



2. 21969

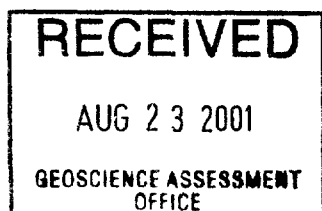
Kapuskasing Phosphate Operations  
P.O Box 92  
Kapuskasing, Ontario  
P5N 2Y1  
(705)337-4209

**TECHNICAL REPORT ON THE WINTER 2001  
EXPLORATION DRILLING PROGRAM**

Cargill Township  
District of Cochrane  
Ontario  
NTS 42 G/7

Kapuskasing, Ontario  
July, 2001

Peter Marengi  
Geologist  
Phone: (705)337-4218  
E-mail: Pmarengi@agrium.com



42G07SW2013 2.21969 CARGILL

## SUMMARY

9. 219 69

A program of exploratory drilling was conducted on the site of the Kapuskasing Phosphate Operations during the period between January and May of 2001. The program was designed to search for additional phosphate-bearing material beyond the current limits of the proposed Open Pit Mine, and to attempt to expand the limits of selected ore zones.

A total of 5 230 metres of core were produced from 57 drill holes. For the most part, this method of drilling proved rather effective in the recovery of unconsolidated materials. Recoveries were somewhat variable with the different material types, but on an overall basis the recoveries were on the order of 70 to 80%. With some revisions to our procedures, this drilling technique provides a superior sample for our purposes to the alternatives of Reverse Circulation and Sonic Drilling. Specific advantages include increased depth penetration, ability to traverse hard / cemented sections, and a solid recovered core of unconsolidated material which is an immense aid in identification and analysis of the material.

TABLE OF CONTENTS

Summary i  
List of Figures ii  
List of Tables ii  
Certification iii

1.0 INTRODUCTION 1  
2.0 LOCATION, ACCESS, AND CLAIMS 1  
3.0 PREVIOUS WORK 4  
4.0 GEOLOGICAL SETTING 4  
5.0 DESCRIPTION OF WINTER 2001 DRILLING PROGRAM 6  
6.0 CONCLUSIONS 7  
7.0 REFERENCES 7

APPENDIX I Detailed Drill logs  
APPENDIX II Plans and Sections



**LIST OF FIGURES**

<b>Figure</b>	<b>Description</b>	<b>Page</b>
1	Location Map	2
2	Land Holdings Map	3
3	Regional Geological Setting, Kapuskasing Phosphate Operations	5

**LIST OF TABLES**

<b>Table</b>	<b>Description</b>	<b>Page</b>
1	List of claims and mining leases, Winter 2001 drilling program	1

2. 21969

STATEMENT OF QUALIFICATIONS

I, Peter Marengi, currently residing at 39 Pine Crescent Street, Kapuskasing, Ontario do hereby certify the following:

- 1) That I am employed by Agrium General Partnership in the capacity of Geologist at the Kapuskasing Phosphate Operations,
- 2) That I hold the following degree:

B. Sc.in Geology, 1989, Universite du Quebec a Chicoutimi, Chicoutimi, Qc

- 3) That I have been practicing my profession since 1989.

*P. Marengi* Aug 17/01

Kapuskasing, Ontario  
July, 2001

Peter Marengi,  
Geologist  
Phone: (705)337-4218  
E-mail: Pmarengi@agrium.com

## 1.0 INTRODUCTION

A program of exploratory drilling was conducted on the Agrium Kapuskasing Phosphate Operation Mine Site located in Cargill Township during the period between January and April, 2001. This program was designed to search for additional phosphate-bearing material beyond the current limits of the proposed Open Pit mine, and to attempt to expand the limits of selected ore zones.

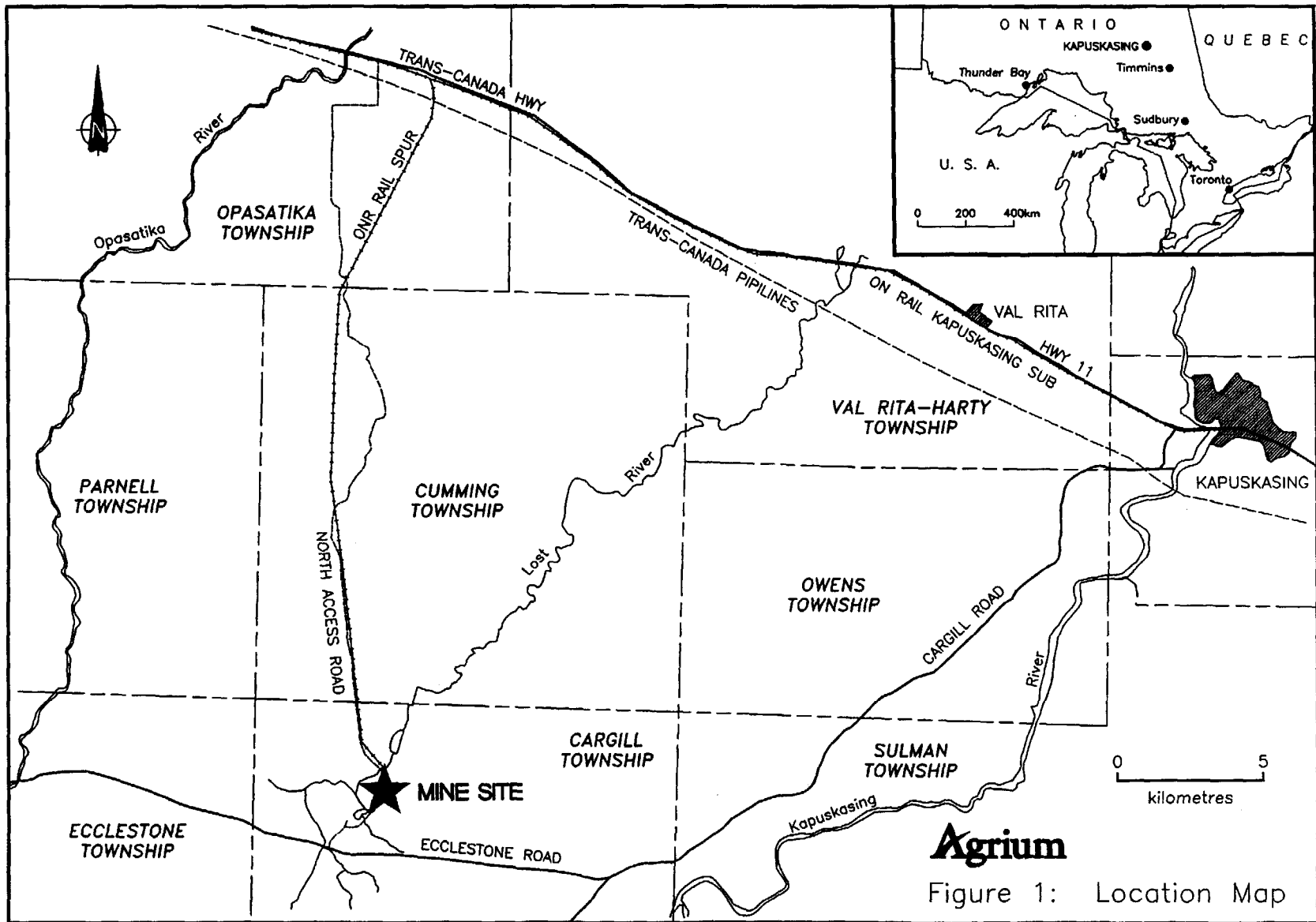
## 2.0 LOCATION, ACCESS, AND CLAIMS

The mine site is located in the north western portion of Cargill Township, the southern portion of Cumming Township, and the eastern portion of Ecclestone Township, approximately 30 kilometres south west of the town of Kapuskasing, Ontario (Figure 1). Access to the mine site is provided by all-weather gravel roads departing from the town. The current land holdings are held in the name of Viridian Inc., a predecessor company to Agrium General Partnership, and constitute a series of Mining Leases, unpatented mining claims, and Licenses of Occupation (Figure 2). Table 1 provides the relevant details pertaining to the claims on which the work was done:

**Table 1.** List of claims and mining leases covered in the Winter 2001 drilling program.

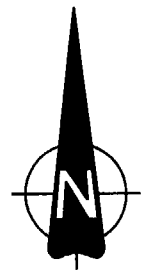
Claim No.	Lease No.	Area (Ha)	Amount Drilled (m)	Total Cost
89923	104714	18.76	236	\$15,801.92
77326	104714	15.00	166	\$11,075.52
78657	104714	16.32*	974	\$68,037.28
78658	104714	18.66*	1244.5	\$83,033.04
78659	104714	18.63	231.5	\$15,445.68
413072	104395	2254.43	579.5	\$38,664.24
413073	104395	2254.43	313	\$20,862.55
413074	104395	2254.43	929.5	\$57,325.24
413075	104395	2254.43	327	\$21,817.44
413076	104395	2554.43	229	\$17,120.88
<b>TOTAL</b>			<b>5 230</b>	<b>\$349,183.79</b>

\*Note: these claims are contained as individual parcels within the mining lease.



