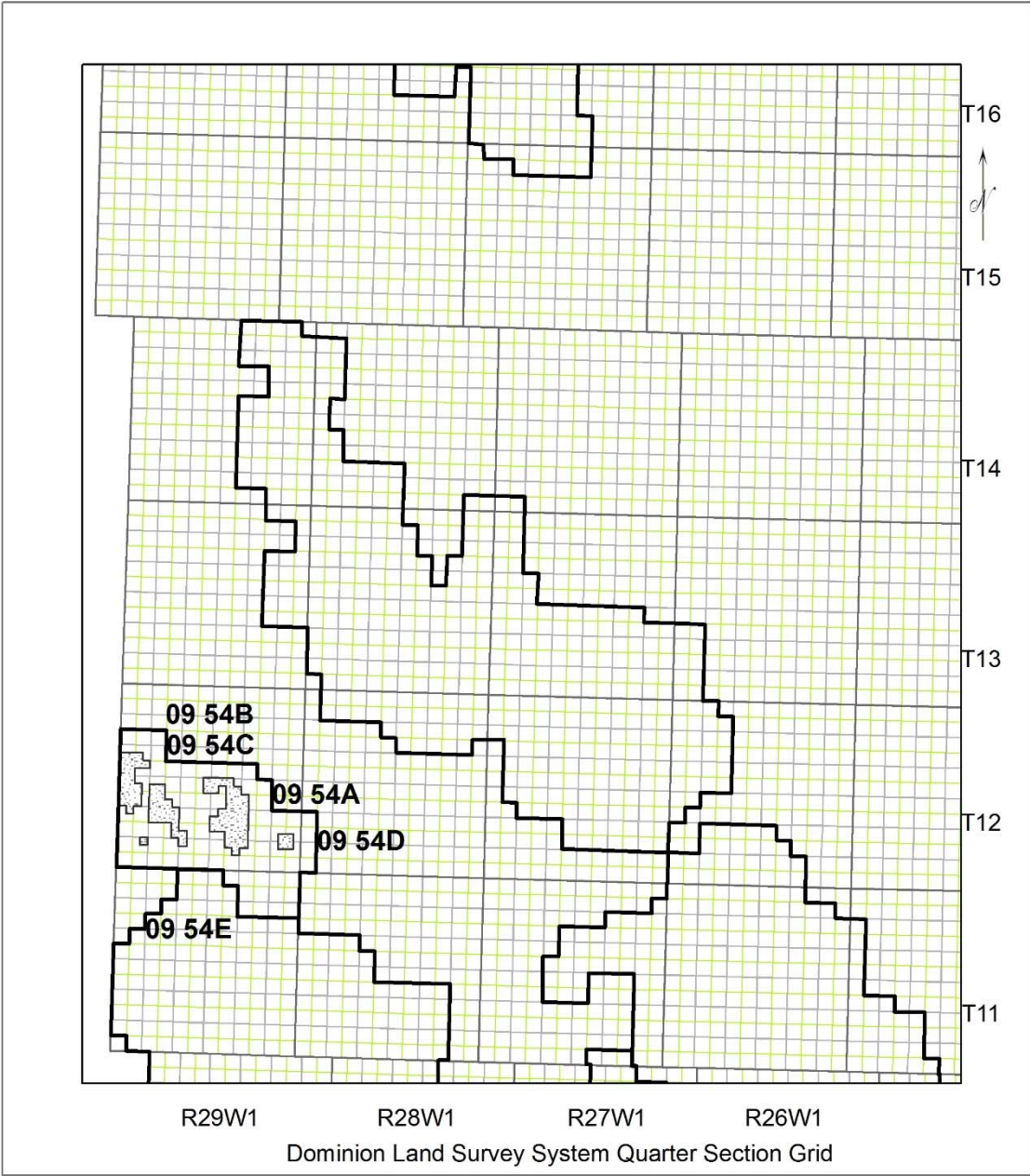


**Map 2**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula,  
 Petroleum Branch

0      5      10      20  
 kilometres

- Legend**
-  2018 Oil Fields
  -  Oil Pools
  -  DLS township grid
  -  DLS section grid
  -  DLS quarter section grid
- Manitoba** 

*Figure 13: Map 2; Lodgepole dolomite pools (51).*



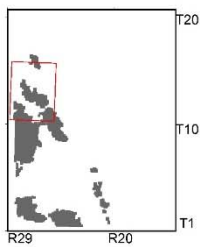
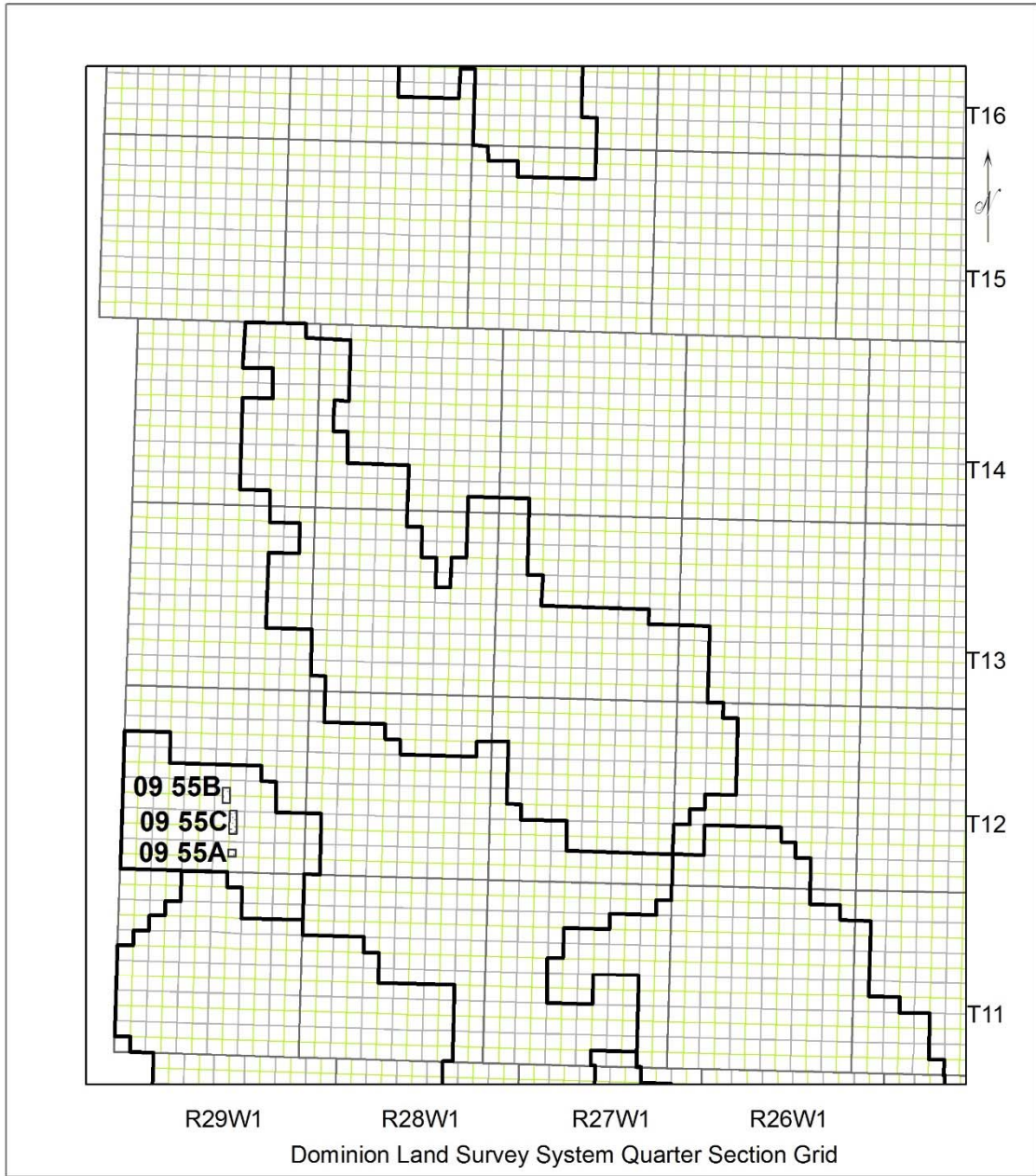
**Map 2**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula,  
 Petroleum Branch

0      5      10      20  
 kilometres

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - DLS township grid
  - DLS section grid
  - DLS quarter section grid









**Figure 14:** Map 2; Lodgepole Formation Daly Member pools (54).

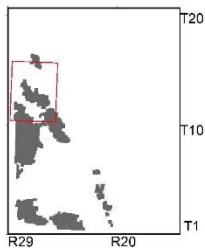
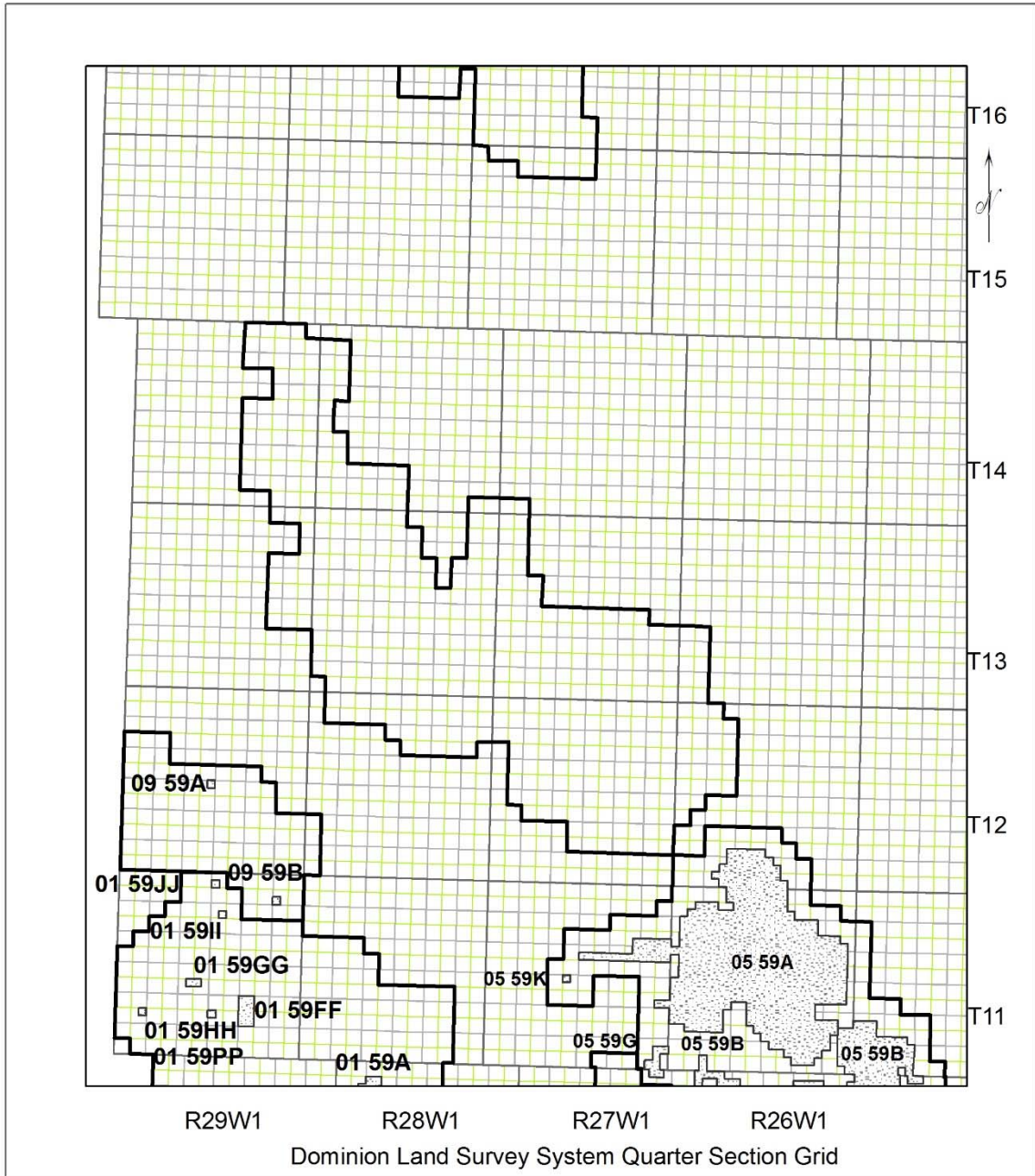


**Map 2**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula,  
 Petroleum Branch

0      5      10      20  
 kilometres

- Legend**
-  2018 Oil Fields
  -  Oil Pools
  -  DLS township grid
  -  DLS section grid
  -  DLS quarter section grid
- Manitoba** 

*Figure 15: Map 2; Lodgepole Formation Cruikshank Crinoidal Member pools (55).*



**Map 2**

Manitoba's Designated Fields & Pools  
Well Information: January 1, 2018  
Geology by: P. Fulton-Regula,  
Petroleum Branch

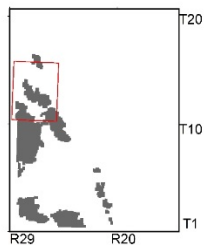
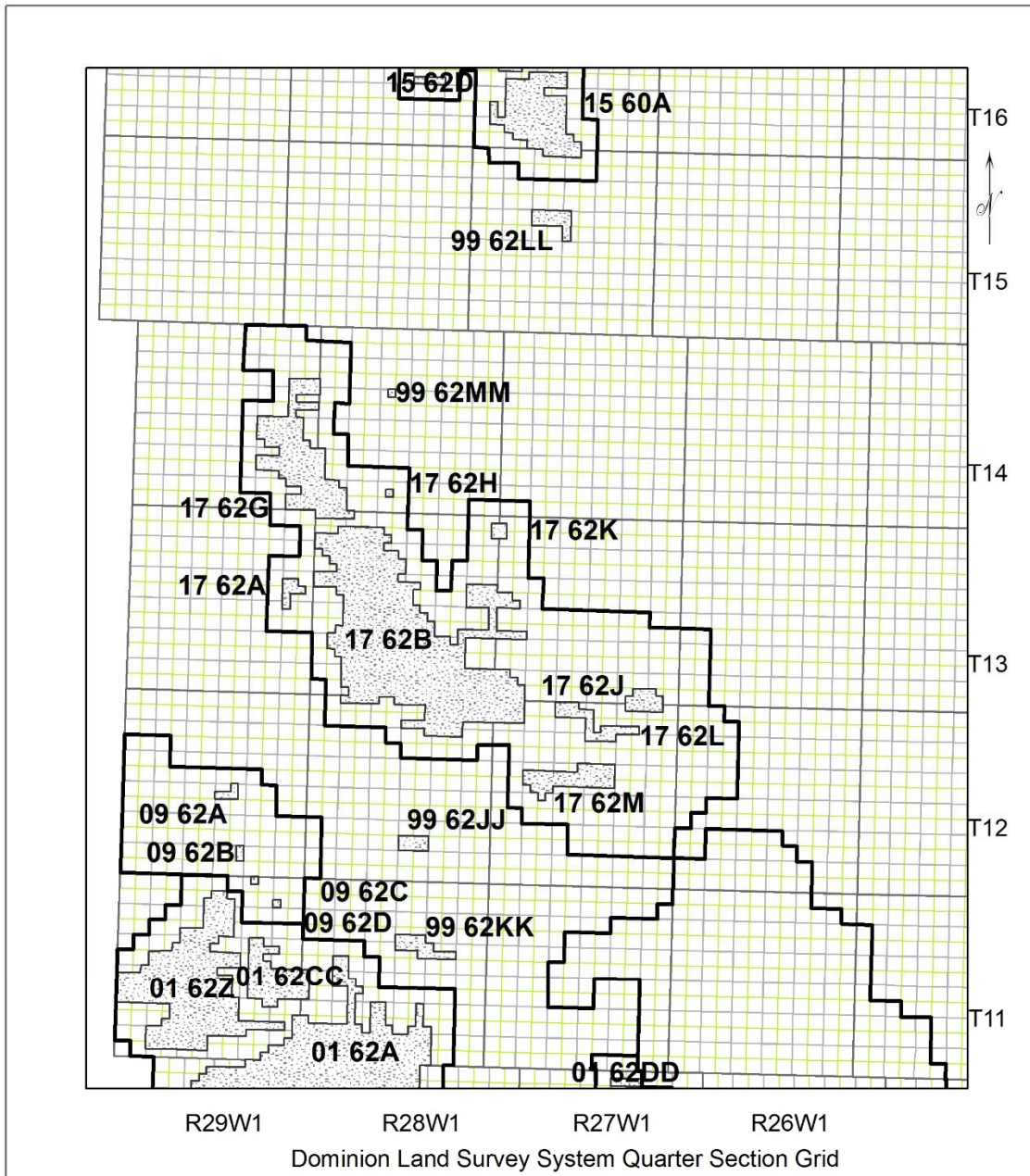


**Legend**

- 2018 Oil Fields
- Oil Pools
- DLS township grid
- DLS section grid
- DLS quarter section grid