**Agrium**

Figure 1: Location Map

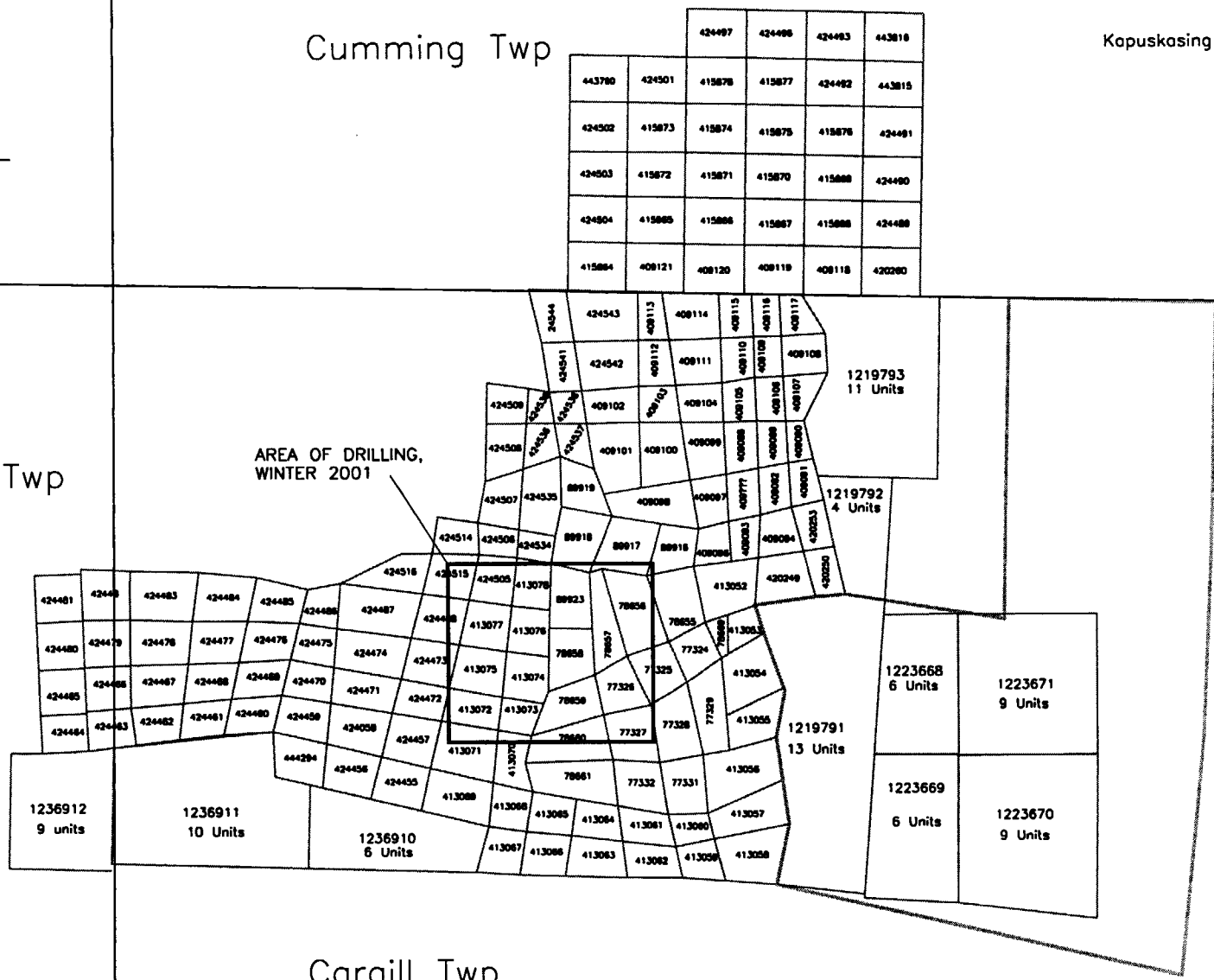


Cumming Twp

Ecclestone Twp

AREA OF DRILLING,  
WINTER 2001

Cargill Twp



1 000 metres

Figure 2. Land Holdings Map



### 3.0 PREVIOUS WORK

The first record of exploration work on the property was by Continental Copper Mines Limited who conducted a diamond drilling program in 1955 to examine a magnetic anomaly for its potential of hosting copper-nickel mineralization. The phosphate potential of the property was first discovered in 1974, and subsequent work led to a commencement of full scale production. A listing of the exploration and development activities on the property is given below:

1955: **Continental Copper Mines Limited**, Diamond drilling (rotary), 7 holes, 945 metres.

1970: **Kennco Exploration (Canada) Limited**, Diamond drilling (rotary), 6 holes, 1 062 metres.

1975: **International Minerals and Chemical Corporation**, Reverse Circulation drilling, 201 holes, 18 515 metres.

1980: **Sherritt Gordon Mines Limited**, Auger and Sonic drilling, 103 holes, 4 862 metres.

1981: **Sherritt Gordon Mines Limited**, Sonic drilling, 11 holes, 162 metres.

1985: **Sherritt Gordon Mines Limited**, Percussion drilling, 22 holes, 78 metres.

1995: **Sherritt Inc.**, Reverse Circulation drilling, 25 holes, 2 315 metres.

1996: **Viridian Inc.**, Reverse Circulation drilling, 78 holes, 7 530 metres.

1997: **Agrium Inc.**, Diamond drilling (Rotary), 7 holes, 624 metres.

1998: **Agrium Inc.**, Sonic drilling, 5 holes, 403 metres.

2000: **Agrium Inc.**, Diamond drilling (Rotary), 29 holes, 2483 metres.

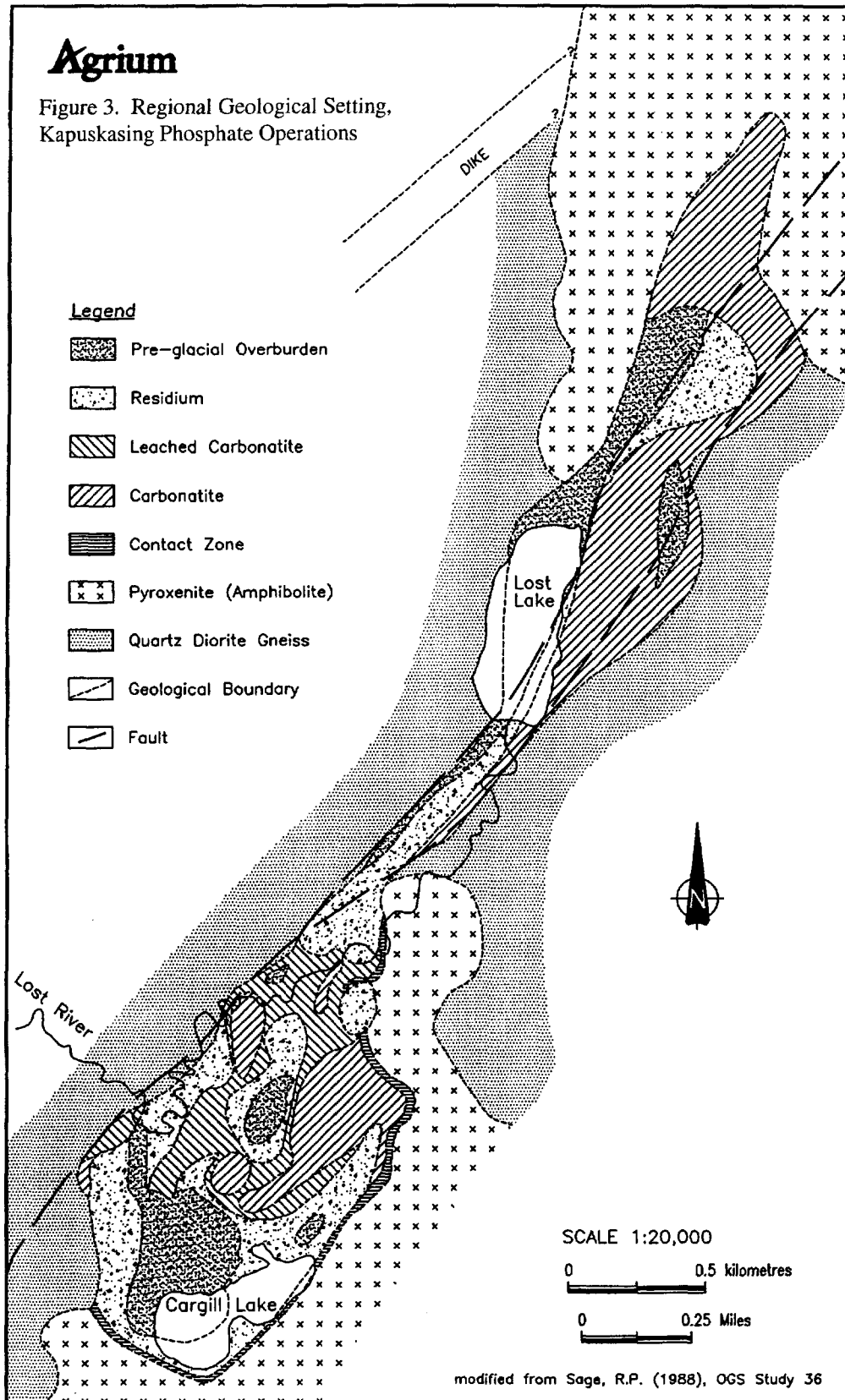
### 4.0 GEOLOGICAL SETTING

The property overlies rocks situated within the Kapuskasing Structural Zone (KSZ). This is a northeasterly striking, fault-bounded feature which is interpreted to be an up-thrusted block of material from the lower portions of the earth's crust. All of the rocks within the KSZ have been metamorphosed to either amphibolite or granulite facies.

The local geology consists of a core complex of multi-phased carbonatite rocks which are surrounded by a ring of pyroxenite, and have provided a U-Pb age date of 1907

# Agrium

Figure 3. Regional Geological Setting,  
Kapuskasing Phosphate Operations



Ma +/- 4 (Sage, 1988). These two rock types are in turn situated within quartz diorite gneisses that form a large portion of the Kapuskasing Structural Zone (Figure 3). The carbonatite host rock is sub-divided into two sub-types: sovite and rauhaugite. The sovite is a medium to coarse grained, white, banded rock in which calcite is the dominant carbonate species and it includes accessory minerals such as phlogopite, magnetite, clinohumite, apatite, olivine, pyrrhotite, and amphibole. Apatite can reach 15% abundance in this rock type (Sage, 1988). In sharp contrast to the sovite, the rauhaugite appears as a massive, fine grained, dense, beige to tan coloured rock in which dolomite is the dominant carbonate species. Phosphate values can range to 14% P<sub>2</sub>O<sub>5</sub> in the rauhaugite.

The high grade ore at the Kapuskasing Phosphate Operations is derived from the weathering and dissolution of the soluble minerals in the host carbonatite rock (eg. phlogopite). This process has left behind a residue of the insoluble minerals, largely apatite crystals, which is termed residuum. This residuum is formed above the host carbonatite, and is in turn covered by glacial deposits of lacustrine clays, and boulder tills of the Pleistocene age. Limited data suggest that this weathering took place during the late Cretaceous period (Sage, 1988).

In terms of a reference grid, the UTM co-ordinate system has been adopted (NAD 27, Zone 17).

Additional details regarding the mining, milling, and processing at the Kapuskasing Phosphate Operations are given in Pressacco (2000).