*Figure 16: Map 2; Lodgepole Formation undifferentiated pools (59).*



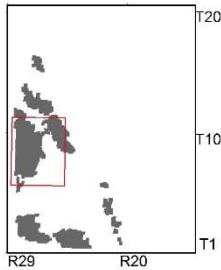
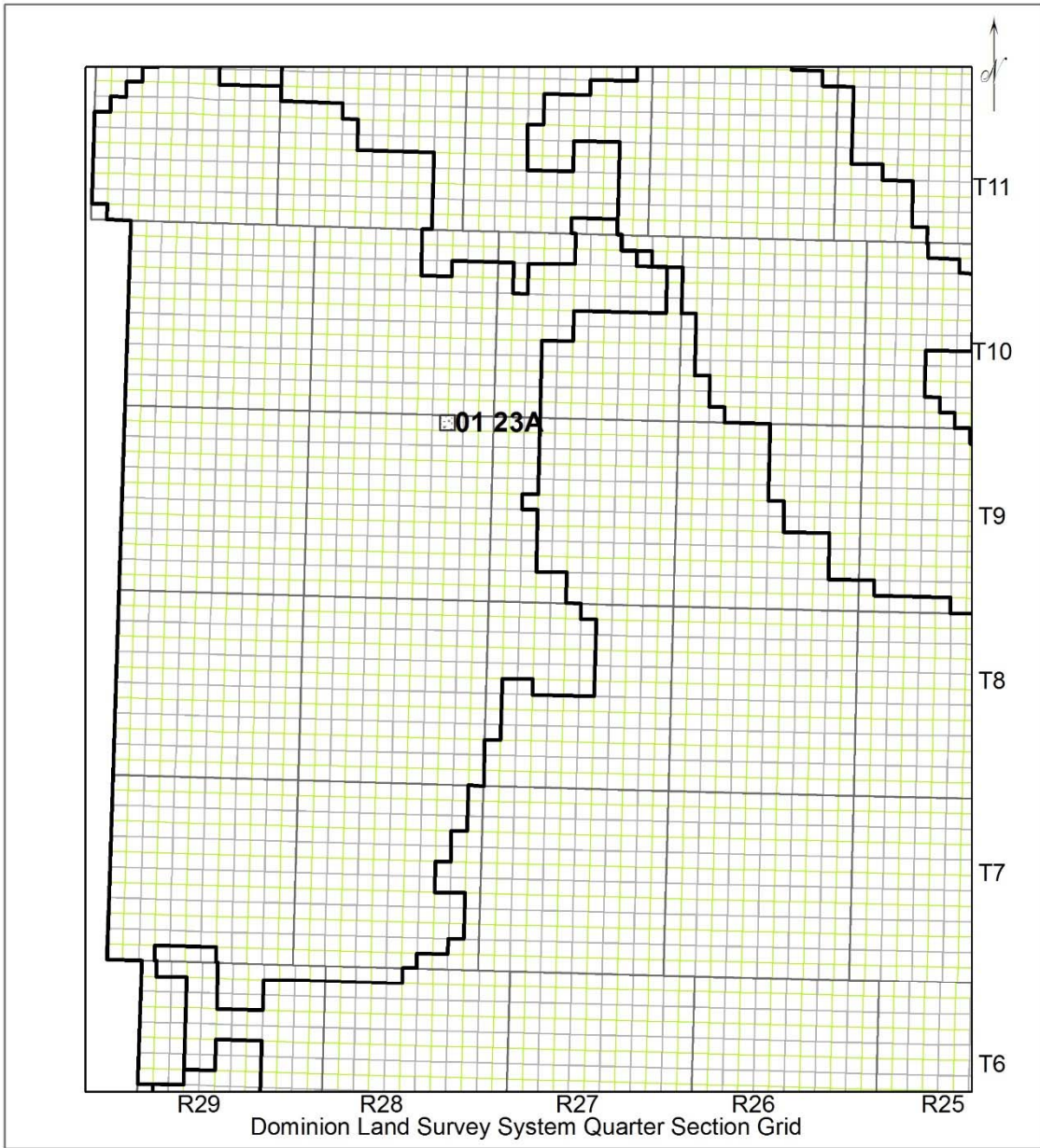
**Map 2**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula,  
 Petroleum Branch

0 5 10 20  
 kilometres

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - DLS township grid
  - DLS section grid
  - DLS quarter section grid
- Manitoba**

Figure 17: Map 2; Bakken-Torquay formation pools (60 & 62).





**Map 3**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

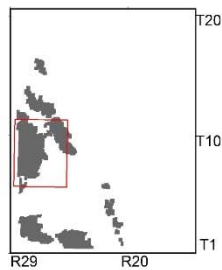
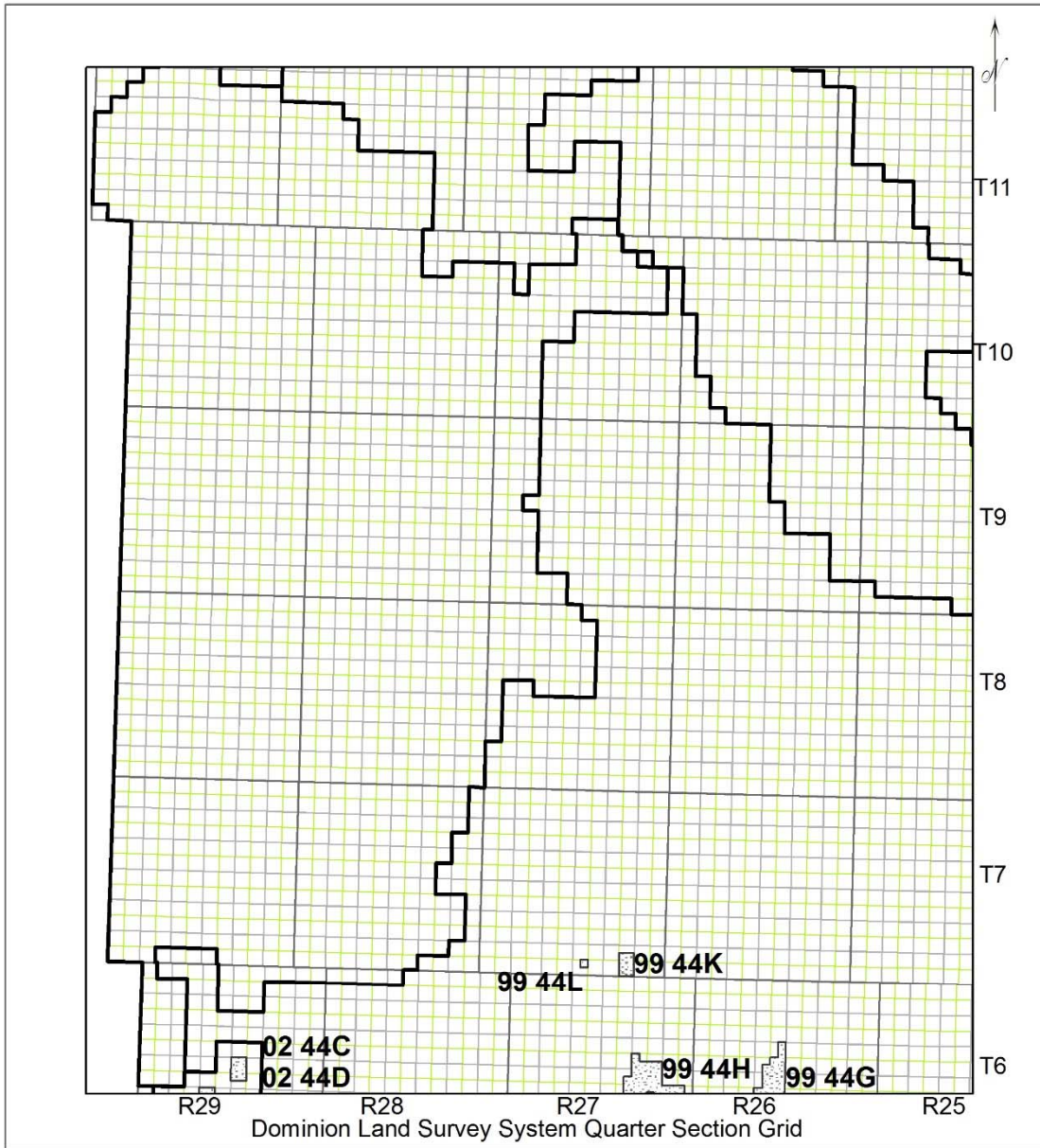


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



**Figure 18:** Map 3; Amaranth Formation Upper Amaranth Member pools (23).



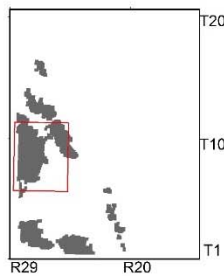
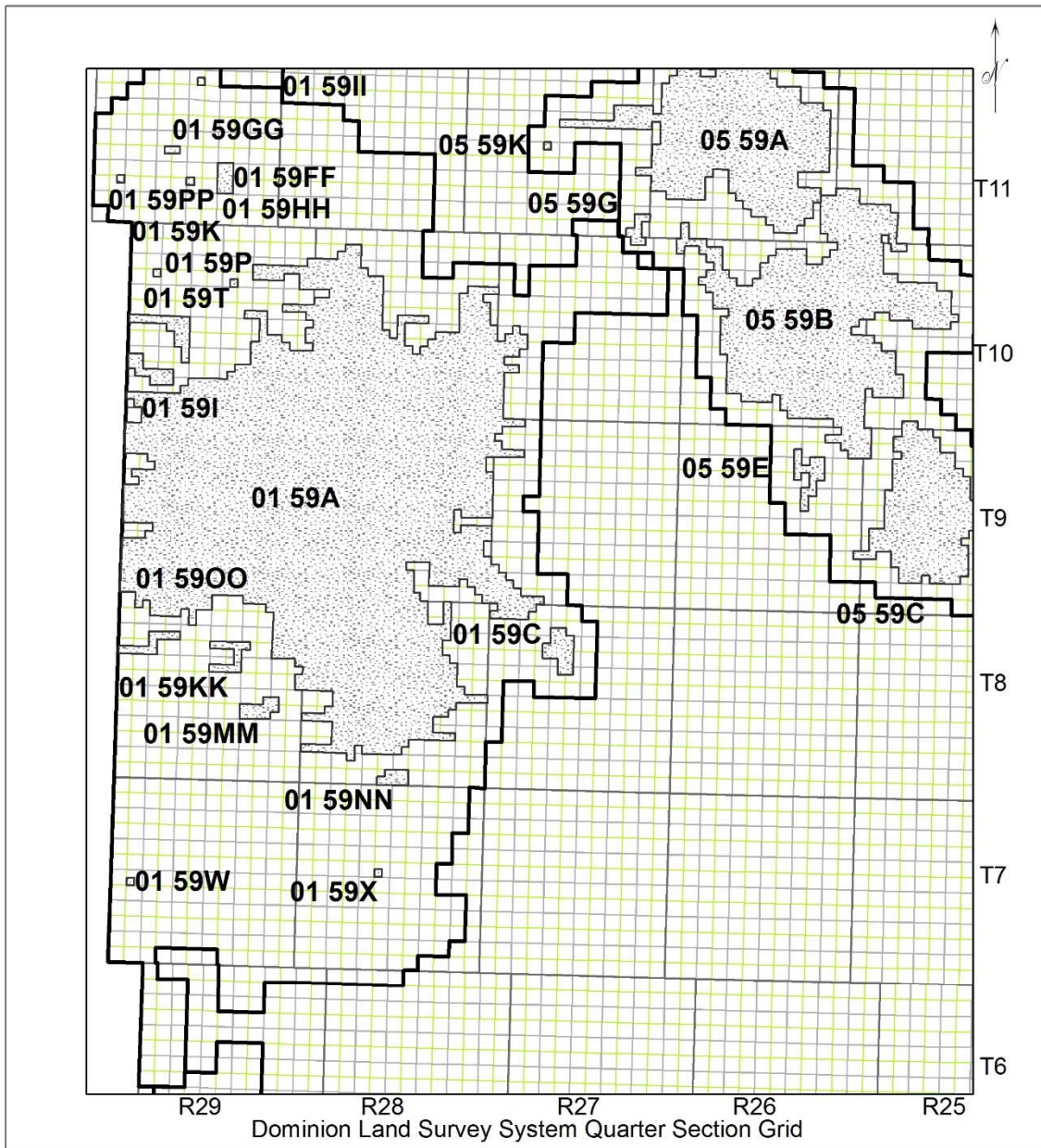
**Map 3**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0      5      10      20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid



*Figure 19: Map 3; Mission Canyon Formation MC-1 Member pools (44).*



### Map 3

Manitoba's Designated Fields & Pools  
Well Information: January 1, 2018  
Geology by: P. Fulton-Regula  
Petroleum Branch

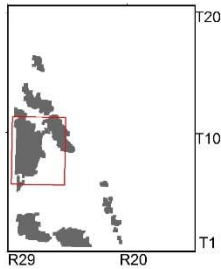
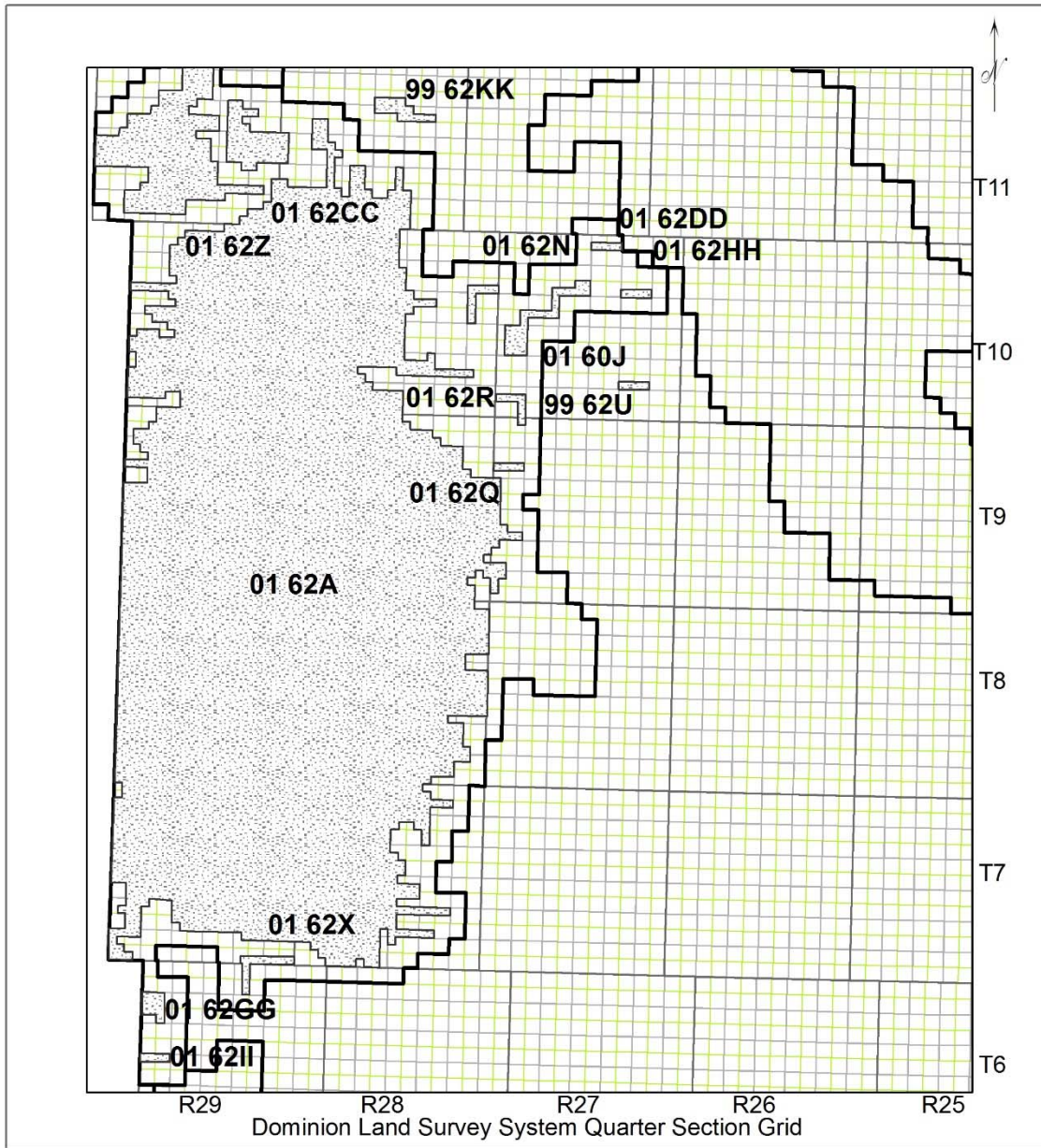


### Legend

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



Figure 20: Map 3; Lodgepole Formation undifferentiated pools (59).