## **5.0 DESCRIPTION OF THE WINTER 2001 DRILLING PROGRAM**

A total of 5 230 metres of core were produced from 57 drill holes. All of the holes were spotted by means of a Trimble PRO XRS GPS system with referencing to known survey monuments. The collars of all of the holes were re-surveyed after their completion to determine the as-drilled hole location. The drilling was conducted by Norex Drilling of Timmins, Ontario under the supervision of the author, with assistance from the Reno Pressacco (Geologist, Agrium Kapuskasing Phosphate Operation). The program began in early January, 2001 and was completed with the termination of hole AGR-00-087 on May 10, 2001. The drilling was conducted with the goal of recovering as much of the unconsolidated materials as possible, and to that end, a triple-tube arrangement using regular HQ-sized drill rods was utilized for those materials lying above the rock surface. Once the rock contact was reached, the drilling method switched over to a normal HQ-sized recovery method. All of the recovered material was logged by the author, and is currently stored at the mine site of the Agrium Kapuskasing Phosphate Operations. Copies of the detailed drill logs are provided in Appendix I, and plans and sections of the drill holes are given in Appendix II.

## 6.0 CONCLUSIONS

For the most part, this method of drilling proved rather effective in the recovery of unconsolidated materials. Recoveries were somewhat variable with the different material types, but on an overall basis the recoveries were on the order of 70 to 80%. With some revisions to our procedures, this drilling technique provides a superior sample for our purposes to the alternatives of Reverse Circulation and Sonic Drilling. Specific advantages include increased depth penetration, ability to traverse hard / cemented sections, and a solid recovered core of unconsolidated material which is an immense aid in identification and analysis of the material.

## 7.0 REFERENCES

Clark, D.R., and Duncan, D., 1999, The Development of Agriums Phosphate Mine in Kapuskasing, Ontario: *in* CD ROM proceedings volume of the 101<sup>st</sup> Annual General Meeting of the Canadian Institute of Mining, Metallurgy, and Petroleum.

Pressacco, R., 2000, Overview of the Agrium Kapuskasing Phosphate Operation in CD ROM Proceedings Volume of the Mining Millennium 2000 International Convention and Trade Exhibition.

Sage, R.P., 1988, Geology of Carbonatite-Alkalic Rock Complexes in Ontario: Cargill Township Carbonatite Complex, District of Cochrane: Ontario Geological Survey Study 36, 92 p.

Sandvik, P.O., and Erdosh, G., 1984, Geology of the Cargill phosphate deposit in Northern Ontario: *in* The Geology of Industrial Minerals in Canada, CIMM Special Volume 29, p. 129-13.

*PT My 1. Aug 17/01*

Peter Marengi,  
Geologist  
Agrium, Kapuskasing Phosphate Operations

**APPENDIX I**

**DRILL LOGS**

PK 14/1

**Agrium**  
Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

Drill Hole ID  
AGR-01-031

North 5461549.8

Start Date 2/1/2001

East 367292.4

End Date 2/2/2001

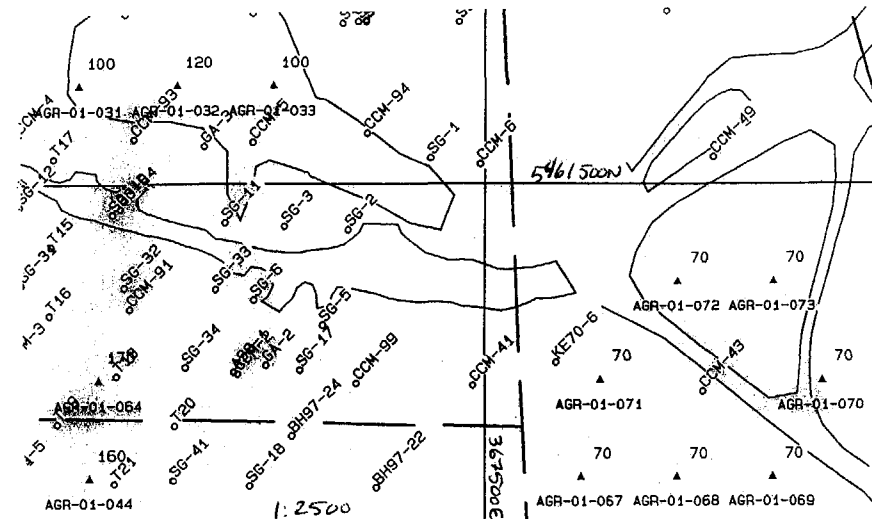
Elevation 209

Proposed Depth 100

Actual Depth 29

Number of Boxes 9

Logged By P. Marengi Date Logged 2/2/2001  
 Claim number 89923 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose Verify depth of rock in Stage 0 pit.  
 Results  
 Why hole terminated Early penetration into waste rock.  
 Core Size HQ-3  
 Casing None  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Pulps  
 Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 2

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-031

North 5461549.8

Start Date 2/1/2001

East 367292.4

End Date 2/2/2001

Elevation 209

Proposed Depth 100

Actual Depth 29

Number of Boxes 9

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	6.0 m	1.8 m	713	SAPROLITE - Dark brown, coarse sand/gravel with 10% cemented residuum. Hole drilled on 215 bench in Stage 0 pit, directly in ore/rock. No recovery between 2.0-3.5m and very little between 3.5-5.0m. Lower contact established by the appearance of solid rauhaugite.	29 %
6.0 m	29.0 m	21.9 m	710	RAUHAUGITE - Tan/beige, massive, homogeneous, weakly foliated rauhaugite (carbonatite) schistosity 35-40 degrees to core axis. Local coarse grained magnetite xtals. Local 0.5m veins of sandy weathered carbonatite rock (saproilite). Numerous cavities filled with calcite/quartz. Moderately fractured (blocky) rock. 29.0 m = EOH.	29 %

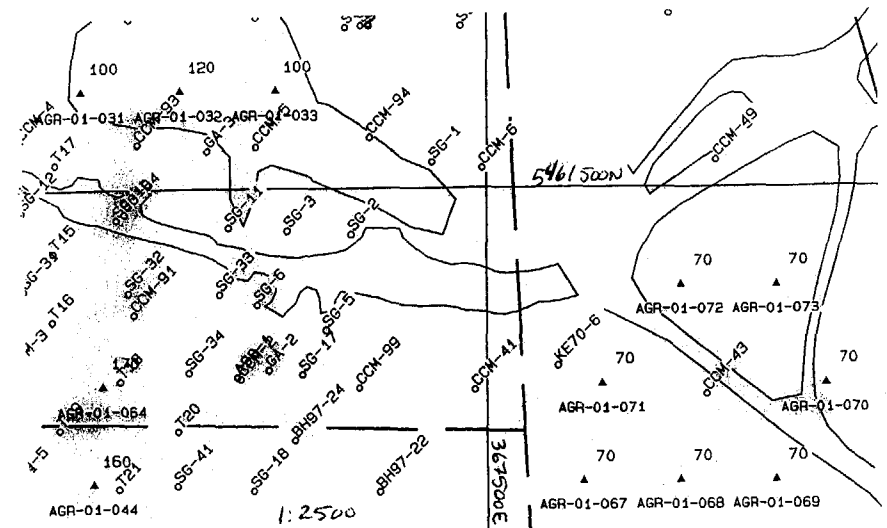
PL MY

**Agrium**  
Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

Drill Hole ID      North 5461549.3      Start Date 2/2/2001  
AGR-01-032      East 367338.5      End Date 2/4/2001  
Elevation 204.9  
Proposed Depth 120  
Actual Depth 75.5  
Number of Boxes 18

Logged By P. Marengi      Date Logged 2/7/2001  
Claim number 89923      Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose Verify depth of rock in Stage 0 Pit.  
Results  
Why hole terminated Early penetration into waste rock.  
Core Size HQ-3  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Pulps  
Core Stored Agrium Minesite



Friday, June 08, 2001



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-032

North 5461549.3

Start Date 2/2/2001

East 367338.5

End Date 2/4/2001

Elevation 204.9

Proposed Depth 120

Actual Depth 75.5

Number of Boxes 18

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	0.2 m	702	GREY RESIDUUM - Dark gray apatite sand. Very poor recovery possibly due to the fact that the hole was drilled in a mined area of Stage 0 Pit (material loosened from blasting and digging). Lower contact established by the appearance of brown rocky rubble.	4 %
3.5 m	11.0 m	1.4 m	720	IRON STAINED ROCK - Dark brown/black, rocky rubble/angular fragments of rock. No recovery from 6.5-8.0m. All fragments have heavy dark brown iron staining (goethite). No fines recovered in this section. Lower contact established by the appearance of brown residuum and the lack of rocky fragments	19 %
11.0 m	24.5 m	4.4 m	720	BROWN RESIDUUM - Very dark brown, sandy/muddy, homogeneous residuum. No recovery between 12.5-15.5m and 20.0-21.5m. Some rare 3cm sections of gray sandy residuum. Lower contact established by the appearance of rocky material.	33 %
24.5 m	33.5 m	4.4 m	713	ROCKY SAPROLITE - Dark brown rocky and sandy weathered carbonatite. Some schistosity visible; 20° to the core axis. Lower contact established by the appearance of tan colored rauhaugite.	49 %

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID

AGR-01-032

North 5461549.3

East 367338.5

Elevation 204.9

Proposed Depth 120

Actual Depth 75.5

Number of Boxes 18

Start Date 2/2/2001

End Date 2/4/2001

From	To	Length	Lithological Code	Description	% Recovery
33.5 m	75.5 m	39.9 m	710	<p>RAUHAUGITE (WITH SECTIONS OF SAPROLITE)</p> <ul style="list-style-type: none"><li>- 33.5 to 44.0m = 50% rauhaugite and 50% saprolite; tan colored medium grained/weathered carbonatite displaying sub vertical schistosity and containing 10% medium grained black magnetite xtals. Carbonatite is variably weathered and often displays 10-20cm sections of dark brown, muddy/sandy saprolite.</li><li>- 44.0-62.0m = 75% rauhaugite and 25% saprolite; mainly tan colored, massive, homogeneous rauhaugite containing 1-2m sections of saprolite (dark brown sandy weathered rauhaugite) approx. 1-2% magnetite phenocrists.</li><li>- 62.0-75.5m = 50% rauhaugite and 50% saprolite; saprolite appears in 2m sections and has a very dark brown color. The visible rauhaugite is very weathered to the semi-consolidated state. Schistosity remains sub-vertical. 75.5m = EOH.</li></ul>	95 %

PL My!