**Map 3**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

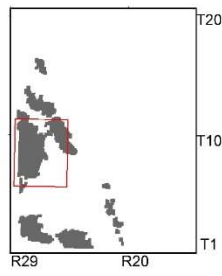
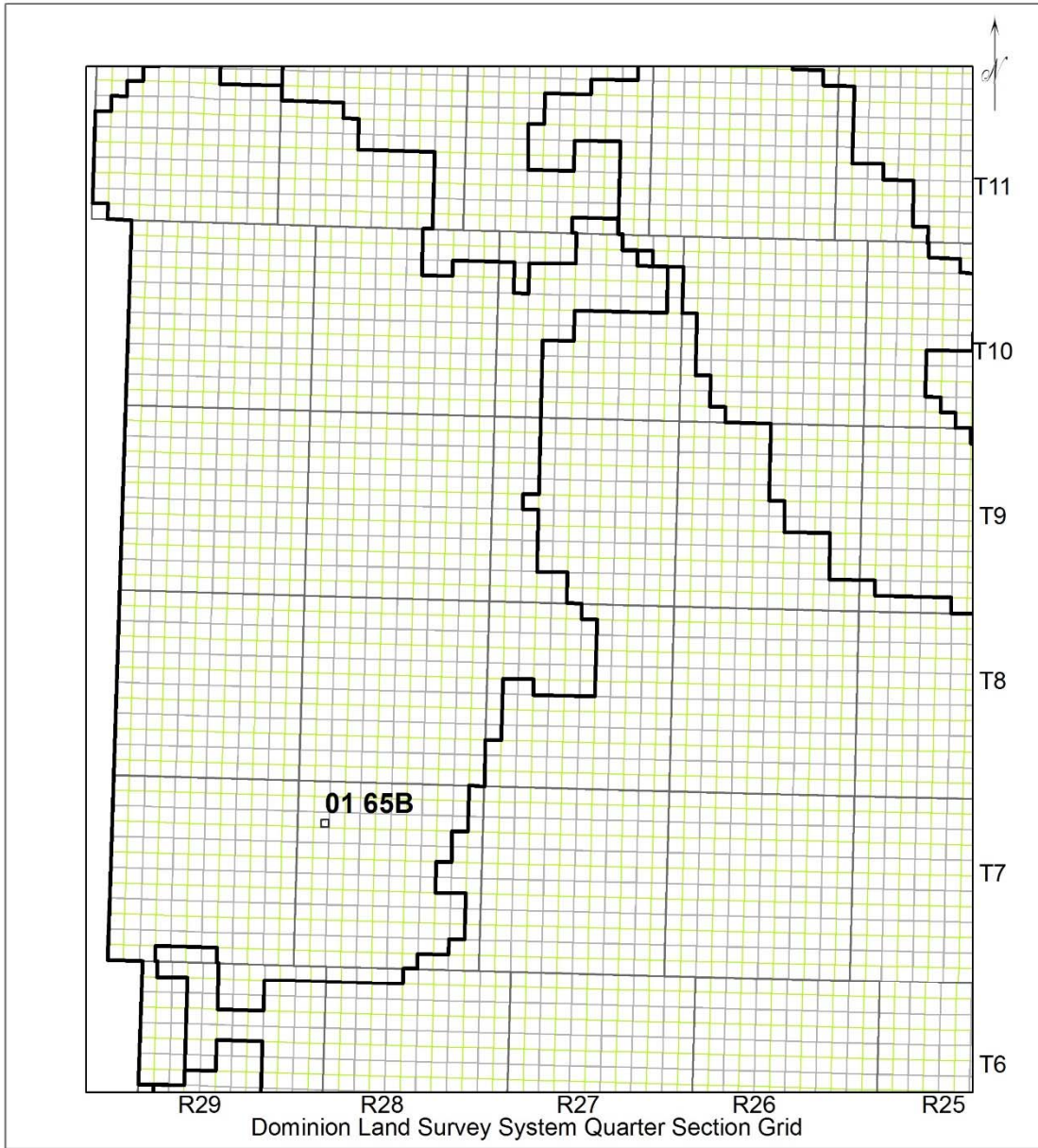


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



Figure 21: Map 3; Bakken & Bakken-Torquay formation pools (60 & 62).



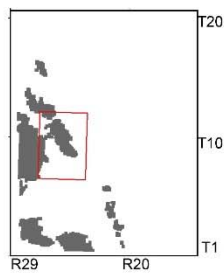
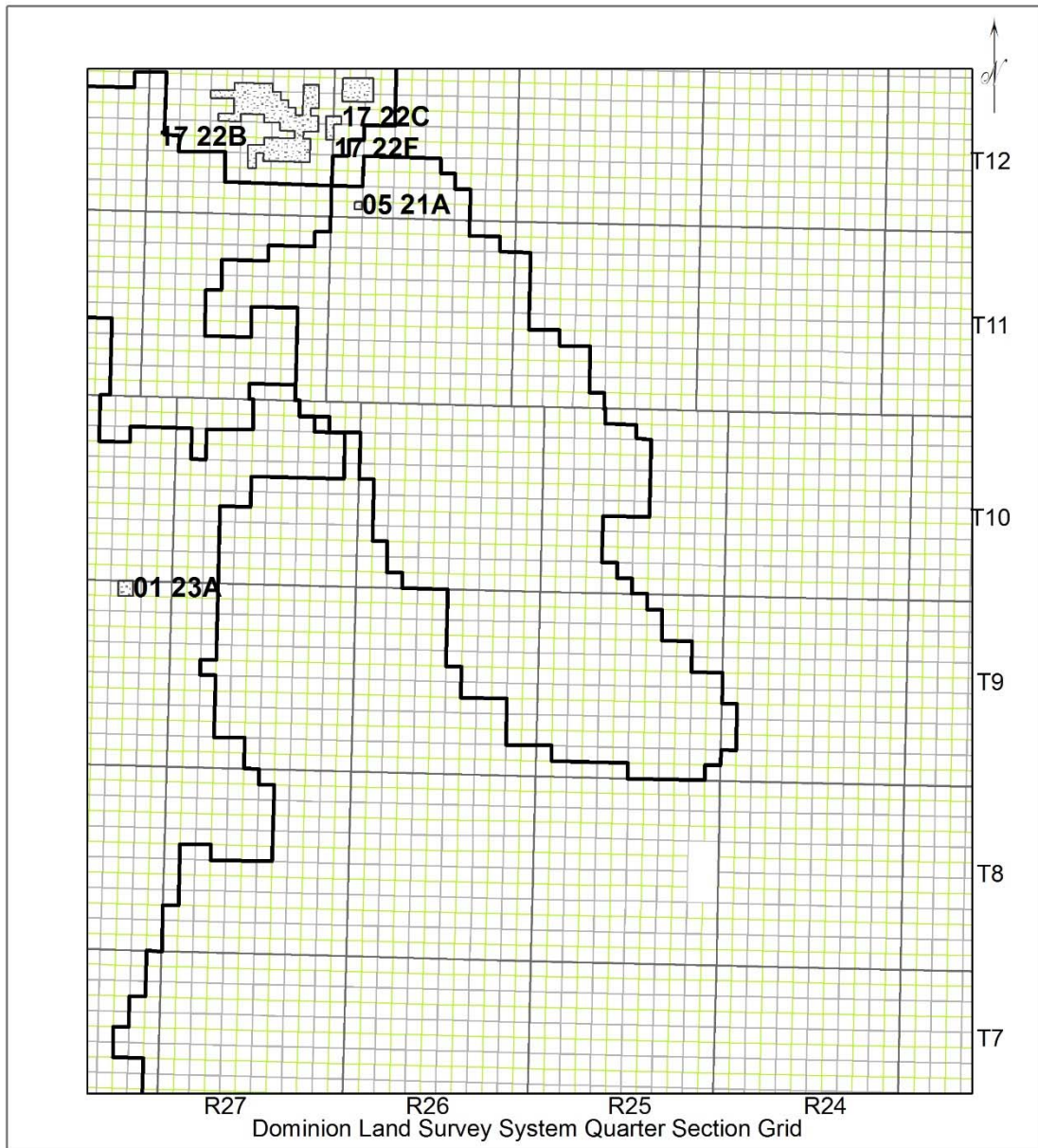
**Map 3**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0      5      10      20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid



*Figure 22: Map 3; Torquay Formation pools (65).*



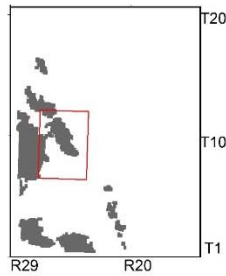
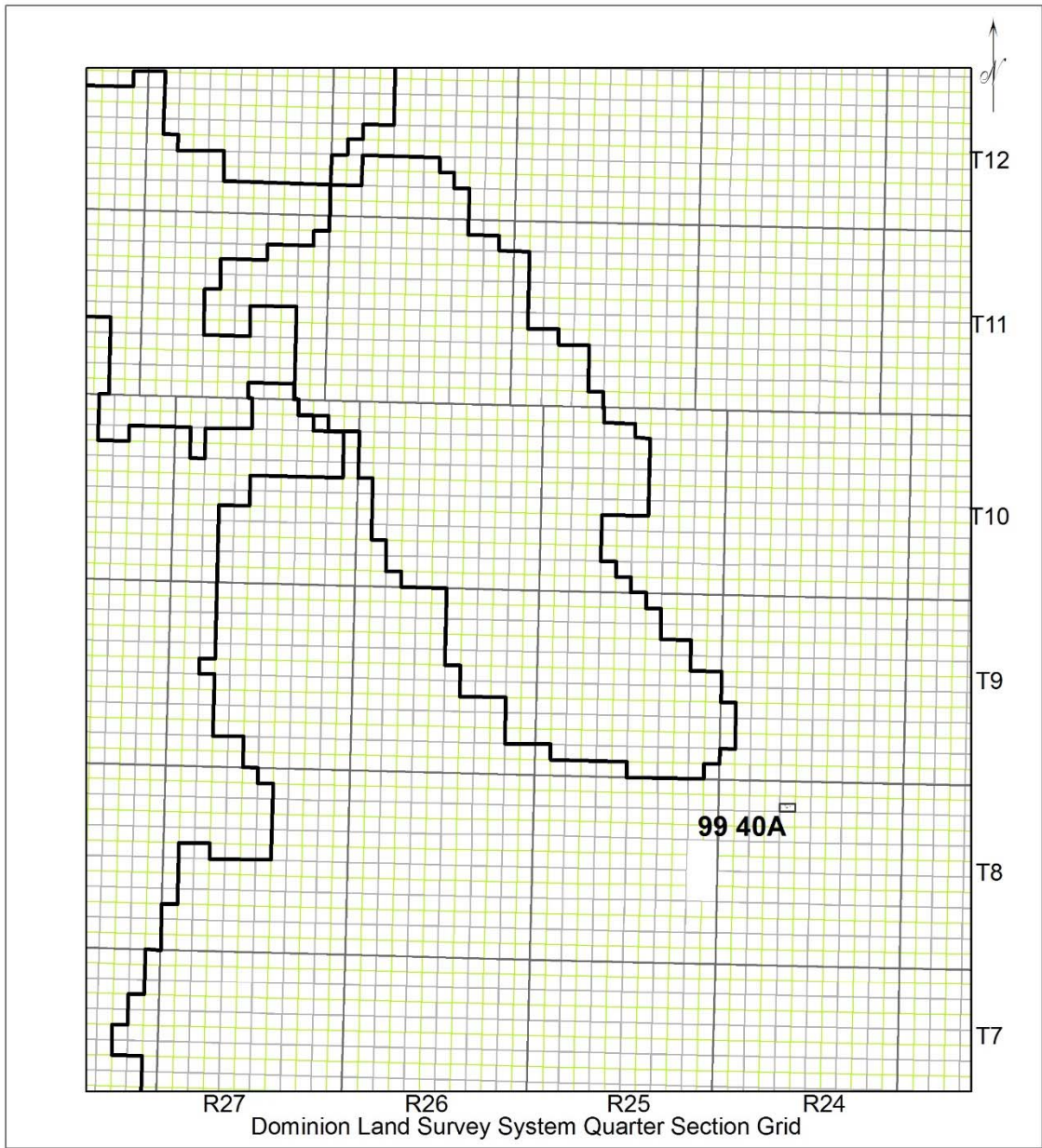
**Map 4**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0 5 10 20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid



**Figure 23:** Map 4; Reston Formation (21), Reston-Amaranth-Lodgepole (22) formations, & Amaranth Formation Upper Amaranth Member pools (23).



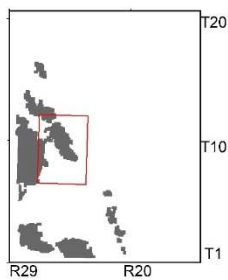
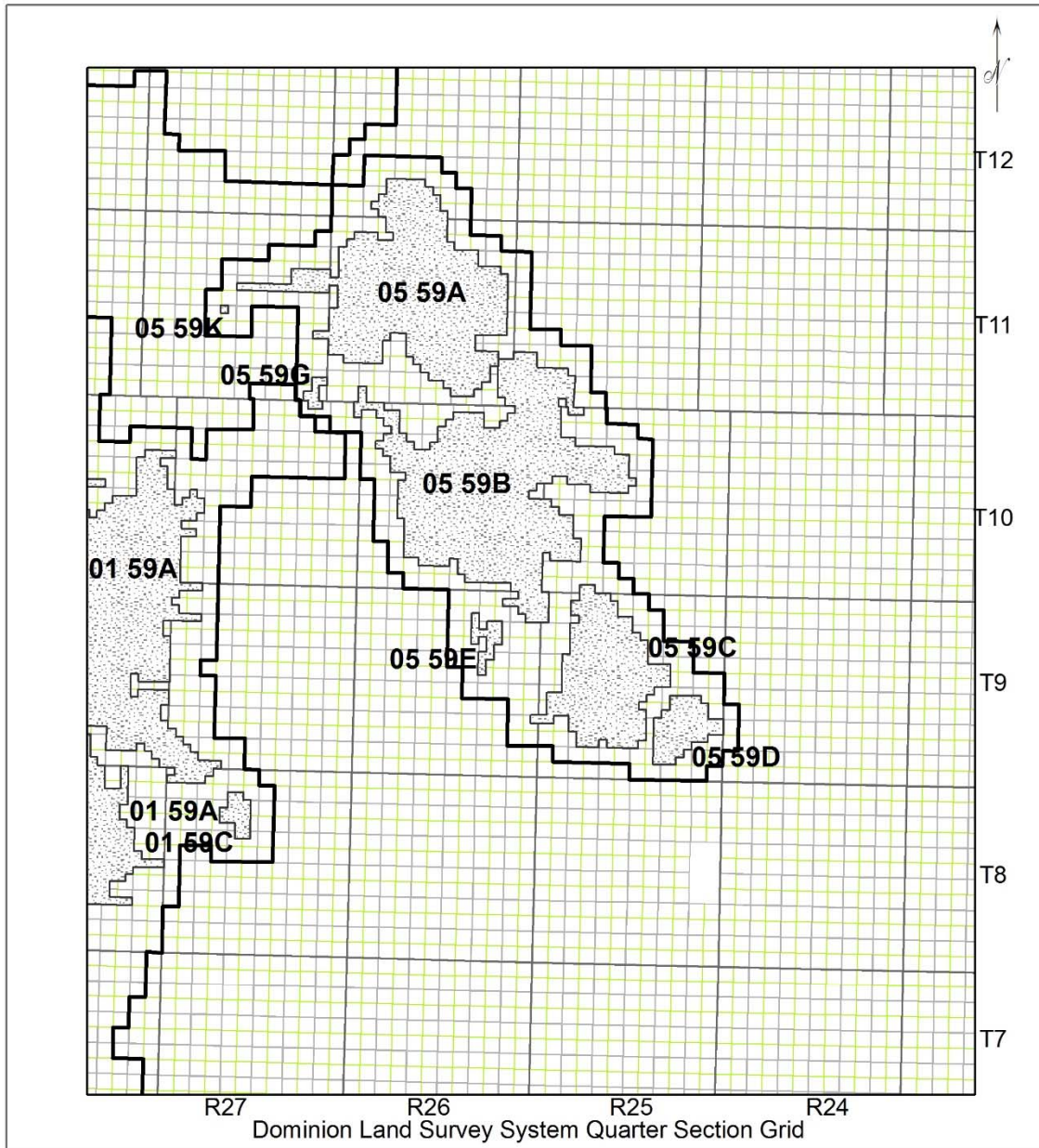
**Map 4**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0 5 10 20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid



**Figure 24:** Map 4; Amaranth Formation Lower Amaranth Member-Lodgepole Formation undifferentiated pools (40).



**Map 4**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

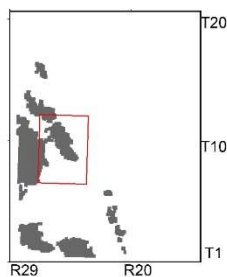
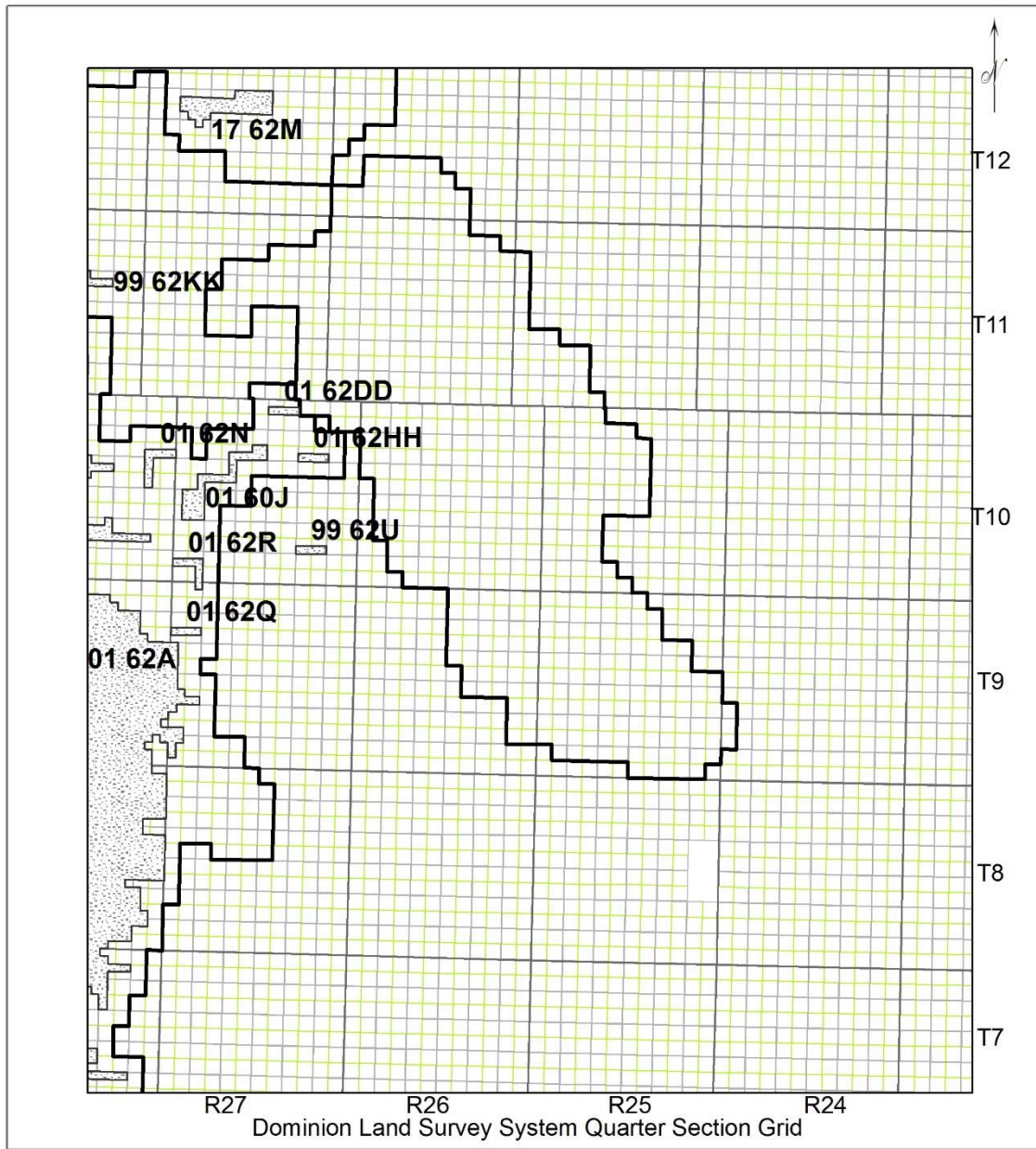
0      5      10      20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid



*Figure 25: Map 4; Lodgpole Formation undifferentiated pools (59).*





### Map 4

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

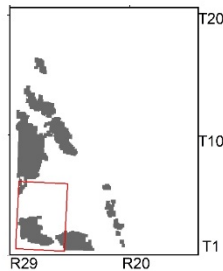
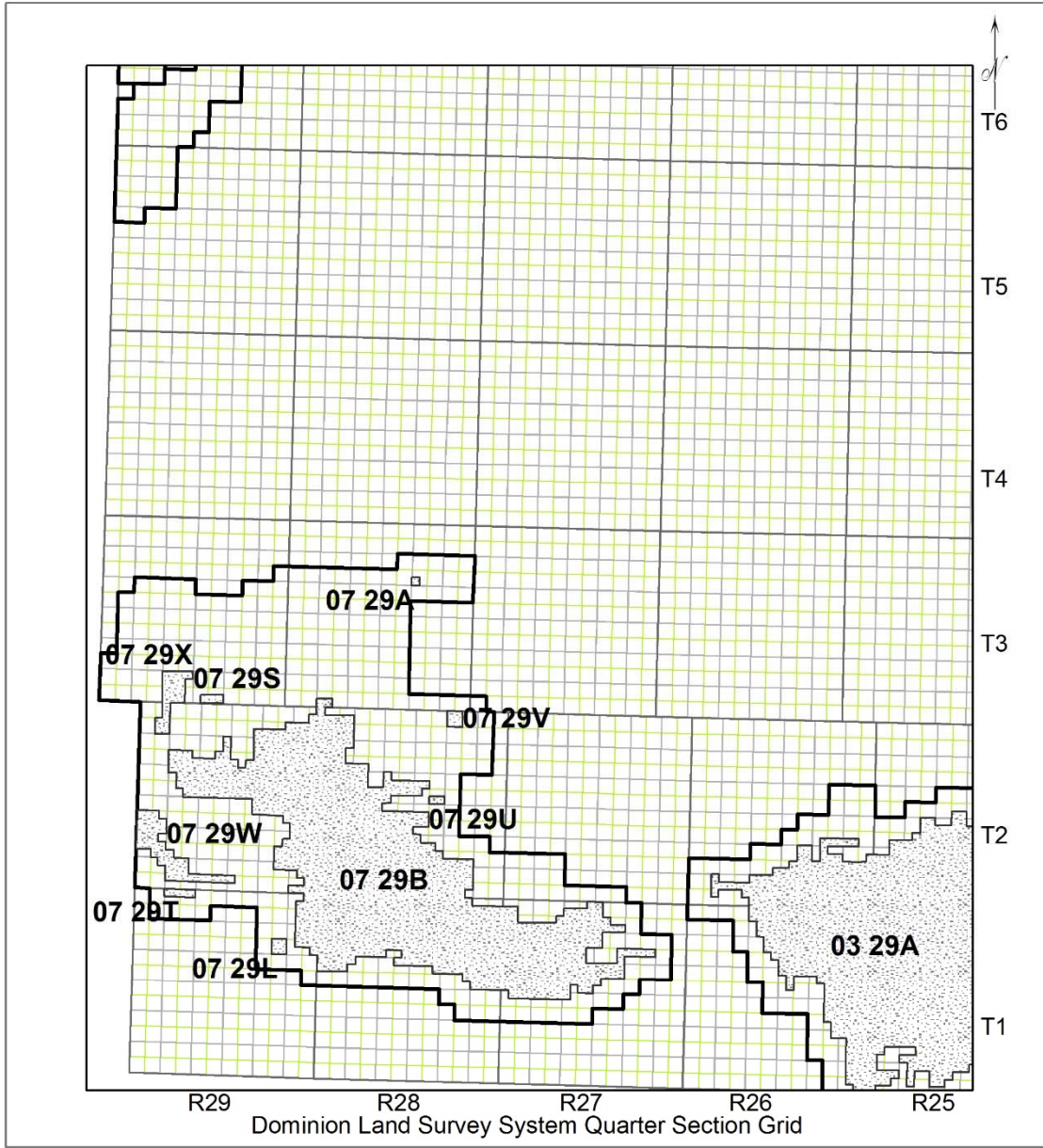


### Legend

-  2018 Oil Fields
-  Oil Pools
-  Township Grid
-  Section Grid
-  Quarter Section Grid



Figure 26: Map 4; Bakken & Bakken-Torquay formation pools (60 & 62).



**Map 5**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

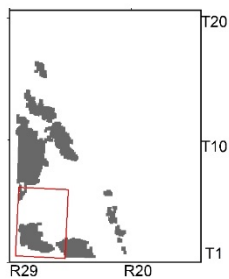
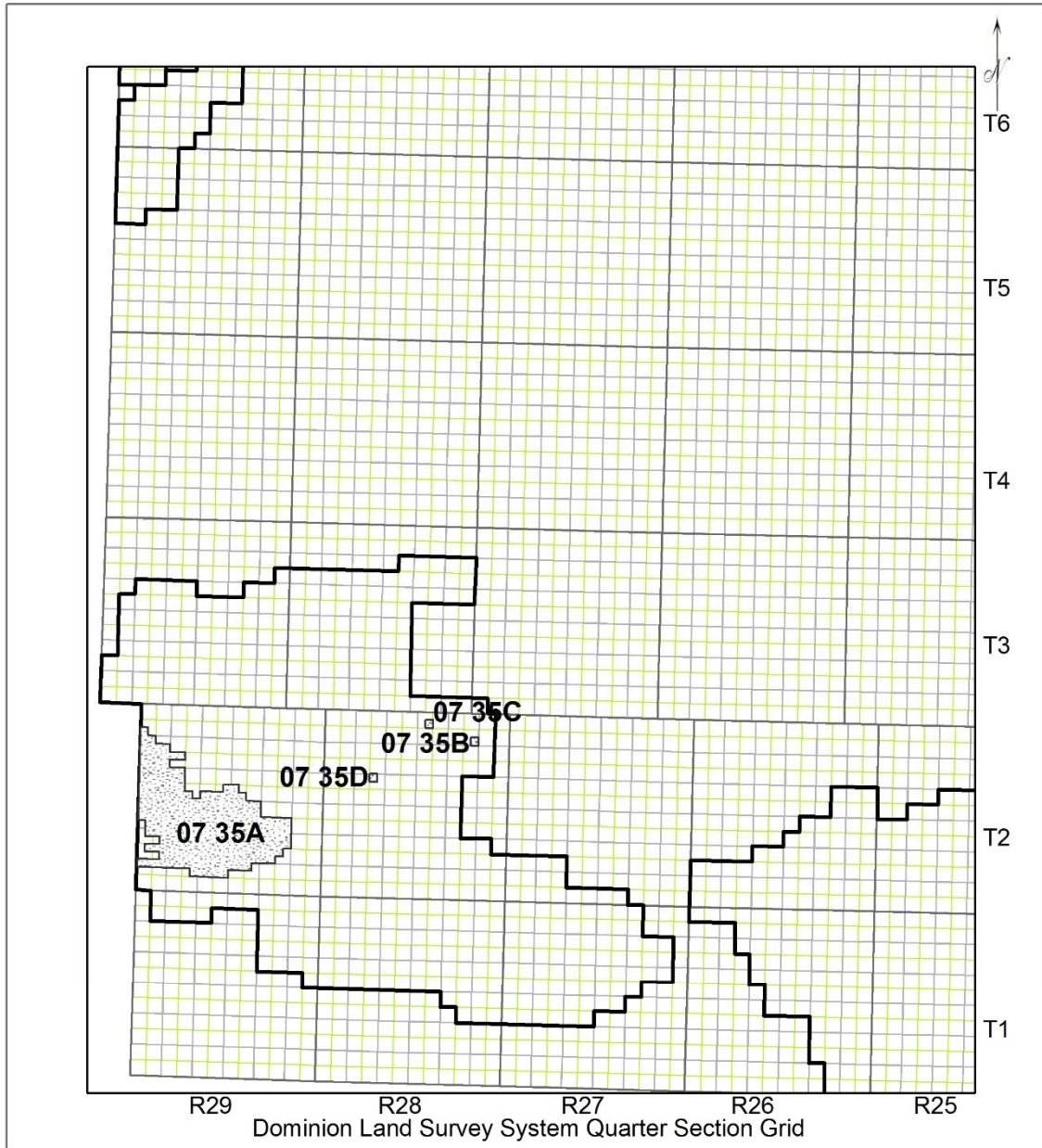


**Legend**

- 2018 Oil Fields**
- Oil Pools**
- Township Grid**
- Section Grid**
- Quarter Section Grid**



*Figure 27: Map 5; Amaranth Formation Lower Amaranth Member pools (29).*



**Map 5**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

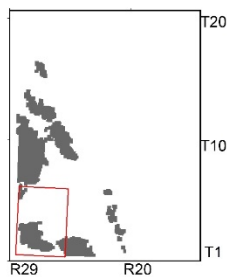
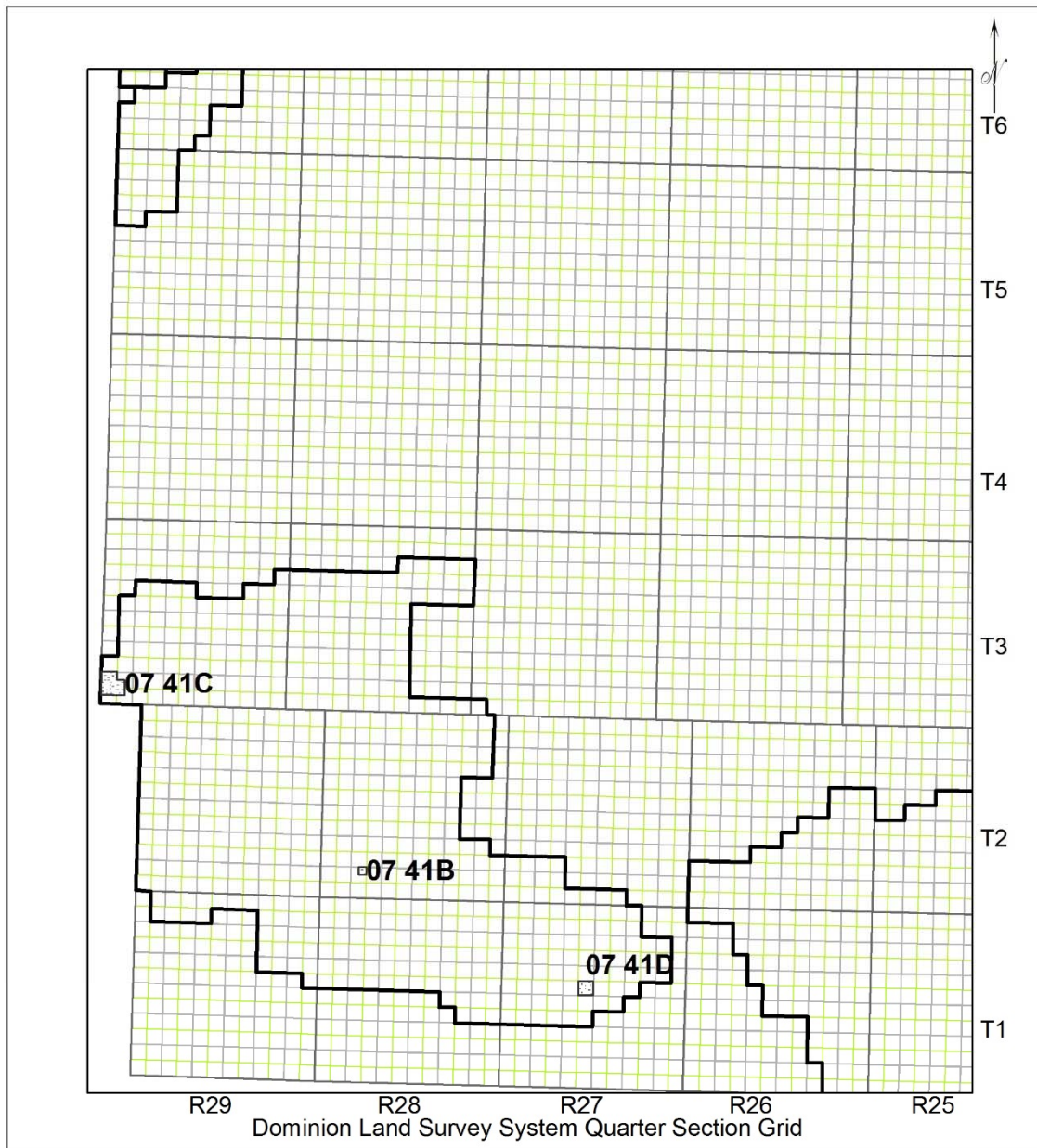


**Legend**

-  2018 Oil Fields
-  Oil Pools
-  Township Grid
-  Section Grid
-  Quarter Section Grid

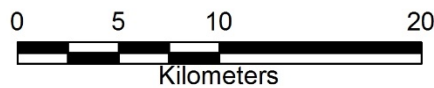


Figure 28: Map 5; Amaranth Formation Lower Amaranth Member-Mission Canyon Formation MC-3b Member pools (35).



**Map 5**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

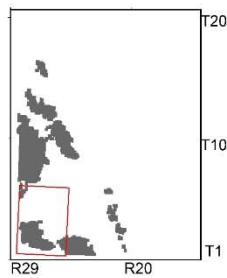
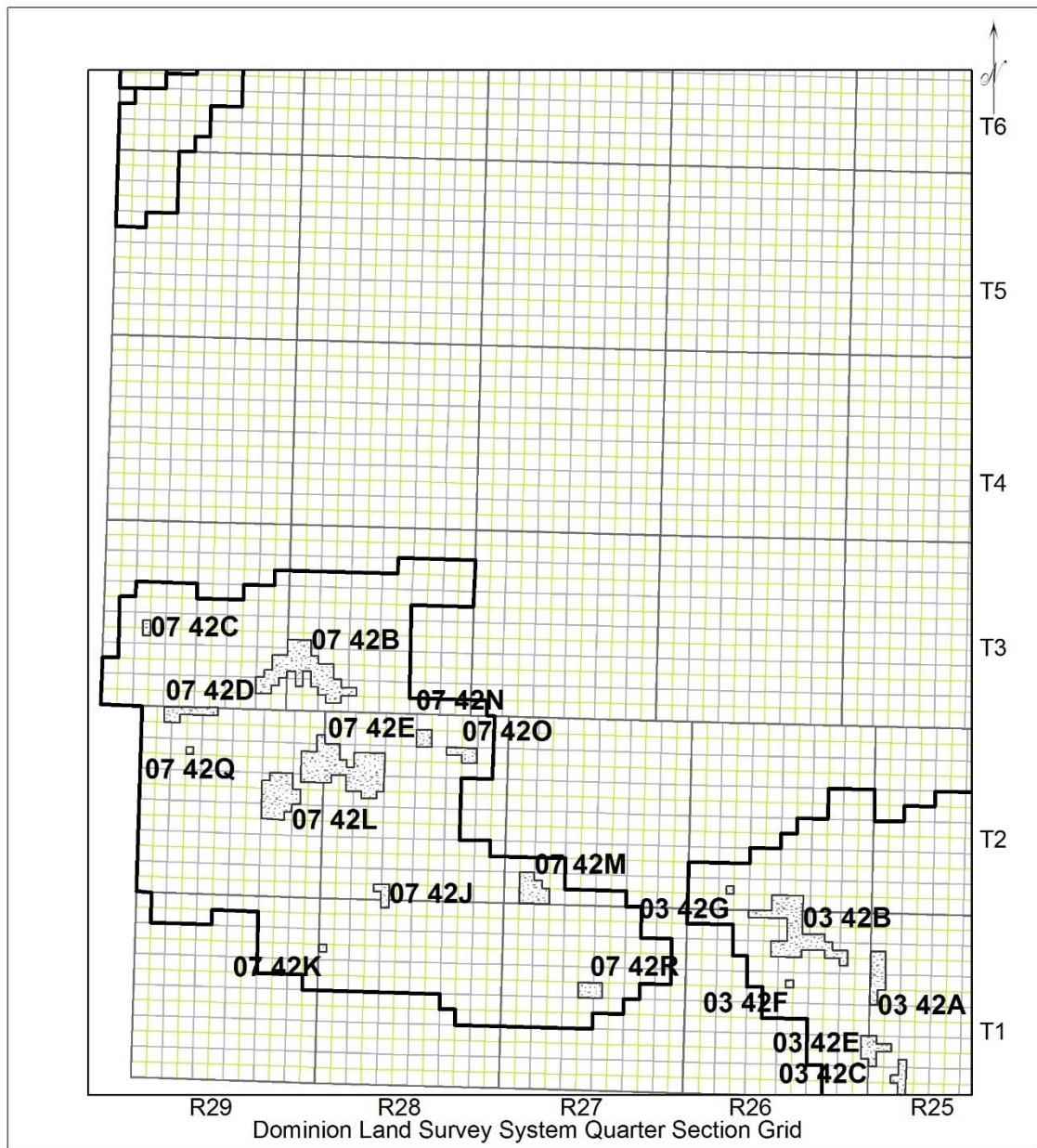