# Agrium

**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

**Drill Hole ID**  
**AGR-01-033**

**North** 5461546.946 **Start Date** 3/17/2001

**East** 367391.132 **End Date** 3/17/2001

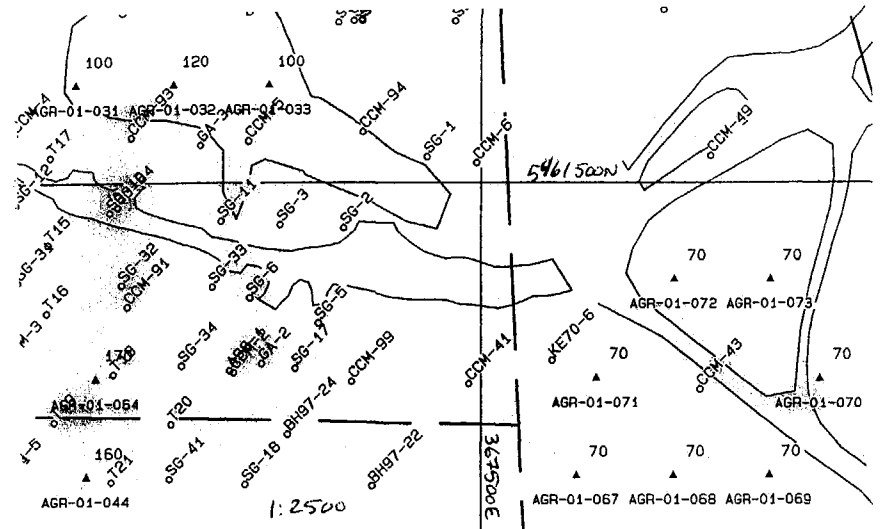
**Elevation** 206.7

**Proposed Depth** 100

**Actual Depth** 36.5

**Number of Boxes** 7

**Logged By** P. Marengi **Date Logged** 5/30/2001  
**Claim number** 89923 **Township** Cargill  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** None  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-033

North 5461546.946 Start Date 3/17/2001

East 367391.132 End Date 3/17/2001

Elevation 206.7

Proposed Depth 100

Actual Depth 36.5

Number of Boxes 7

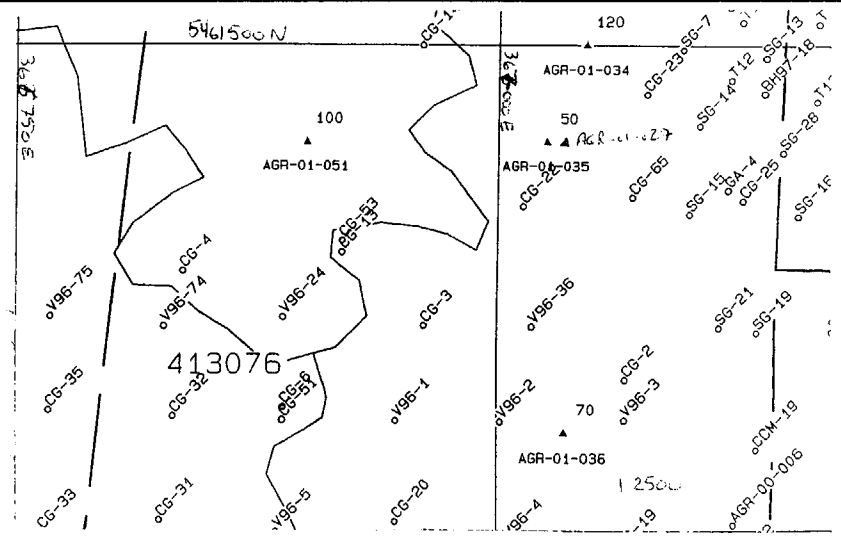
From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	1.7 m	720	GREY CEMENTED RESIDUUM - This hole was drilled in Stage 0 SE CORNER. Water was taken beside the main sump during ore digs. The water was very dirty and caused accelerated wear in the diamond bit. Recovery in this hole is poor mainly due to broken and loose ground cause by blasting and digging. Also this is a second drill brought on site with a new crew who aren't used to the ground. Medium to navy gray sandy rubble. Probably cemented residuum or hi iron waste rock. Lower contact established by the appearance of brown rubble.	34 %
5.0 m	29.0 m	11.5 m	713	SAPROLITE - Very blocky, rocky, iron stained mixture of cemented rubble/residuum. Conglomerate texture throughout. Local pieces of sovite? Over the last 3m. No recovery from 11.5 to 14m and very poor recovery (approx. 40%) up to 21.5m. Every thing is very dirty due to the sump water. Lower contact established by the appearance of light gray sovite.	48 %
29.0 m	36.5 m	6.4 m	711	SOVITE - Light to medium gray ( fresh sections over the last m) f.g. calcic matrix containing up to 10% xtals of magnetite/chlorite. No visible schistosity. 36.50m = EOH (Hole stopped because of dirty water problems and the bit was burnt out.)	85 %

PLM!

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**  
Project Winter 2001

**Drill Hole ID** North 5461500.3 Start Date 1/10/2001  
**AGR-01-034** East 367044.3 End Date 1/11/2001  
Elevation 238.6  
Proposed Depth 120  
Actual Depth 58.5  
Number of Boxes 9

Logged By P. Marengi Date Logged 1/15/2001  
Claim number 413076 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose Definition Drilling  
  
Results  
  
Why hole terminated Normal termination in rock  
Core Size NQ3  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Pulps  
Core Stored Agrium Minesite



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-034

North 5461500.3

Start Date 1/10/2001

East 367044.3

End Date 1/11/2001

Elevation 238.6

Proposed Depth 120

Actual Depth 58.5

Number of Boxes 9

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	13.5 m	5.2 m	715	VARVED/GUMBO CLAY - 4cm of black organic peat followed by 1m of dark brown layered varved clay (0-1m) followed by light gray, homogeneous gumbo clay (1-13.5m). Contacts are estimated. Lower contact established by the appearance of 1st boulders. No recovery from 3m to 9m.	39 %
13.5 m	24.0 m	6.3 m	717	BOULDER/BASAL TILL - Light gray to light brown very fine till, locally clay, containing up to 10% pebbles and boulders of varying sizes and composition. Visible boulder compositions include granitic gneiss, mafics volcanics and quartz. Sizes range from a few mm to 35 cm. Lower contact established by appearance of brown mud. The last meter was sampled. Very poor recovery over the last 3 m of this section (21m - 24m =10%).	60 %
24.0 m	36.0 m	9.2 m	720	BROWN RESIDUUM - 80% medium to dark brown sandy mud (crumbly texture); strong iron staining locally (goethite) and tan spots also locally (limonite). 20% rocky rubble of 3-4cm pieces of iron stained carbonatite rock (poor recovery in this material). The last meter of this section becomes richer in green clinochlore. None magnetic throughout. Some visible apatite xtals. Lower contact established by appearance of green clinochlore.	77 %
36.0 m	39.0 m	3.0 m	704	CLINOCHLORE - Medium to olive green section of clinochlore. Layer (as a mica) pasty, homogeneous, soft, grading in to a brown mud as in previous section. No structure visible but good recovery due to thickness/pastiness.	100 %

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-034

North 5461500.3

Start Date 1/10/2001

East 367044.3

End Date 1/11/2001

Elevation 238.6

Proposed Depth 120

Actual Depth 58.5

Number of Boxes 9

From	To	Length	Lithological Code	Description	% Recovery
39.0 m	51.0 m	9.5 m	7130	SAPROLITE - Greenish brown muddy/sandy rock (center of core is relatively hard compared to outer layers of core) The green clinochlore is not consistent throughout but rather spotty. This section grades progressively into a harder brown stain carbonatite which determines the lower contact of this unit. Recovery seems to decrease around this rubble zone (soft/hard contacts).	77 %
51.0 m	58.5 m	4.0 m	710	CARBONATITE (RAUHAUGITE) - Very blocky, medium to dark brown (stained), very fine grained, locally tan brown, displaying numerous cavities (empty, some filled with chert), local veins of saprolite (dark brown mud), massive texture where visible weathering more pronounced around cavities and veins. Local odd patch of magnetite. Some light brown staining. Could also be cemented ore as it doesn't have the typical rauhaugite look. 58.50m = EOH.	53 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*Handwritten initials: PM*

**Drill Hole ID  
AGR-01-035**

North 5461448.9

Start Date 1/11/2001

East 367030.3

End Date 1/13/2001

Elevation 239

Proposed Depth 50

Actual Depth 72.5

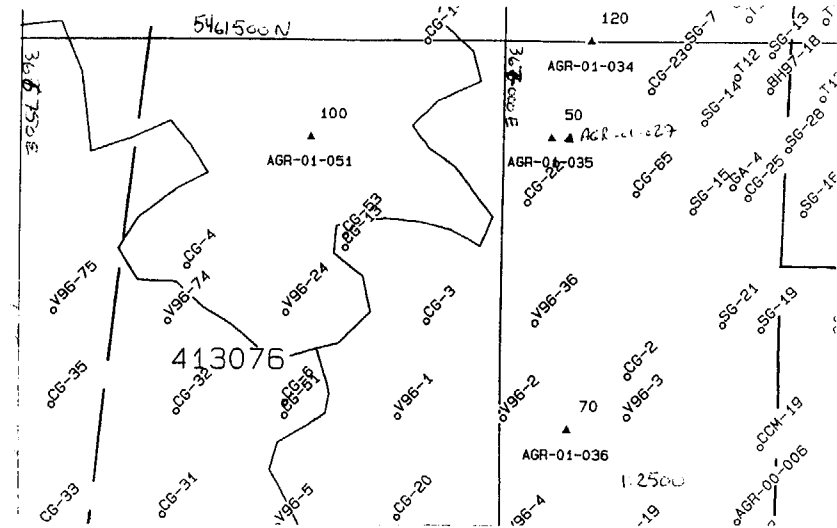
Number of Boxes 7

Logged By P. Marengi  
Date Logged 1/19/2001  
Township Cargill

Claim number 413076  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose In-fill

**Results**

Why hole terminated Normal termination in rock  
Core Size NQ3  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Pulps  
Core Stored Agrium Minesite