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid

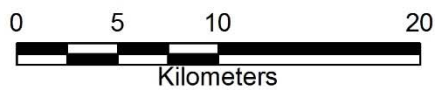


*Figure 29: Map 5; Mission Canyon Formation MC-3 Member pools (41).*



### Map 5

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

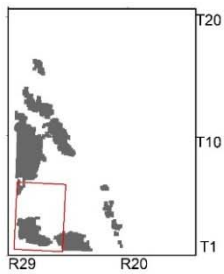
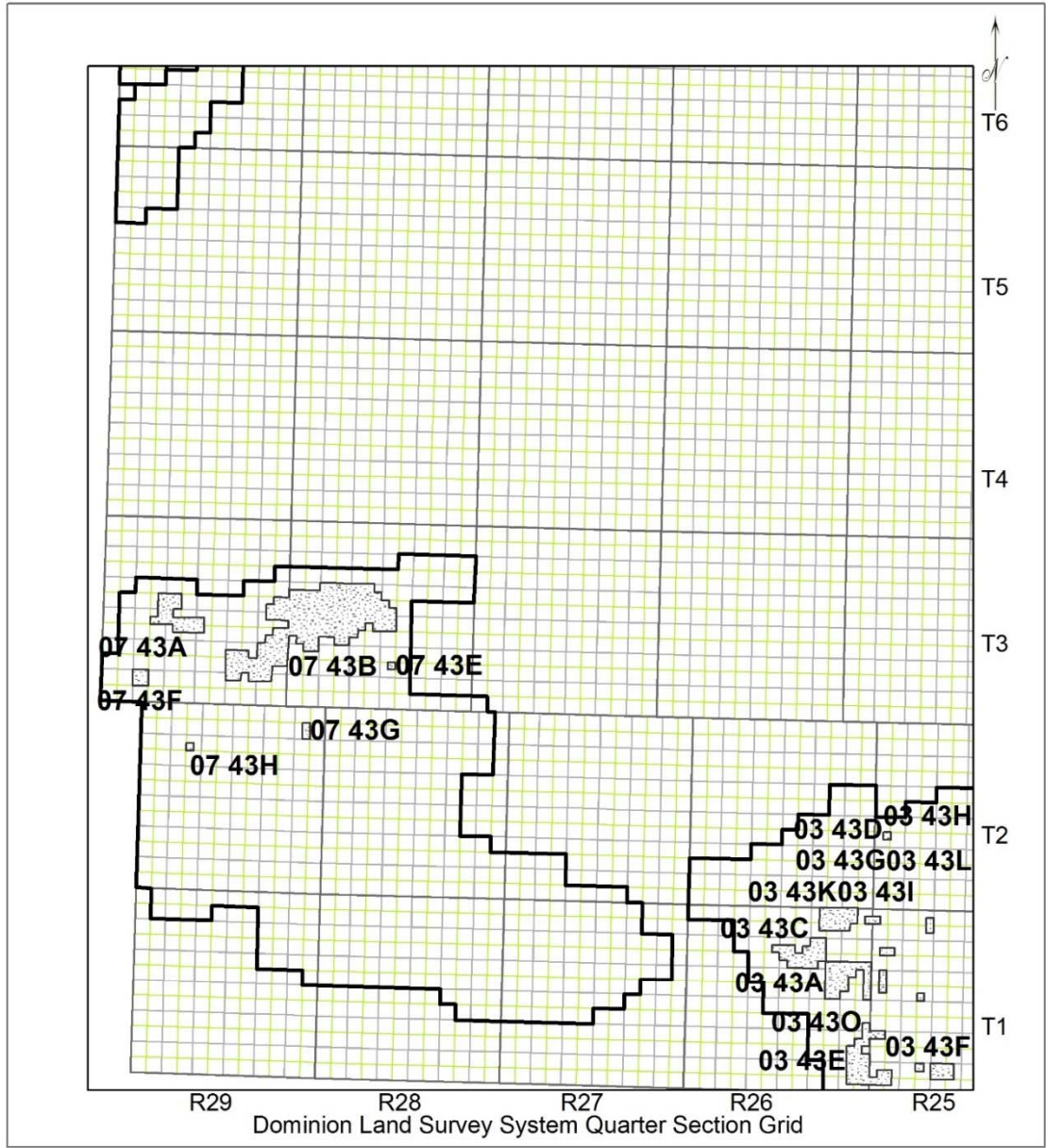


### Legend

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



Figure 30: Map 5; Mission Canyon Formation MC-3b Member pools (42).



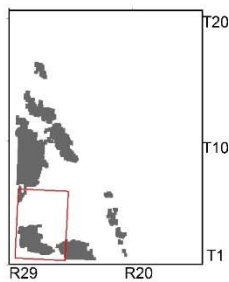
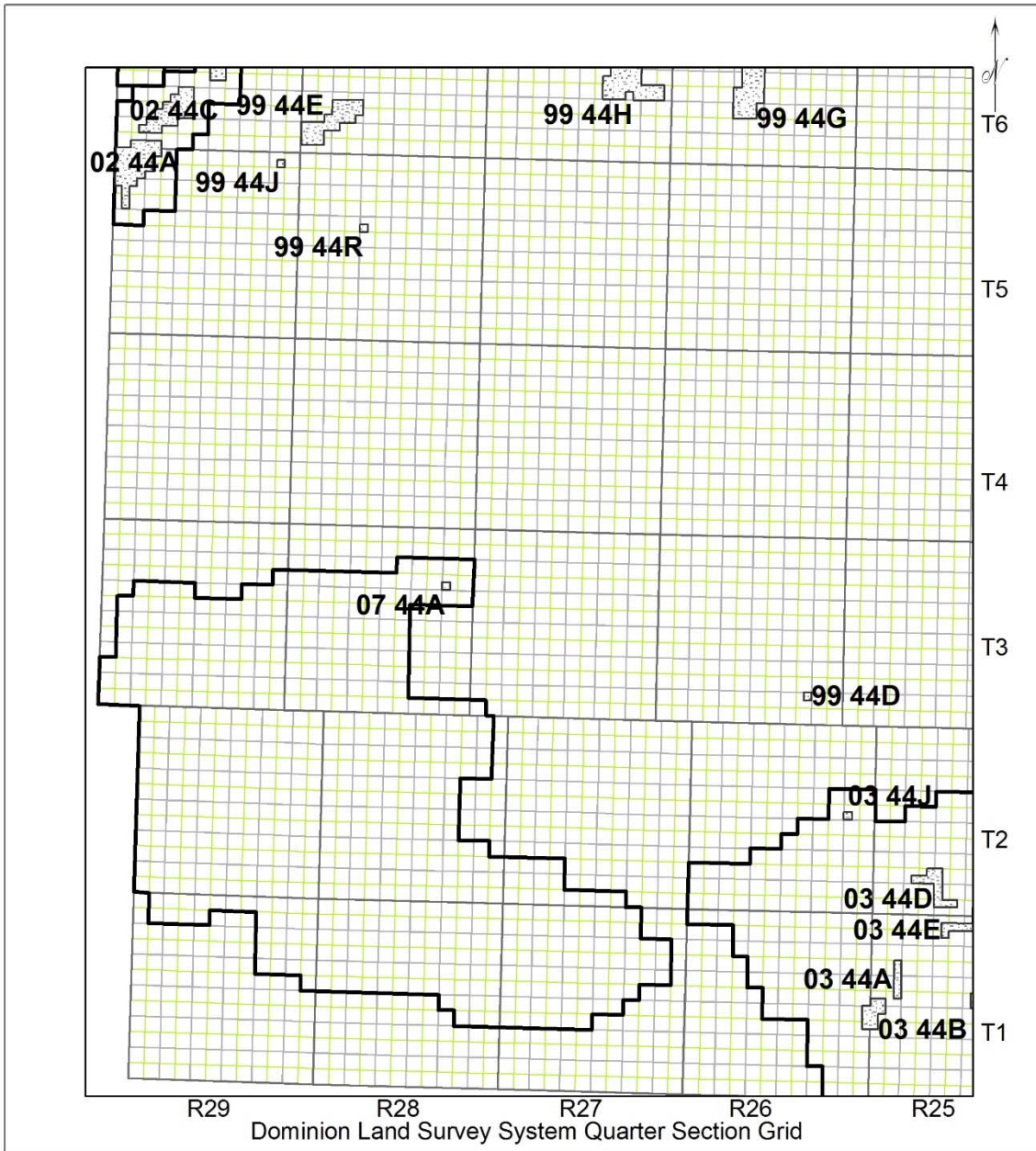
**Map 5**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0 5 10 20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid

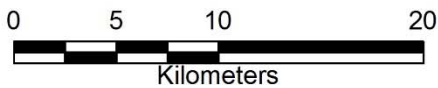


Figure 31: Map 5 Mission Canyon Formation MC-3a Member pools (43).



**Map 5**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

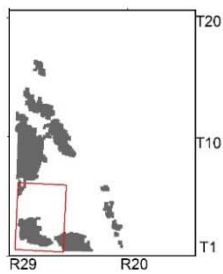
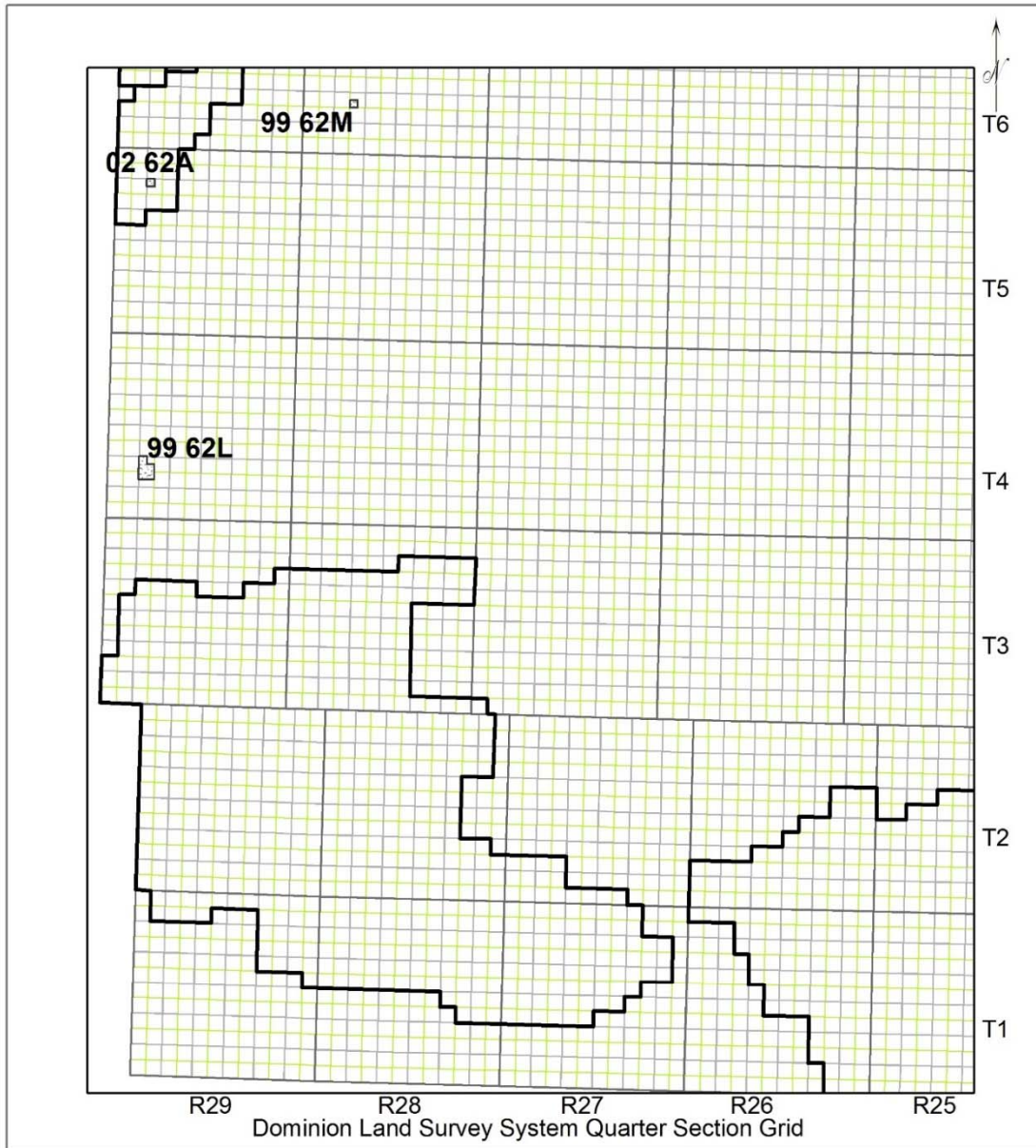


**Legend**

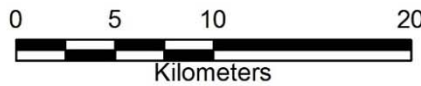
- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



Figure 32: Map 5; Mission Canyon Formation MC-1 Member pools (44).



**Map 5**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch



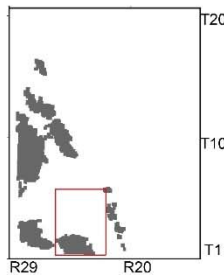
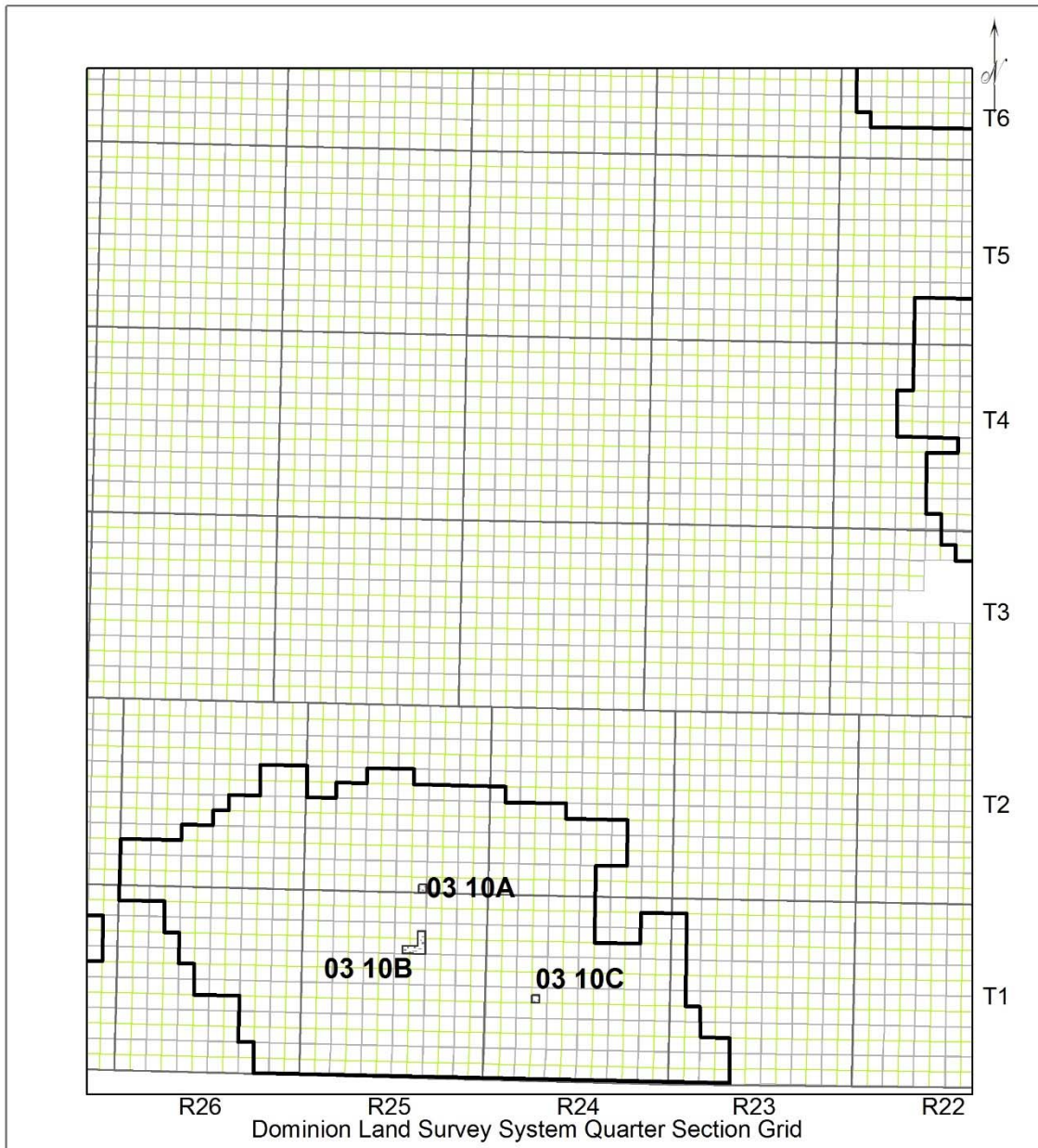
**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



Figure 33: Map 5; Bakken-Torquay formation pools (62).