Friday, June 08, 2001



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-035

North 5461448.9 Start Date 1/11/2001

East 367030.3 End Date 1/13/2001

Elevation 239

Proposed Depth 50

Actual Depth 72.5

Number of Boxes 7

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	0.4 m	714	VARVE CLAY - Light to medium brown, lightly layered brown clay. This clay is slightly harder (more compact) than the gumbo clay that follows. Lower contact established on appearance of gray gumbo clay. No visible organic material was probably removed by the Pit or dozed off by the drillers when making the setup for the drill.	10 %
3.5 m	15.5 m	4.7 m	715	GUMBO CLAY - Light to medium gray, homogeneous, pasty and sticky clay. Lower contact established by appearance of pebbles and boulders. No recovery (less than 1m) between 8m to 14m.	39 %
15.5 m	18.5 m	0.3 m	717	BOLDER TILL/BASAL TILL - Most of the clay/ fine till consolidating the boulders/pebbles has been lost/washed out due to recovery problems. What remains is tightly packed granitic gneiss/mafic pebbles and boulders ranging in size from few mm to 5cm. Sampling to start at 18.5m for this hole.	27 %
18.5 m	26.0 m	2.5 m	720	BROWN RESIDUUM - 90%-95% dark brown medium grained mud containing very little rock. Some visible apatite xtls but hard to see.	33 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-035**

*North* 5461448.9

*Start Date* 1/11/2001

*East* 367030.3

*End Date* 1/13/2001

*Elevation* 239

*Proposed Depth* 50

*Actual Depth* 72.5

*Number of Boxes* 7

From	To	Length	Lithological Code	Description	% Recovery
26.0 m	47.0 m	9.5 m	720	BROWN ROCKY MUD - 30% rubble consisting of iron stained rock. The rubble is found mainly between 26m and 38m intermittently mixed with brown/dark mud in 0.5m intervals. The brown mud gets darker with depth (getting closer to the bedrock) which may indicate a layer of saprolite between 41m and 47m. Upper contact established by an increase in the appearance of rock rubble and the lower contact is established by the decrease in brown mud turning progressively to rock. Heavy dark brown staining throughout. Not magnetic.	45 %
47.0 m	72.5 m	3.7 m	720	MUDDY BROWN ROCK - 75-80% light brown to tan brown, blocky rock containing 1.5m intervals (only 1 visible) of saprolite (dark brown mud). Local coarse grained magnetite xtals in the rock. Numerous mud filled, iron stained cavities/hairline veins throughout. Some cavities reach up to 10cm. The texture is locally sponge like. Very poor recovery in this section with less than 3m of core between 56.0m and 72.5m. Local grayish green mud typical to saprolite. No apparent structural features. Rock looks massive. 72.5m = EOH.	15 %

Friday, June 08, 2001

Page 3 of 3

*PK M 1*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

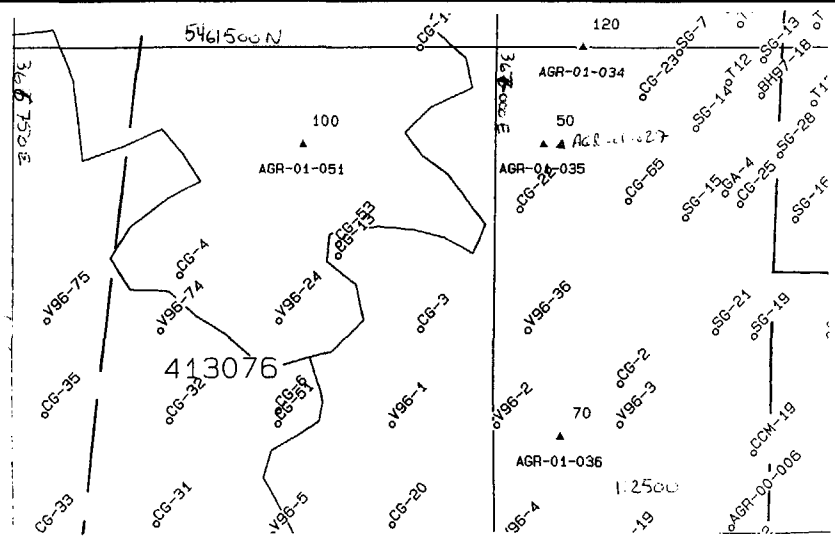
**Drill Hole ID**  
**AGR-01-036**

North 5461300.2  
 East 367035.9  
 Elevation 240.1  
 Proposed Depth 70  
 Actual Depth 34.5  
 Number of Boxes 7

Start Date 1/13/2001  
 End Date 1/14/2001

Logged By P. Marengi  
 Claim number 413076  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose In-fill  
 Results  
 Why hole terminated Normal termination in rock  
 Core Size NQ-3  
 Casing None  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Pulps  
 Core Stored Agrium Minesite

Date Logged 1/16/2001  
 Township Cargill



Friday, June 08, 2001

Page 1 of 2

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-036

North 5461300.2

Start Date 1/13/2001

East 367035.9

End Date 1/14/2001

Elevation 240.1

Proposed Depth 70

Actual Depth 34.5

Number of Boxes 7

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	6.5 m	1.4 m	715	VARVED / GUMBO CLAY - Dark brown homogeneous varved clay (0-1.5m), medium gray homogeneous gumbo clay (1.5-6.5.) Lower contact established by appearance of rauhaugite rock. No recovery from 1.5m to 6.0m. No organic material at beginning because of hole because this hole was spotted in an existing road.	22 %
6.5 m	34.5 m	28.0 m	710	RAUHAUGITE (CARBONATITE ROCK) - Very blocky/broken core but good recovery overall. Drillers tend to spread core out over sections between depth indicators (wooden blocks). Recovery is based on actual physical length of core observed in core box divided by the length indicated by blocks. - Light brown (tan) to medium brown, massive rock (carbonatite) displaying numerous hairline fractures and cavities filled with varying minerals (quartz, magnetite, empty...). The rock displays varying degrees of weathering but more pronounced around or close to zones of intense fracturing. Local coarse grained magnetite (black) xtals. Local 1m sections of saprolite (brown mud). No evident structural features other than fractures seem to be aligned parallel to core axis. 34.50m = EOH.	100 %

Friday, June 08, 2001

Page 2 of 2

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

*PL M 1.*

**Drill Hole ID**  
**AGR-01-037**

North 5461249.1 Start Date 4/18/2001

East 367359.1 End Date 4/19/2001

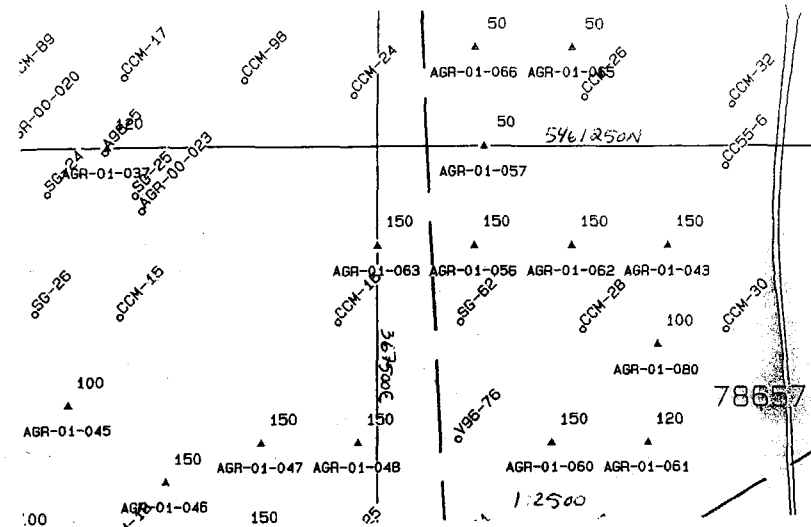
Elevation 226.6

Proposed Depth 120

Actual Depth 32

Number of Boxes 7

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78658 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-037

North 5461249.1

Start Date 4/18/2001

East 367359.1

End Date 4/19/2001

Elevation 226.6

Proposed Depth 120

Actual Depth 32

Number of Boxes 7

From	To	Length	Lithological Code	Description	% Recovery
0.0	20.0	20.0	720	GREY RESIDUUM - Medium to navy gray, sandy, homogeneous residuum. Lower contact established by the appearance of weathered sovite.	55 %
20.0	25.3	5.3	713	WEATHERED SOVITE - Light gray to light green, badly broken sovite. Minor rusty stains in fractures but otherwise unweathered. Locally coarse (1cm) black magnetite xtals. Lower contact established by the appearance of fresh sovite.	70 %
25.3	32.0	6.8	711	SOVITE - Light gray to white, coarse grained (black magnetite, green chlorite / mica), 0.5 cm xtals, sovite.. No signs of weathering throughout. Sub-vertical schistosity displayed by thin mm bands of magnetite and chlorite.32.0m = EOH.	100 %

PL M 1.

**Agrium**

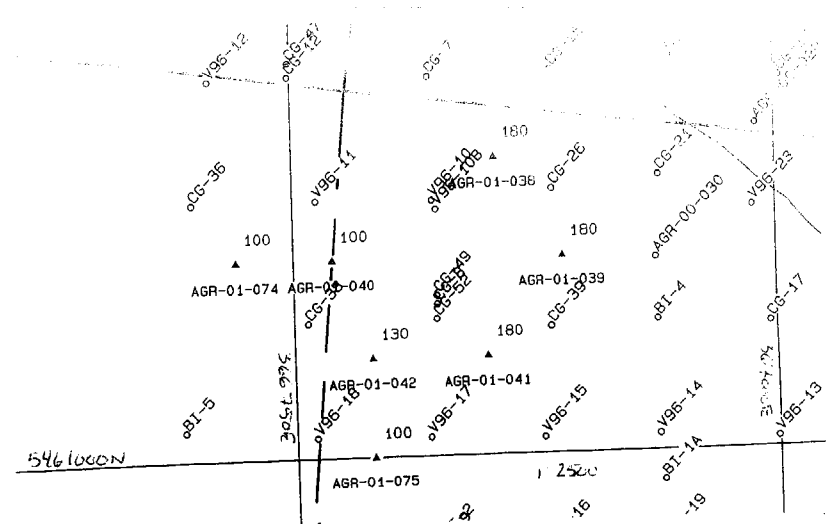
**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

**Drill Hole ID  
AGR-01-038**

North 5461150.813 Start Date 2/6/2001  
East 366859.207 End Date 2/14/2001  
Elevation 235.71  
Proposed Depth 180  
Actual Depth 123.5  
Number of Boxes 33

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 413074 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose Definition drilling.  
  
Results  
Why hole terminated Normal Termination  
Core Size HQ-3  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Pulps  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 4

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

**Drill Hole ID**  
AGR-01-038

**North** 5461150.813

**Start Date** 2/6/2001

**East** 366859.207

**End Date** 2/14/2001

**Elevation** 235.71

**Proposed Depth** 180

**Actual Depth** 123.5

**Number of Boxes** 33

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	1.5 m	0.7 m	714	VARVED CLAY - Brown (medium), semi layered, firm clay. Lower contact established by the appearance of soft gray clay.	47 %
1.5 m	7.0 m	2.2 m	715	GUMBO CLAY - Light gray, soft, homogeneous, pasty clay. No inclusions of any kind. Lower contact established by the appearance of pebbles and boulders.	40 %
7.0 m	42.5 m	27.6 m	717	BOULDER / BASAL TILL - Medium gray, fine to medium grained silt containing up to 15% pebbles (1mm-4cm) and boulders (reaching up to 1.5m). The till is homogeneous for the most part except for rare sections of clay (medium brown; 0.5m) between 8.0 - 12.5m. Boulder and pebble composition consist mainly of granodiorite/granitic gneiss/mafic. Boulders are mostly visible on the upper half of this section. Till is fairly massive. Some very well rounded boulders locally. Fairly sharp lower contact established by the appearance of black organic peat unit.	77 %
42.5 m	53.0 m	9.5 m	706	ORGANIC PEAT (CRETACEOUS WASTE) - Black to dark gray, soft, homogeneous, organic peat characterized by medium to coarse grained silica sand and very fine organic matrix containing up to 5% pieces of "petrified" wood. This section remains very dark in color until 53m at which depth it turns to a dark gray and "wood chips" seem to disappear (established lower contact).	90 %



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

**Drill Hole ID**  
**AGR-01-038**

**North** 5461150.813 **Start Date** 2/6/2001

**East** 366859.207 **End Date** 2/14/2001

**Elevation** 235.71

**Proposed Depth** 180

**Actual Depth** 123.5

**Number of Boxes** 33

From	To	Length	Lithological Code	Description	% Recovery
53.0 m	63.5 m	8.4 m	705	SILICA SAND (+ 5% PEAT) - Medium to dark gray, coarse grained, homogeneous sand/coarse silt. Locally bedding is visible in the finer material. Lower contact established on color variation only. Very gradual contact. Grains of sand (mm) are mainly milky quartz. Coarseness very visible. Lower contact established by the appearance of organic peat.	80 %
63.5 m	69.5 m	4.8 m	706	ORGANIC PEAT (CRETACEOUS WASTE) - Black/brown very fine organic silt with local 1-2cm pieces of "petrified wood". Fairly sharp lower contact established at A-ore contact. Local beds of coarse grained silica sand. No structural features visible. Lower contact established by the appearance of gray residuum.	80 %
69.5 m	80.0 m	7.4 m	702	GRAY RESIDUUM - Medium gray, very fine (flour texture) apatite sand with local streaks of white. Lower contact established by the appearance of brown rocky mud.	70 %
80.0 m	87.5 m	6.6 m	713	SAPROLITE (WEATHERED SOVITE) - Dark to medium brown, rocky/coarse sand weathered carbonatite (some could be cemented ore). Only 10% is ± fresh rock (sovite). Lower contact established by the appearance of > 50% sovite. Some local limonite colored patches. Rock fragments characterized by large cavities, very iron stained, large flakes of chlorite, sub-vertical shistosity, large magnetite xtals. Lower contact established by the appearance of fresh sovite.	88 %

# Agrium

**Kapuskasing Phosphate Operation**

**Exploration Drilling**

*Project* Winter 2001

*Lithological Descriptions*

**Drill Hole ID**  
**AGR-01-038**

**North** 5461150.813 **Start Date** 2/6/2001

**East** 366859.207 **End Date** 2/14/2001

**Elevation** 235.71

**Proposed Depth** 180

**Actual Depth** 123.5

**Number of Boxes** 33

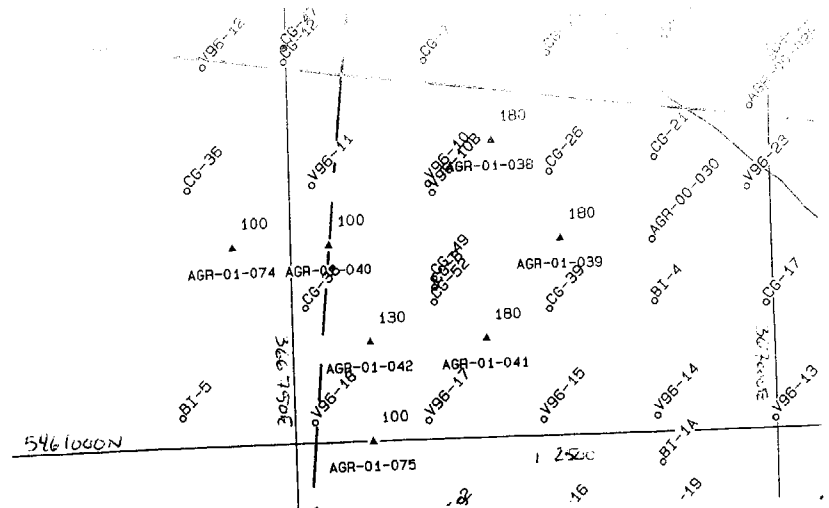
From	To	Length	Lithological Code	Description	% Recovery
87.5 m	123.5 m	28.8 m	711	SOVITE / WEATHERED SOVITE - About 60% grayish green/white/black 1-1.5m sections of sovite with 1-2m intervals of dark brown saprolite. Sections of saprolite decrease with depth, mainly located within the first 10-15m of this section. Sovite is characterized by large (1-4cm) black, widely spaced magnetite phenocrysts, thin layers of green mica/chlorite, matrix of rice shaped white calcite? Many large 2cm cavities are present throughout but seem to decrease with depth. Sub-vertical schistosity. No recovery between 117m and 13.5m due to drilling difficulties. 123.50m = EOH.	80 %

*DF Mt.*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**  
Project Winter 2001

**Drill Hole ID** North 5461099.169 Start Date 2/14/2001  
**AGR-01-039** East 366890.731 End Date 2/21/2001  
Elevation 237.8  
Proposed Depth 180  
Actual Depth 245  
Number of Boxes 65

Logged By P. Marengi Date Logged 2/21/2001  
Claim number 413074 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose Definition drilling.  
Results  
Why hole terminated Early Termination due to danger of squeezing rods.  
Core Size HQ-3  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Pulps  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 5

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-039

North 5461099.169 Start Date 2/14/2001

East 366890.731 End Date 2/21/2001

Elevation 237.8

Proposed Depth 180

Actual Depth 245

Number of Boxes 65

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	9.0 m	1.4 m	714	VARVED CLAY - Dark brown, semi-layered (parallel to core axis), homogeneous, firm clay. Lower contact established by the appearance of gray gumbo clay.	16 %
9.0 m	11.0 m	1.6 m	715	GUMBO CLAY - Light to medium gray, pasty, homogeneous (no fragments/pebbles) clay. Lower contact established by the appearance of pebbles and boulders.	80 %
11.0 m	48.5 m	30.0 m	717	BOULDER / BASAL TILL - Medium gray coarse/medium silty/clay matrix containing up to 20% pebbles [mm to 3cm, angular + well rounded] and boulders[>3cm up to 40cm, well rounded but occasional angular]. Local beds of fine clay which appear in a darker brown/gray and seem ± barren of pebbles. Lower contact (gradual) established by the disappearance of pebbles and boulders. The silty matrix gets finer in texture but the color remains the same both sides of the contact. Lower contact re-established to the appearance of black peat (organic) rich unit. After further investigation there is a section from 39.5 to 46.0m which is clay/fine silt with the absence of pebbles. These pebbles re-appear at 46.0m but boulders are absent.	80 %
48.5 m	68.5 m	13.0 m	706	ORGANIC PEAT RICH / SILICA SAND (CRETACEOUS WASTE) - Black to dark brown organic peat containing local "chips" of petrified wood. Pretty homogeneous unit with the exception of a local 1m section of brown colored, medium grained silica sand. Lower contact established by the appearance of beige/pink clay. No visible bedding throughout.	65 %

Friday, June 08, 2001

Page 2 of 5

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-039

North 5461099.169 Start Date 2/14/2001

East 366890.731 End Date 2/21/2001

Elevation 237.8

Proposed Depth 180

Actual Depth 245

Number of Boxes 65

From	To	Length	Lithological Code	Description	% Recovery
68.5 m	80.0 m	10.9 m	707	CLAY - Light brown to beige to pink clay. Very homogeneous when sliced open; local iron stained (light brown) layers with pink/white specks (??). No visible inclusions. Very soft and muddy texture. Gradual lower contact established by the appearance of black silica sand rich organic peat.	95 %
80.0 m	83.5 m	3.3 m	706	ORGANIC PEAT (CRETACEOUS WASTE) - Black organic peat displaying numerous "wood chips". Texture is more on the clay side rather than the usual coarse grained silica sand. Lower contact established by the appearance of reddish brown weathered rock.	95 %
83.5 m	84.5 m	1.0 m	720	WEATHERED ROCK - Reddish brown, coarse grained, semi-consolidated sand/conglomerate/weathered rock. Lower contact established by the appearance of black organic rich clay.	95 %
84.5 m	89.0 m	4.0 m	707	MIXED CLAY - Mixture (50/50) of black/dark gray organic rich (or fine silt) and whitish beige clays in a mixed pattern, could be close to contacts (slumping?). Lower contact established by the appearance of greenish sandy clay.	90 %
89.0 m	101.0 m	10.2 m	706	ORGANIC RICH CLAY - Black to dark green mixed sandy clays with colors varying from beige/black/olive green/brown in sections roughly 1m long. Lower contact established by the appearance of rocky green silt. These clays seem to be interbedded (interwoven) in thin 1 cm beds throughout the interior of the core. The overall section is soft (flakes with a knife).	85 %