**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

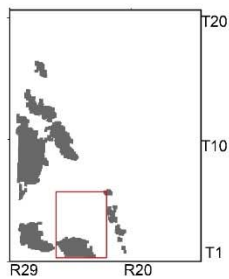
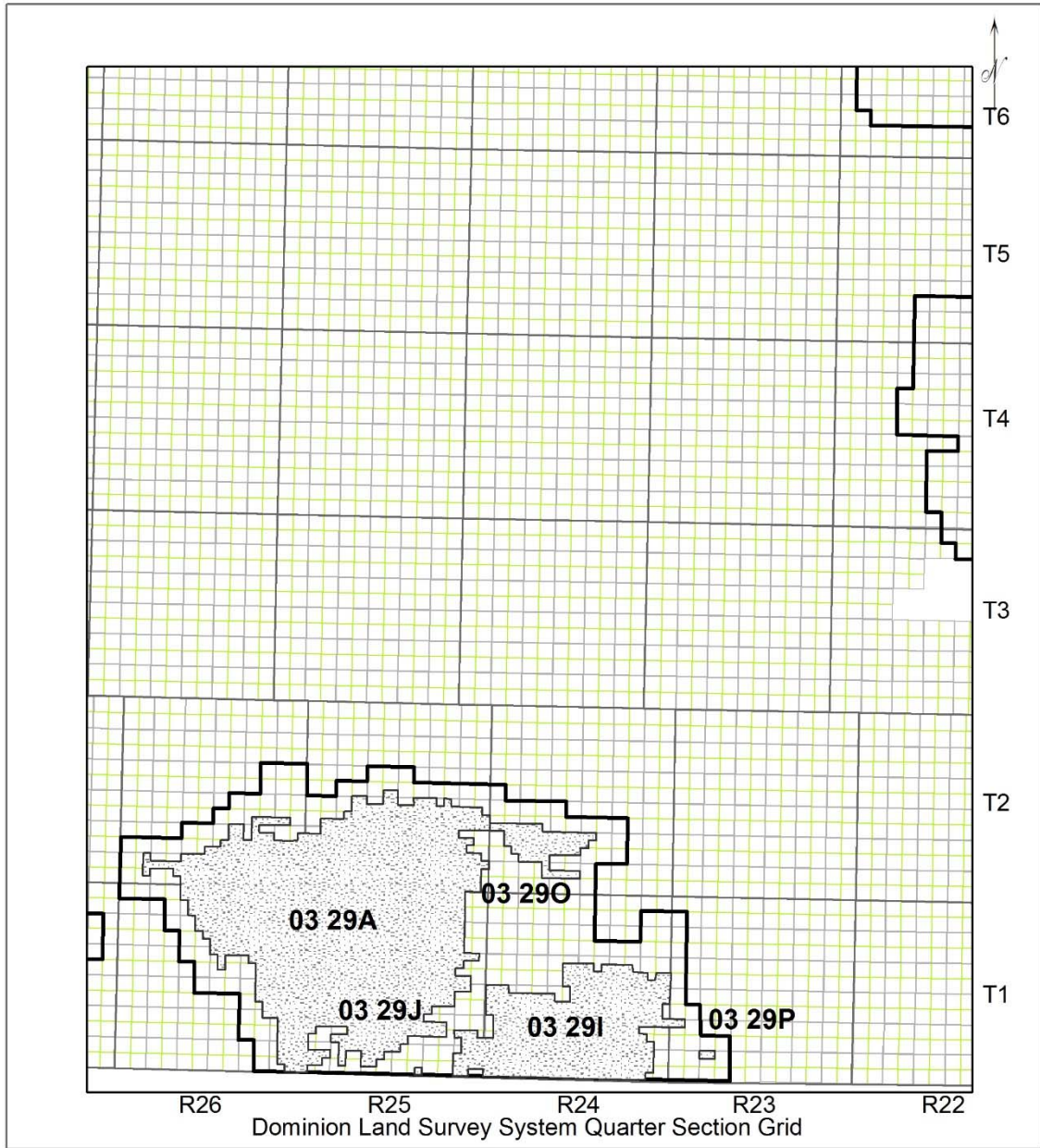


**Legend**

-  2018 Oil Fields
-  Oil Pools
-  Township Grid
-  Section Grid
-  Quarter Section Grid



Figure 34: Map 6; Favel Formation pools (10).



**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

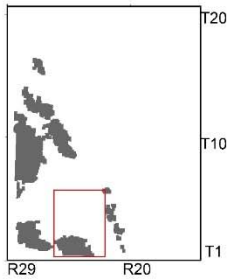
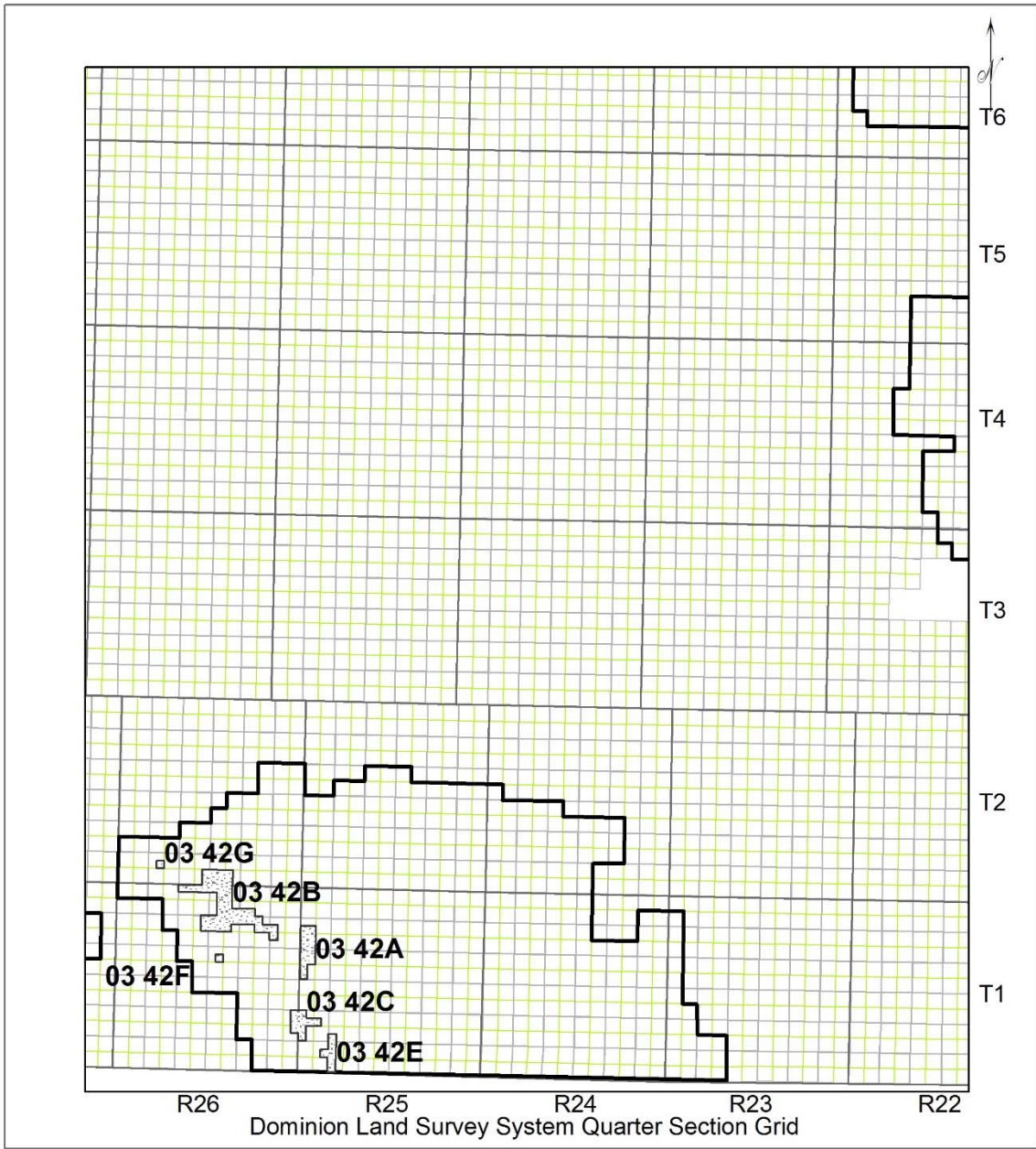


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid

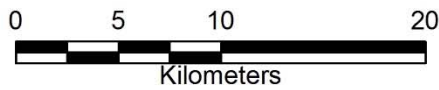


**Figure 35:** Map 6; Amaranth Formation Lower Amaranth Member pools (29).



**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

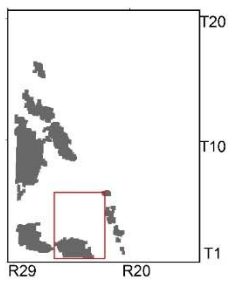
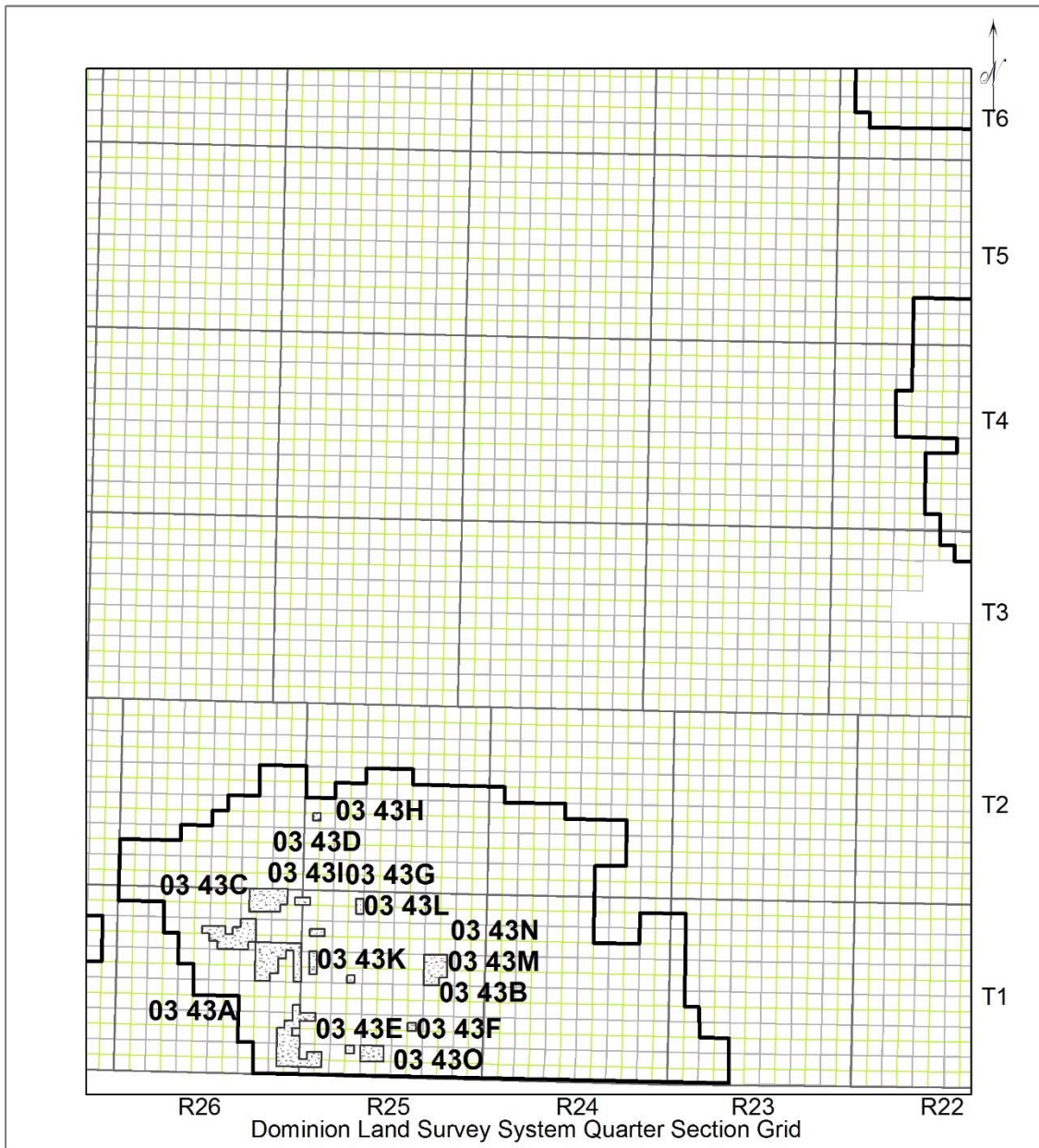


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid

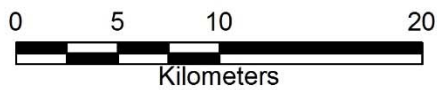


*Figure 36: Map 6; Mission Canyon Formation MC-3b Member pools (42).*



**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

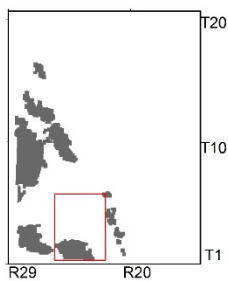
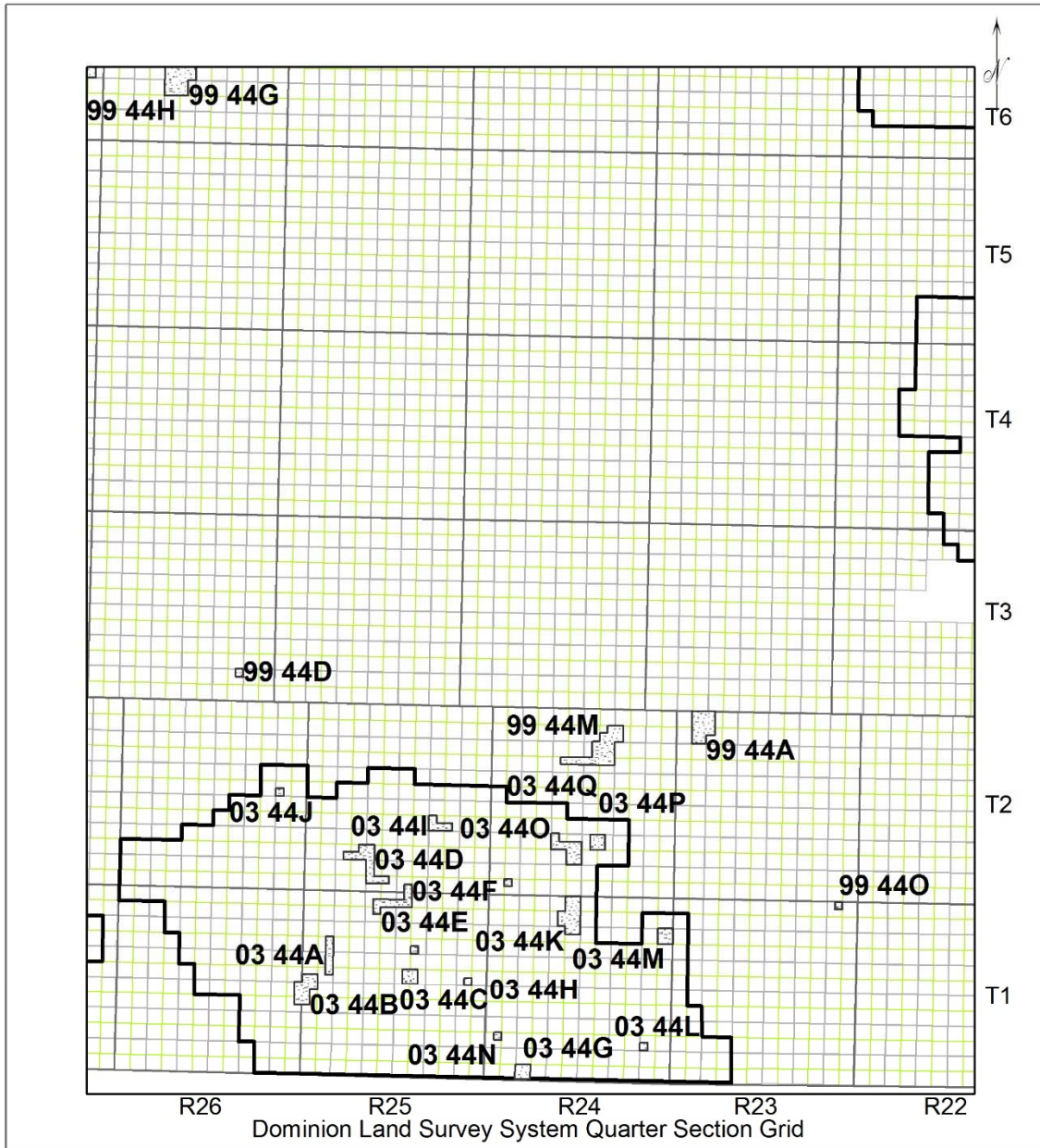