Friday, June 08, 2001

Page 3 of 5

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-039

North 5461099.169 Start Date 2/14/2001

East 366890.731 End Date 2/21/2001

Elevation 237.8

Proposed Depth 180

Actual Depth 245

Number of Boxes 65

From	To	Length	Lithological Code	Description	% Recovery
101.0 m	110.0 m	5.4 m	713	WEATHERED OOLITHIC ROCK - Overall appearance is dark greenish brown rocky/coarse sandy mud with local 1m sections of lighter rock/mud. Hardness seems to increase with depth. Lower contact established by the appearance of red hematitic mud. One 1m section of rock shows a conglomerate texture with "ooliths" of hematite/magnetite and fragments of chert and other various minerals/rocks. Overall this is a hard section (very blocky and often ground up.)	60 %
110.0 m	113.0 m	2.1 m	708	HEMATATIC SAND / MUD - Dark crimson red, coarse grained sand/silt. Center of core is dark brown in color but of the same texture. Lower contact established by the appearance of clay.	70 %
113.0 m	120.5 m	6.0 m	713	WEATHERED ROCK / KAOLINITE CLAY - The first 3 m seems to be a light brown to beige kaolinite clay but grades into a dark brownish green rubble of rock and coarse sand/mud. Some hematite staining on rock fragments. Where fresh the rock seems to be massive and very fine grained. Lower contact established by the appearance of dark gray cemented ore.	80 %
120.5 m	174.5 m	37.8 m	720	CEMENTED RESIDUUM - Very fine gray fragmental rock, very homogeneous and consistent. Has cemented ore texture (cemented fragments) various degrees of weathering throughout. Large fragments range from 30-40cm, very angular locally. Dark color and texture becomes a mixture of sand (60%) and rocky cemented residuum. Lots (>40%), fine visible apatite xtals. Flouy texture to sand. From 161 to 174.5 >60% rock (cemented residuum) and 40% sand/rubble. Cemented rocky residuum is dark gray to dark brown and displays black manganese staining in most fractures. Lower contact established by the appearance of brown sandy residuum.	70 %

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID  
AGR-01-039

North 5461099.169 Start Date 2/14/2001

East 366890.731 End Date 2/21/2001

Elevation 237.8

Proposed Depth 180

Actual Depth 245

Number of Boxes 65

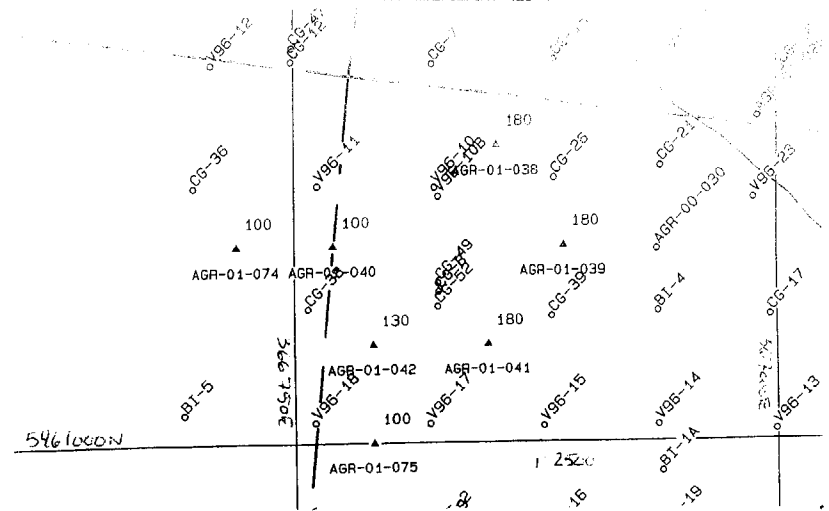
From	To	Length	Lithological Code	Description	% Recovery
174.5 m	180.5 m	4.8 m	720	SANDY RESIDUUM - Beige brown medium grained sand with up to 15% rocky cemented residuum. Lower contact established by the appearance of dark brown mud.	80 %
180.5 m	245.0 m	51.6 m	720	MUDDY BROWN RESIDUUM - Very dark brown mud with approx. 10% dark brown to black manganese stained rubble. Lower contact established by the appearance of rock. Color pretty consistent but locally there is crimson red hematite/magnetite staining, tan brown limonite, reddish brown goethite, local black manganese stains also. Weathered chunks of magnetite are also locally abundant. The section gets coarser with depth. The rods were getting tight in the hole therefore the hole was terminated at 245m. The material remains consistent throughout the section. No return between 188m and 189.5m. 245m = EOH	80 %

PL My 1.

**Agrium**  
Kapuskasing Phosphate Operation  
Exploration Drilling  
Project Winter 2001

**Drill Hole ID** North 5461101.886 Start Date 2/21/2001  
**AGR-01-040** East 366773.2 End Date 3/2/2001  
Elevation 238.64  
Proposed Depth 100  
Actual Depth 141.5  
Number of Boxes 35

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 413075 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001



# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID  
AGR-01-040

North 5461101.886

Start Date 2/21/2001

East 366773.2

End Date 3/2/2001

Elevation 238.64

Proposed Depth 100

Actual Depth 141.5

Number of Boxes 35

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	0.8 m	714	VARVED CLAY - Dark brown homogeneous, weakly layered clay. Lower contact established by the appearance of gray clay.	15 %
5.0 m	8.0 m	1.0 m	715	GUMBO CLAY - Medium gray, homogeneous, soft clay. Lower contact established by the appearance of pebbles and boulders.	33 %
8.0 m	26.5 m	8.0 m	717	BOULDER / BASAL TILL - Light to medium gray, silty mud containing up to 15% pebbles (mm- 5cm) pebbles and boulders are homogeneous in composition but consist of granodiorite and mafics mostly. Some boulders reach up to 1 m. Lower contact established by the appearance of blackish organic clay.	43 %
26.5 m	30.5 m	2.8 m	706	ORGANIC MATERIAL AND CLAY (CRETACEOUS WASTE) - Black to dark gray, clay and fine silt. Colors vary between lighter and darker shades of gray. First meter is mostly mixed organics and clay. The organics drop off after that. Lower contact established on the appearance of sandy ore texture.	70 %

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

**Drill Hole ID**  
**AGR-01-040**

**North** 5461101.886 **Start Date** 2/21/2001

**East** 366773.2 **End Date** 3/2/2001

**Elevation** 238.64

**Proposed Depth** 100

**Actual Depth** 141.5

**Number of Boxes** 35

From	To	Length	Lithological Code	Description	% Recovery
30.5 m	54.5 m	15.6 m	702	SANDY GRAY RESIDUUM - White to very light gray, medium grained, sandy apatite sand with small intervals of whitish gray clay. Upper and lower contacts very hard to establish but assays will allow adjustments. Clays are harder to penetrate using knife than are the sands. The bentonite drilling mud renders everything homogeneous (cakes the core) in color. Lower contact estimated by the texture of clay. Poor recovery between 30.5 and 33.5m (approx. 1m); 42.5 and 45.5m (approx. 1m)	65 %
54.5 m	87.0 m	24.4 m	707	GREY CLAY - Medium to dark gray to medium green homogeneous clay. Very consistent pasty, locally medium silty, local visible bedding planes (sedimentation). There could be some sections of residuum. We will see with the assays. Lower contact established by the appearance of dark brown mud. **Contains green glassy mineral	75 %
87.0 m	118.3 m	23.4 m	713	WEATHERED CARBONATITE (RAUHAUGITE) - Light brown (tan brown) with sections of rust brown; dark orange brown; reddish brown; dark chocolate brown. Muddy coarse grained crumbly weathered carbonatite (probably rauhaugite). Spotted interior of chlorite/magnetite/mica. Locally hard rock but very heavily iron stained. Poor recovery between 87m-90.5m and 107m-108.5m. Lower contact established by the appearance of white/green unit.	75 %
118.3 m	128.0 m	7.3 m	712	WEATHERED PYROXENITE / CARBONATITE - Mixed sections of light to medium gray to medium green pyroxenite (70%) and light rusty brown crumbly weathered rauhaugite (carbonatite). Pyroxenite contains approx. 40% flakes of chlorite/mica. Lower contact established by the disappearance of pyroxenite. Pyroxenite has a sandy coarse ore texture and locally clay texture.	75 %

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project Winter 2001*

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-040**

*North* 5461101.886 *Start Date* 2/21/2001

*East* 366773.2 *End Date* 3/2/2001

*Elevation* 238.64

*Proposed Depth* 100

*Actual Depth* 141.5

*Number of Boxes* 35

From	To	Length	Lithological Code	Description	% Recovery
128.0 m	135.5 m	6.0 m	713	WEATHERED CARBONATITE - Light tan brown to medium brown to rusty orange brown, crumbly, muddy, coarse sandy weathered carbonatite (rauhaugite). Locally hard iron stained nuggets. Lower contact established by the appearance of green weathered pyroxenite.	80 %
135.5 m	141.5 m	5.1 m	712	WEATHERED PYROXENITE - Dark green with strings of white/pink plagioclase. The dark green is pyroxene and appears flaky and soft almost muddy, very homogeneous section. Seems to get harder with depth. 141.50m = EOH.	85 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PL M 1.*

**Drill Hole ID  
AGR-01-041**

North 5461048.947

Start Date 3/2/2001

East 366850.176

End Date 3/6/2001

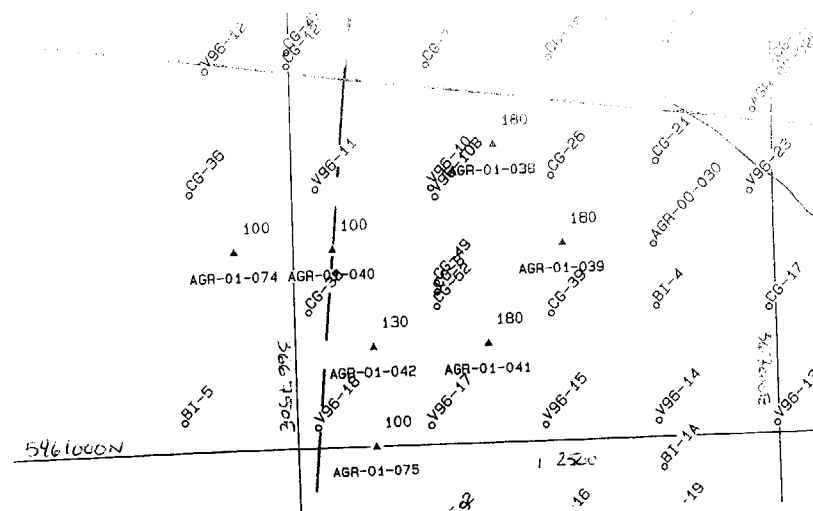
Elevation 239.41

Proposed Depth 180

Actual Depth 180

Number of Boxes 46

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 413074 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 4