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid

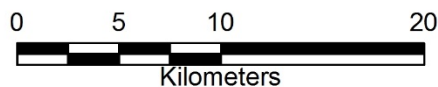


*Figure 37: Map 6; Mission Canyon Formation MC-3a Member pools (43).*



**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

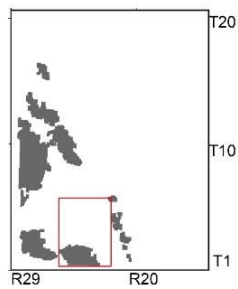
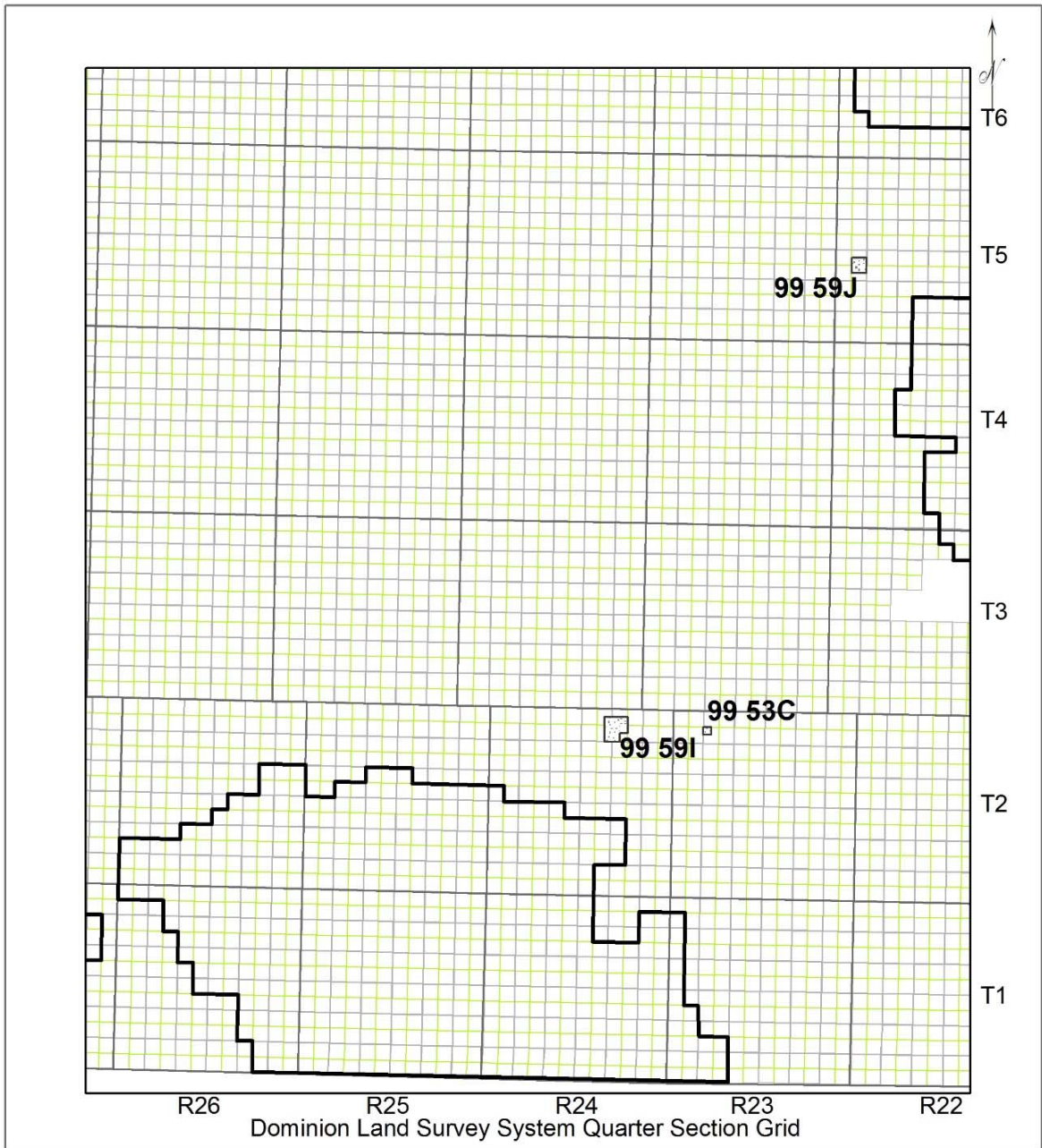


**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid



Figure 38: Map 6; Mission Canyon Formation MC-1 Member pools (44).



**Map 6**

Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

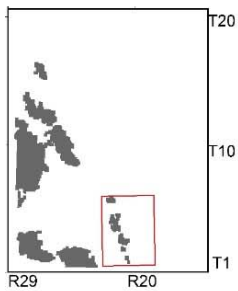
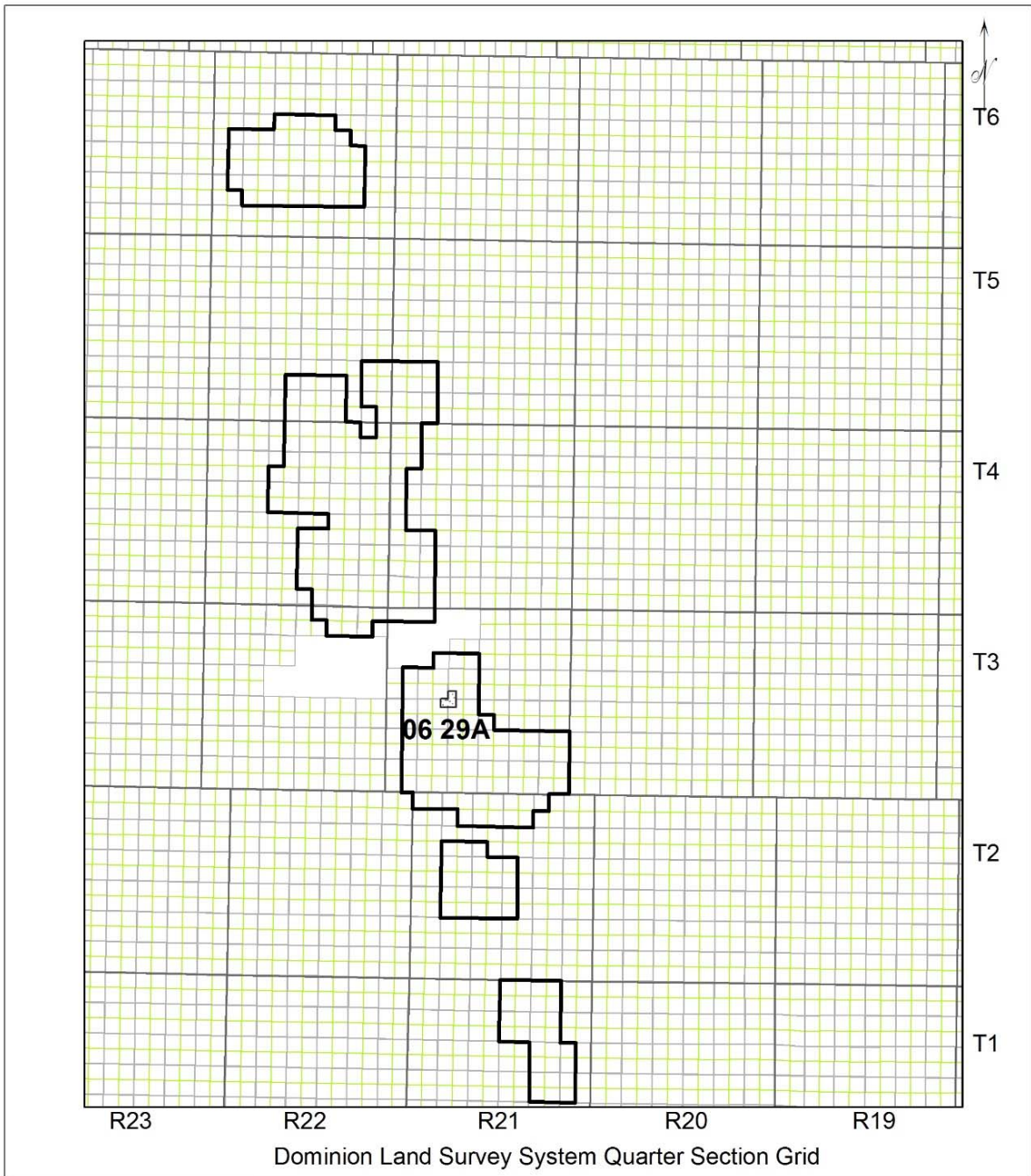


**Legend**

-  2018 Oil Fields
-  Oil Pools
-  Township Grid
-  Section Grid
-  Quarter Section Grid









*Figure 39: Map 6; Lodgepole Formation Virden Member pools (53) & Lodgepole Formation undifferentiated (59) pools.*

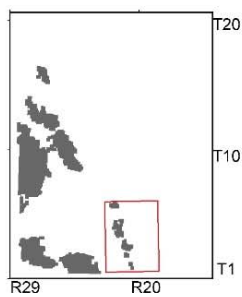
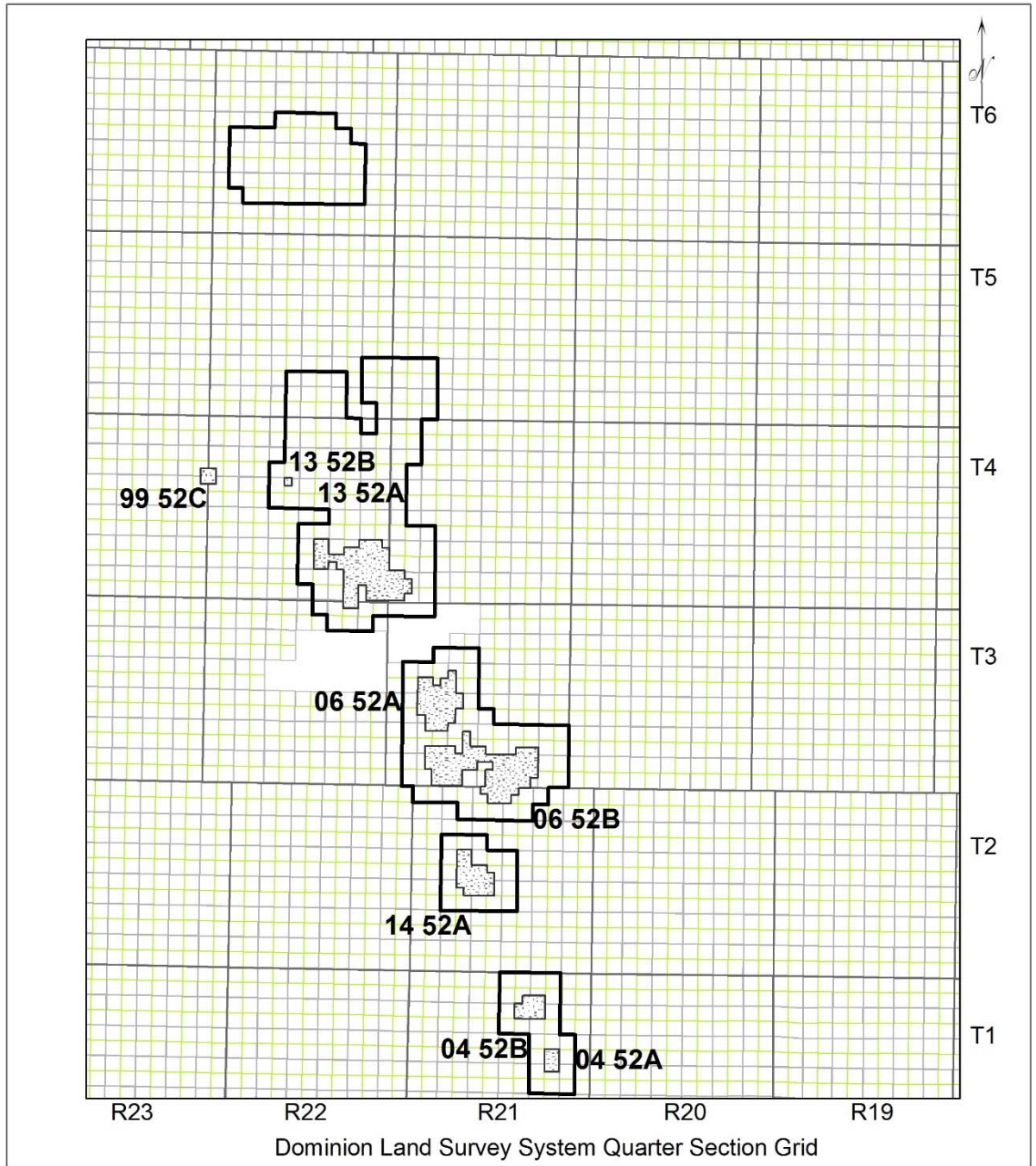


**Map 7**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0    5    10    20  
 Kilometers

- Legend**
-  2018 Oil Fields
  -  Oil Pools
  -  Township Grid
  -  Section Grid
  -  Quarter Section Grid
- Manitoba** 

*Figure 40: Map 7; Amaranth Formation Lower Amaranth Member pools (29).*



**Map 7**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0      5      10      20  
 Kilometers

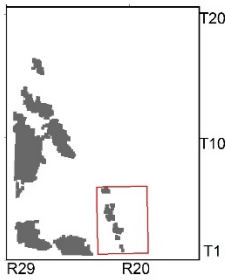
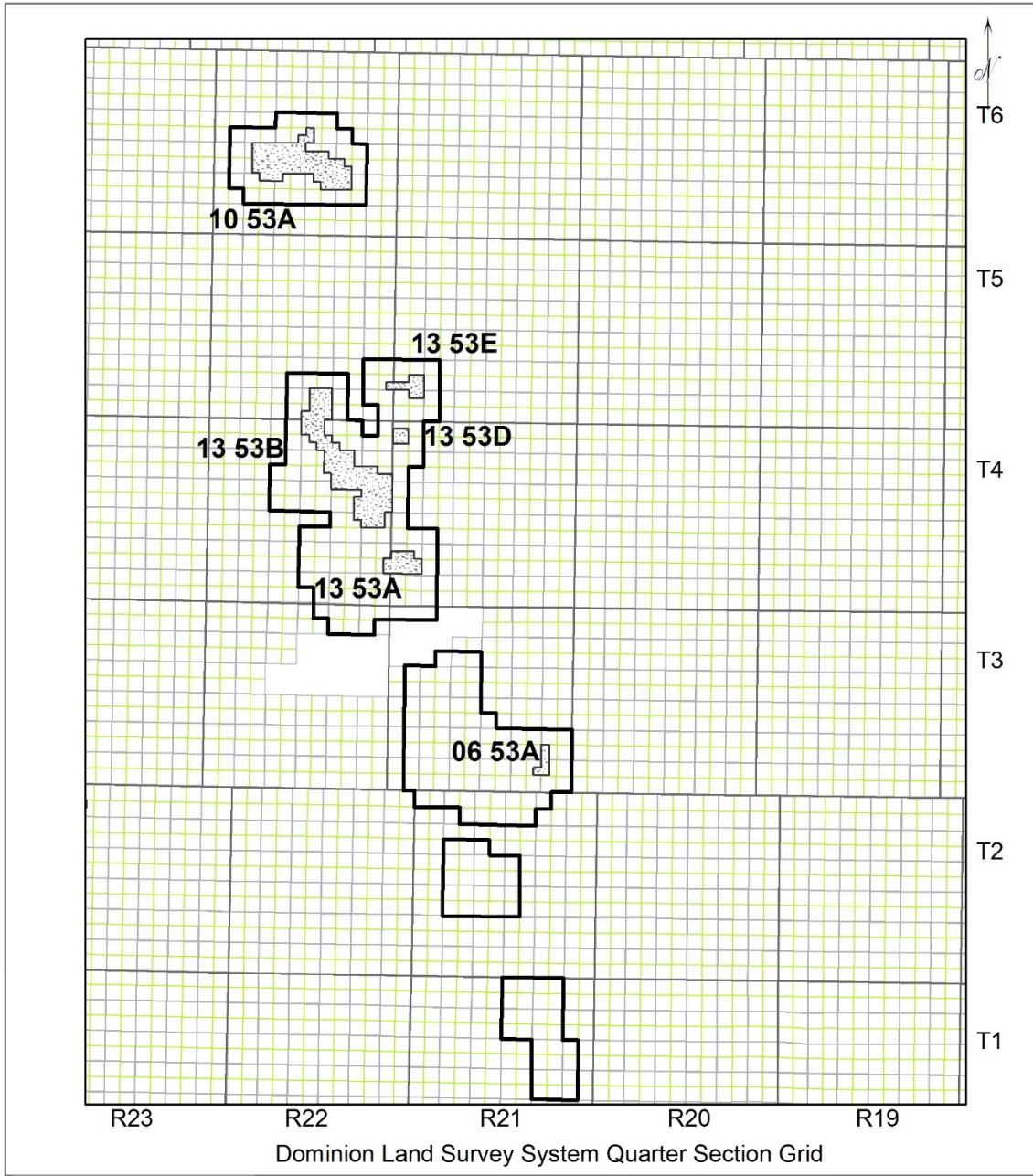
**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid

**Manitoba**

**Figure 41:** Map 7; Lodgepole Formation Whitewater Lake Member pools (52).



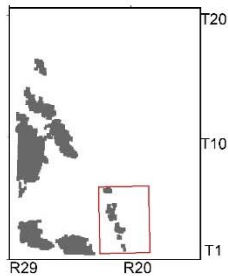
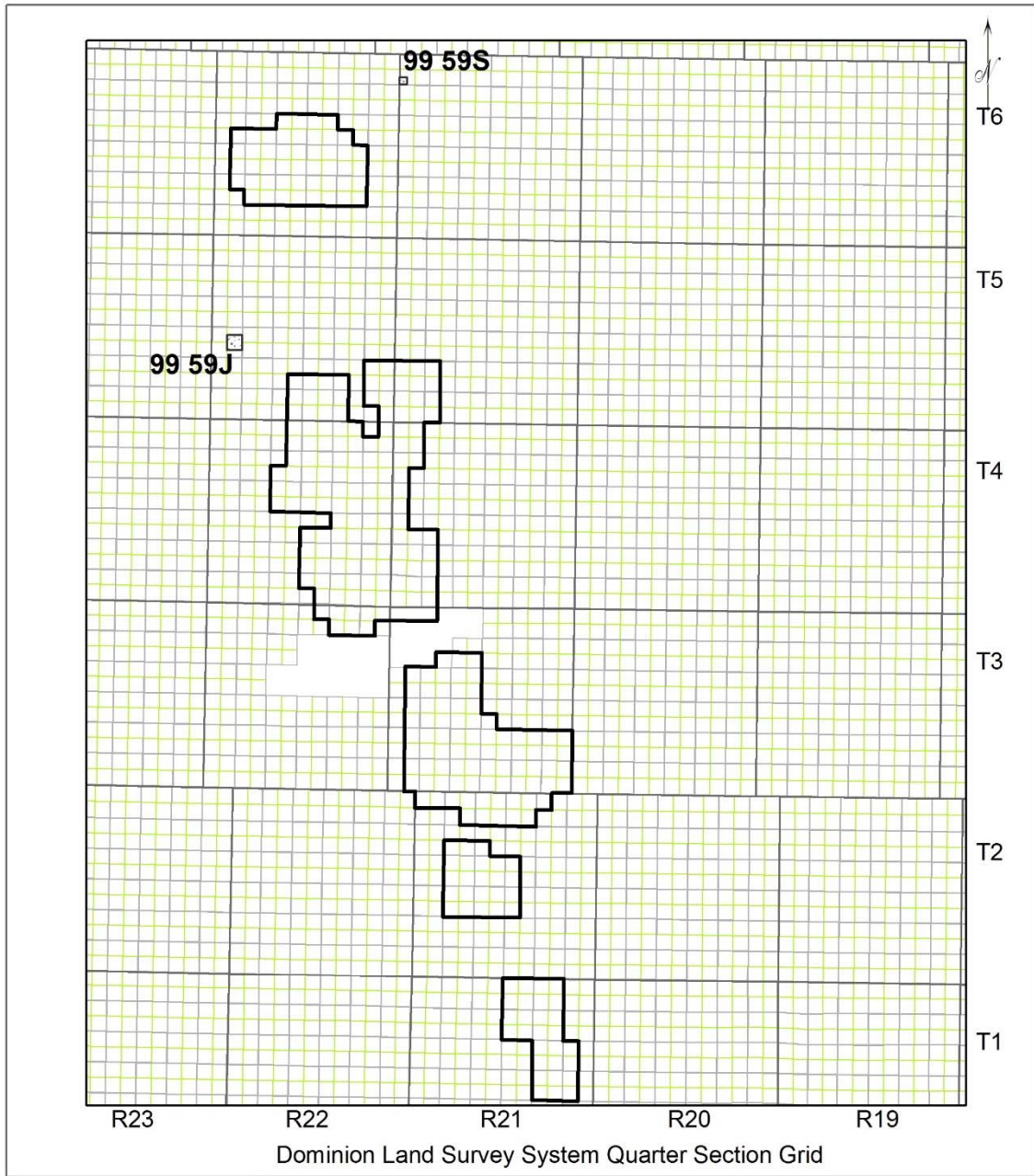


**Map 7**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0      5      10      20  
 Kilometers

- Legend**
- 2018 Oil Fields
  - Oil Pools
  - Township Grid
  - Section Grid
  - Quarter Section Grid
- Manitoba**

*Figure 42: Map 7; Lodgepole Formation Virden Member pools (53).*



**Map 7**  
 Manitoba's Designated Fields & Pools  
 Well Information: January 1, 2018  
 Geology by: P. Fulton-Regula  
 Petroleum Branch

0    5    10    20  
 Kilometers

**Legend**

- 2018 Oil Fields
- Oil Pools
- Township Grid
- Section Grid
- Quarter Section Grid

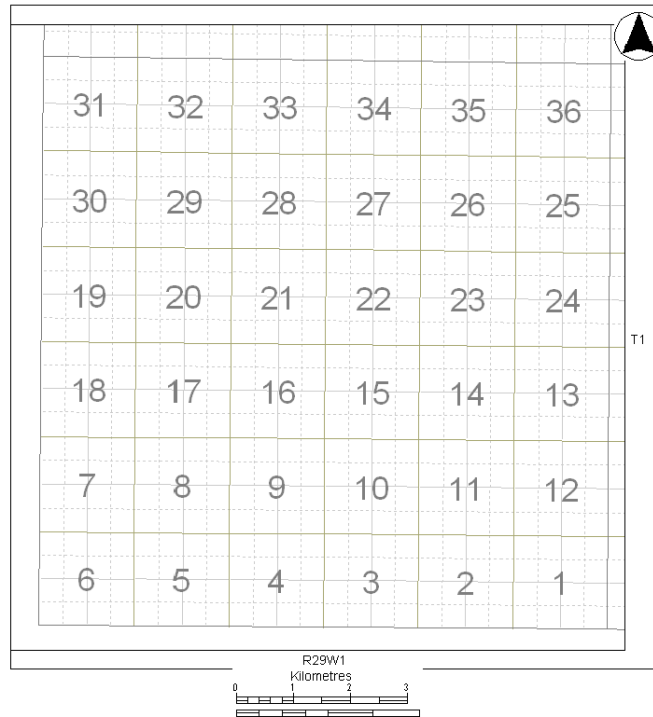
**Manitoba**

*Figure 43: Map 7; Lodgepole Formation undifferentiated pools (59).*

## APPENDIX A - Grid and Scale

The grid used in all the field and pool maps within this report are in the Dominion Land Survey (DLS) system for western Canada and north is always to the top of the map. The Prairie Provinces are divided north and south into 5 areas separated by meridians. The first or Principal meridian is in Manitoba and the area to the west of it is referred as W1 or WPM in all Unique Well Identifiers (UWI). The area between meridians is divided into ranges (R) each 6 miles wide. These ranges are cross-divided by township lines which run east-west six miles apart, to form townships (T) six miles square. (Figure 1)

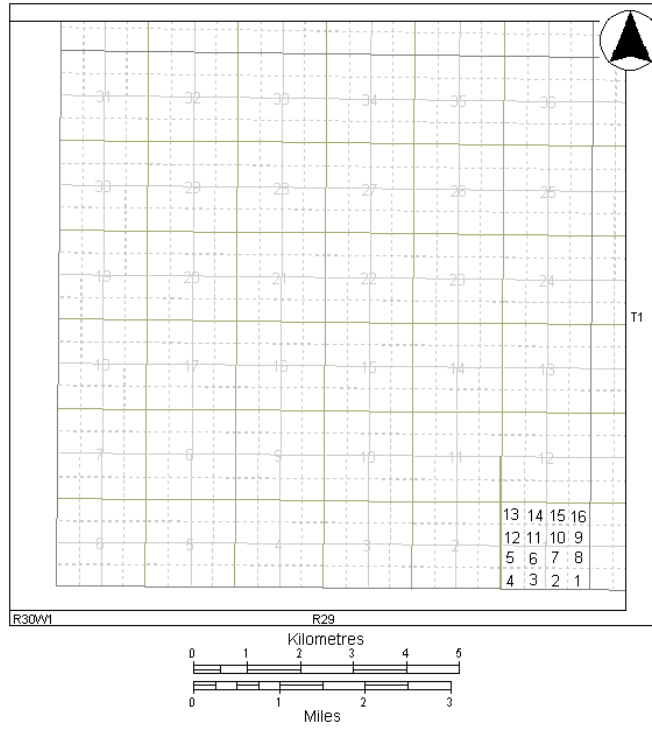
Each Township is divided into Sections (Sec) one mile square (640 acres per section) and there are 36 sections in a Township, 6 sections wide by 6 sections high. Each Section is numbered as shown in Figure 45.



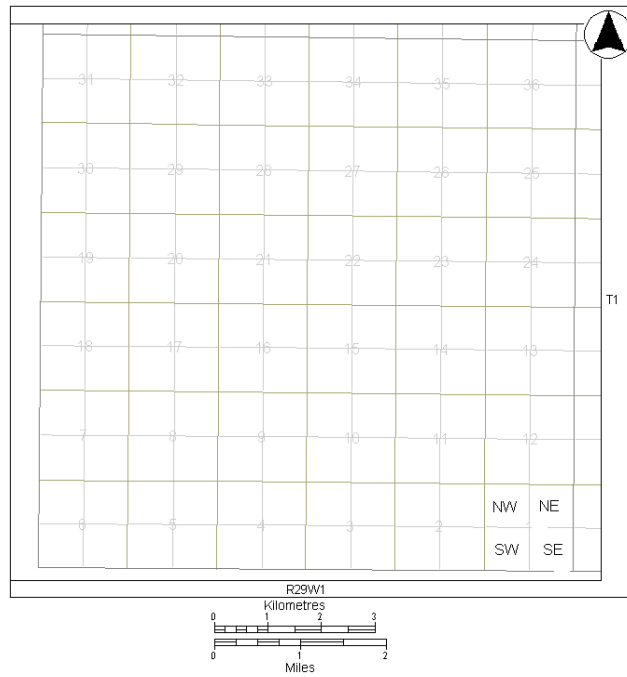
**Figure 44:** Sections in a township of the DLS system.

Each Section is divided into 16 legal subdivisions (LSD), 4 LSD's wide by 4 LSD's high, each 402.36m<sup>2</sup> or 40 acres. Pool boundaries are adjusted by LSD. Each LSD is numbered as shown in section 1 of Figure 46. Each section can also be split into ¼ sections as shown in Figure 47. This is important to note as field boundaries are adjusted by ¼ section. Each ¼ section consists of 4 LSD's and a ¼ section is 804.72m<sup>2</sup> or 160 acres.

A map reference is given in the format of a legal survey system reference, LSD-Sec-Township-Range W1, i.e. 02-09-010-29W1. This is incorporated into the Unique Well Identifier (UWI) a code used to identify each oil well in Manitoba. A UWI's first three numbers indicate: 'Survey system code' 'Location' 'Exception code'/legal survey system/event sequence code i.e.100/16-09-010-09W1/00. The DLS system is always represented by a designated code of 01.



**Figure 45:** Legal subdivisions in a section of the DLS system.



**Figure 46:** Quarter section illustration of the DLS system.

**APPENDIX B - Manitoba pool codes by Formation**

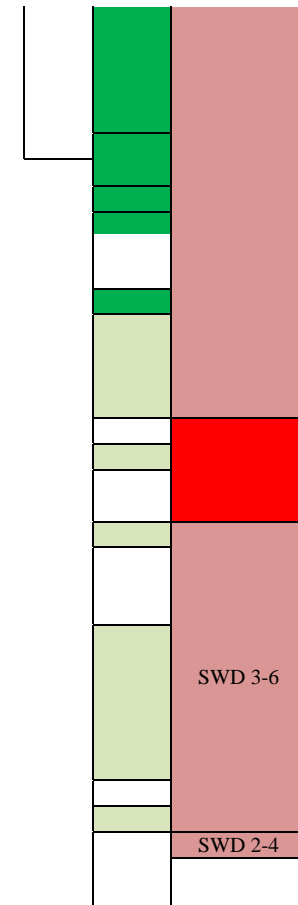
<b>CODE</b>	<b>FORMATION OR MEMBER</b>	<b>CODE</b>	<b>FORMATION OR MEMBER</b>
10	Favel Formation	55	Lodgepole Formation, Crinoidal Cruickshank facies
11	Ashville Formation, Newcastle Member	56	Lodgepole Formation, Scallion Member (formerly 55)
15	Swan River Formation	59	Lodgepole Formation, undifferentiated
19	Melita Formation	60	Bakken Formation
21	Reston Formation	62	Bakken – Torquay formation
22	Reston-Amaranth-Lodgepole, undifferentiated		
23	Upper Amaranth Formation	65	Torquay Formation
26	Triassic, undifferentiated	71	Birdbear Formation
29	Lower Amaranth, undifferentiated	72	Duperow Formation
35	Lower Amaranth – Mission Canyon 3b (MC-3b) Member	73	Souris River Formation
39	Mississippian, undifferentiated	74	Dawson Bay Formation
40	Lower Amaranth – Lodgepole undifferentiated	75	Prairie Evaporite Formation
41	Mission Canyon Formation, MC-3 Member, undifferentiated	76	Winnipegosis Formation (formerly 75)
42	Mission Canyon Formation, MC-3b Member	78	Devonian, undifferentiated (formerly 79)
43	Mission Canyon Formation, MC-3a Member	79	Silurian, Interlake Group
44	Mission Canyon Formation, MC-1 Member	80	Stonewall Formation
49	Mission Canyon Formation, undifferentiated	81	Stony Mountain Formation
51	Lodgepole Formation, Dolomitic	82	Red River Formation
52	Lodgepole Formation, Whitewater Lake Member	85	Winnipeg Formation
53	Lodgepole Formation, Virden Member	89	Ordovician, undifferentiated
54	Lodgepole Formation, Daly Member	90	Cambrian, Deadwood Formation

January 1, 2018

**APPENDIX C - Manitoba Williston Basin stratigraphy showing pool codes, hydrocarbon bearing zones and approved disposal zones**

PERIOD	EPOCH	GROUP	FORMATION SHOWING POOL CODES ()	MEMBER SHOWING POOL CODES ()	COMMINGLED ZONE POOL CODES		OIL & GAS	WATER POLICY	
QUATERNARY	RECENT		GLACIAL DRIFT					PROTECT NO DISPOSAL	
	PLEISTOCENE								
TERTIARY	PLIOCENE							PROTECT NO DISPOSAL	
	MIOCENE								
	OLIGOCENE								
	EOCENE								
	PALEOCENE								
		TURTLE MOUNTAIN	PEACE GARDEN	GOODLANDS					
CRETACEOUS	LATE CRETACEOUS		BOISSEVAIN			22	35	40	NO DISPOSAL
			PIERRE SHALE	COULTER					
				ODANAH					
				MILLWOOD					
				PEMBINA					
				GAMMON FERRUGINOUS					
			CARLILE	BOYNE					
			MORDEN						
	FAVEL (10)		ASSINIBOINE						
			KELD						
	EARLY CRETACEOUS		ASHVILLE	BELLE FOURCHE					
				WESTGATE					
				NEWCASTLE (11)					
		SKULL CREEK							
		SWAN RIVER (15)							
		SUCCESS	S2						
JURASSIC	LATE JURASSIC	WASKADA							
		MELITA (19)	UPPER MELITA	LOWER MELITA					
	MIDDLE JURASSIC	RESTON (21)							
			UPPER AMARANTH (23)						
TRIASSIC (26)	MID TO LATE TRIASSIC	AMARANTH	LOWER AMARANTH (29)						
UNCONFORMITY									
PERMIAN			ST. MARTIN COMPLEX						
PENNSYLVANIAN			CHARLES						
MISSISSIPPIAN (39)		MADISON	KISBEY						
			MISSION CANYON (49)	MC-3 (41)	MC-3b (42)				
					DANDO EVAP.				
					MC-3a (43)				
					MC-2				
					MC-1 (44)				
			LODGEPOLE (59)	FLOSSIE LAKE (51)					
DALY (54)	WHITEWATER LAKE (52)								
		C. SHALE							

				C. CRINOIDAL (55)	VIRDEN (53)
				CROMER SHALE	
				BASAL LIMESTONE	SCALLION (56) ROUTLEDGE
		THREE FORKS (62)	BAKKEN (60)		UPPER
					MIDDLE
					LOWER
DEVONIAN (78)		SASKATCHEWAN	BIG VALLEY		
			TORQUAY (65)		
			BIRDBEAR (71)		
		MANITOBA	DUPEROW (72)		
			SOURIS RIVER (73)		
		ELK POINT	DAWSON BAY (74)		
			PRAIRIE EVAP. (75)		
			WINNIPEGOSIS (76)	UPPER (REEF)	
			ELM POINT	LOWER (PLATFORM)	
				ASHERN	
SILURIAN			INTERLAKE GROUP (79)		
ORDOVICIAN (89)		STONEWALL (80)		UPPER	
				LOWER	WILLIAMS
		STONY MOUNTIAN (81)		GUNTON	
				PENITENTIARY	
				GUNN	
		RED RIVER (82)		FORT GARRY	
				SELKIRK	
				CAT HEAD	
WINNIPEG (85)		DOG HEAD			
		UPPER SHALE			
		LOWER SANDSTONE			
CAMBRIAN			DEADWOOD (90)		
				UNCONFORMITY	
				PRECAMBRIAN	



**LEGEND**

- OIL PRODUCING
- OIL & GAS SHOWS
- FRESH WATER ZONE - WATER SOURCE WELLS ONLY NO DISPOSAL ALLOWED (PROTECT)
- TREATABLE WATER ZONE - WATER SOURCE WELLS ONLY, NO DISPOSAL ALLOWED
- SALT WATER DISPOSAL ALLOWED (ZONE NUMBERS FROM SIMPSON, MCCABE & BARCHYN, 1987)
- SALT RESOURCES - DISPOSAL ALLOWED ONLY WHERE SALT ABSENT