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-041

North 5461048.947 Start Date 3/2/2001

East 366850.176 End Date 3/6/2001

Elevation 239.41

Proposed Depth 180

Actual Depth 180

Number of Boxes 46

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	2.2 m	0.2 m	718	FOREST GROWTH - Black organic forest floor organics. Lower contact established by the appearance of varved clay.	10 %
2.2 m	4.8 m	1.7 m	714	VARVED CLAY - Medium brown, semi-layered varved clay. Lower contact established by the appearance of pebbles and boulders.	65 %
4.8 m	23.0 m	10.0 m	717	BOULDER / BASAL TILL - Light gray silty clay matrix containing up to 10-15% pebbles and boulders heterogeneous in composition. Pebbles range in size from 1mm to 3cm and boulders range from 5cm to 15cm. Composition of pebbles and boulders is mostly granodiorite and some mafics. Lower contact established by the appearance of dark gray clay. Lower contact is gradual and boulders become less frequent with depth. No recovery from 5 to 8m and from 17 to 18.5m.	55 %
23.0 m	33.5 m	8.9 m	706	ORGANIC CLAY (CRETACEOUS WASTE) - Dark gray to black to dark green, homogeneous, locally organic rich clay. Colors vary through 2-3cm sections. Gradual lower contact. Lower contact established by the appearance of homogeneous gray clay.	85 %

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID  
AGR-01-041

North 5461048.947 Start Date 3/2/2001

East 366850.176 End Date 3/6/2001

Elevation 239.41

Proposed Depth 180

Actual Depth 180

Number of Boxes 46

From	To	Length	Lithological Code	Description	% Recovery
33.5 m	45.5 m	11.4 m	707	GRAY CLAY - Light to medium navy gray, homogeneous pasty clay. Inner texture is speckled dark gray on white. Looks very similar to A ore but more pasty in texture. Lower sharp contact established by the appearance of black organic peat/clay.	95 %
45.5 m	59.0 m	12.2 m	706	ORGANIC PEAT / CLAY - Pitch black, homogeneous, organic peat/clay with local 0.5m sections of silty/sandy beds lighter in color. Very soft locally. Lower contact established by the appearance of gray clay. Gradual contact over 1 m.	90 %
59.0 m	69.5 m	9.5 m	707	GRAY CLAY - Light to medium navy gray, homogeneous pasty clay. Gradual lower contact established by the appearance of dark gray to black organic clay. Some speckled black on white texture for interior clay.	90 %
69.5 m	78.5 m	6.8 m	705	BLACK CLAY - Dark gray to black, soft, locally sandy organic clay. Lower contact established by the appearance of brownish gray sandy residuum.	75 %

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

**Drill Hole ID**  
**AGR-01-041**

**North** 5461048.947 **Start Date** 3/2/2001

**East** 366850.176 **End Date** 3/6/2001

**Elevation** 239.41

**Proposed Depth** 180

**Actual Depth** 180

**Number of Boxes** 46

From	To	Length	Lithological Code	Description	% Recovery
78.5 m	125.0 m	37.2 m	720	SANDY RESIDUUM - First 2m are medium brown coarse sandy silica sand which grades gradually into a mixed brown/navy gray, fine grained, locally clay rich, residuum. Very consistent throughout. Recovery problems: 99.50-101.00 = 0.4m 102.50-104.00 = 0.8m 108.50-110.00 = 0.5m 111.50-114.50 = 0.4m From 119.00m to 125.00m 50% rocky rubble but remains gray throughout. Recovery remain good throughout. Lower contact established by the appearance of brown mud/rock.	80 %
125.0 m	169.5 m	37.8 m	713	WEATHERED CARBONATITE/SPROLITE - Dark rusty brown to orange brown to tan brown in mixed intervals of 5-8m. From 125.00m to 128.00m there is a transition zone of tan cemented ore? (Rock), gray sand and tan mud. From there on the gray material disappears. The tan material really starts at about 145m and seems to be weathered rauhaugite. Prior to this all the rubble is heavily iron stained. The overall material consist of 60-65% coarse sandy mud of iron stained rock. Material gets darker (dark brown), sharp contact (over 20cm) @ 169.50m. Lower contact established by the appearance of rauhaugite rock.	85 %
169.5 m	180.0 m	7.9 m	710	RAUHAUGITE - Medium brown, very blocky, weathered rauhaugite. Locally brecciated. Local 10cm "veins of saprolite." Numerous cavities and hairline fractures. All sections is heavily iron stained. No visible structural features. 180.0m = EOH.	75 %

Friday, June 08, 2001

Page 4 of 4

PL M 1.

# Agrium

Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

Drill Hole ID  
AGR-01-042

North 5461050.193 Start Date 3/6/2001

East 366790.61 End Date 3/8/2001

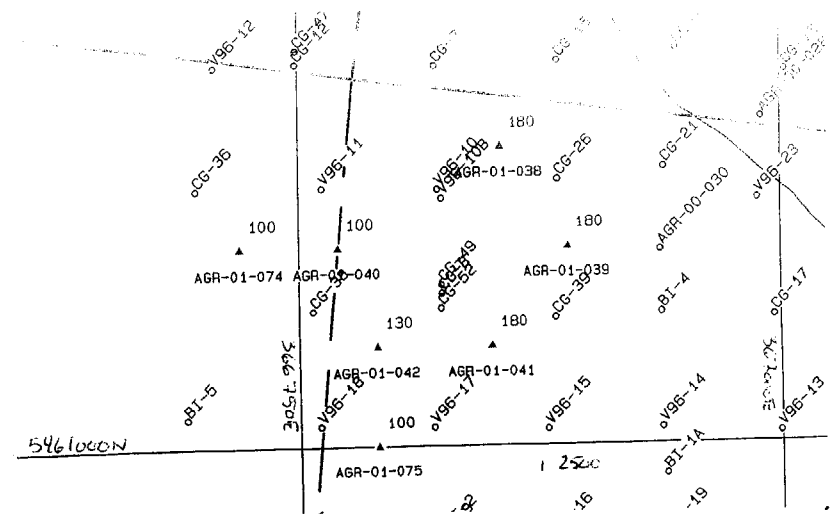
Elevation 239.31

Proposed Depth 130

Actual Depth 141.5

Number of Boxes 37

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 413074 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite





# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

**Drill Hole ID** North 5461050.193 Start Date 3/6/2001  
**AGR-01-042** East 366790.61 End Date 3/8/2001  
Elevation 239.31  
Proposed Depth 130  
Actual Depth 141.5  
Number of Boxes 37

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	0.5 m	714	VARVED CLAY - Medium brown, semi-layered, thick brown clay. Lower contact established by the appearance of gray gumbo clay.	10 %
5.0 m	18.5 m	4.0 m	715	GUMBO CLAY - Medium gray, homogeneous, soft clay. No recovery between 5.0m-11.0m; 12.5m-14.0m; 15.5m-17.0m (20%). Lower contact established by the appearance of pebbles and boulders from the next unit.	30 %
18.5 m	36.5 m	10.8 m	717	BOULDER/BASAL TILL - Light to medium gray silty clay/fine silt matrix containing up to 15 % pebbles and boulders. Pebbles range from 2mm to 6cm, boulders range from 6cm-80cm. Composition varies widely but granodiorite and fine grained mafic composition dominate. Lower contact established by the disappearance of these pebbles and boulders.	60 %
36.5 m	41.0 m	3.2 m	714	VARVED CLAY - Multicolored clay (grayish green; beige; light brown) with no inclusions. Section of clinocllore at 38m-39m. Gradual lower contact established by the appearance of homogeneous sandy gray clay.	70 %
41.0 m	53.0 m	10.2 m	707	GRAY CLAY - Navy gray, sandy clay with speckled dark green/gray on white texture on fresh interior of core. Very homogeneous and looks very much like Stage 0 A ore. Gradual lower contact established by the appearance of brown residuum.	80 %

Friday, June 08, 2001

Page 2 of 4

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-042

North 5461050.193 Start Date 3/6/2001

East 366790.61 End Date 3/8/2001

Elevation 239.31

Proposed Depth 130

Actual Depth 141.5

Number of Boxes 37

From	To	Length	Lithological Code	Description	% Recovery
53.0 m	89.8 m	29.4 m	720	GREY RESIDUUM - Navy gray to tan brown, fine grained (floury texture), homogeneous sandy residuum the color texture is interwoven tan/tan. Locally some clay. Very consistent unit. About 10% green flakes (mica?) throughout. Gradual lower contact established by the appearance of brown residuum.	80 %
89.8 m	95.0 m	2.9 m	720	BROWN RESIDUUM - Tan brown to orange brown, sandy and locally rocky, coarse grained residuum. Very little recovery between 92.0 and 95.0m (0.4m). All rocky chunks are heavily iron stained. Sharp lower contact established by the appearance of gray clay.	55 %
95.0 m	98.8 m	3.4 m	708	GRAY CLAY - Navy gray clay with green on white speckled interior texture. Lower contact established by the appearance of brown residuum.	90 %
98.8 m	117.5 m	16.9 m	720	BROWN RESIDUUM - Medium brown to orange brown to tan brown, coarse grained residuum. Locally tan colored like weathered rauhaugite. Locally very dark brown with weathered magnetite xtals. Locally weathered chunks (3-4cm) of unweathered rauhaugite. Lower contact established by the appearance of gray weathered pyroxenite.	90 %
117.5 m	120.5 m	2.7 m	713	WEATHERED PYROXENITE - Dark grayish green to speckled white strongly weathered pyroxenite. Local small 2-5cm sections of brown residuum. Lower contact established by the appearance of brown residuum.	90 %

Friday, June 08, 2001

Page 3 of 4

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project Winter 2001*

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-042**

*North* 5461050.193 *Start Date* 3/6/2001

*East* 366790.61 *End Date* 3/8/2001

*Elevation* 239.31

*Proposed Depth* 130

*Actual Depth* 141.5

*Number of Boxes* 37

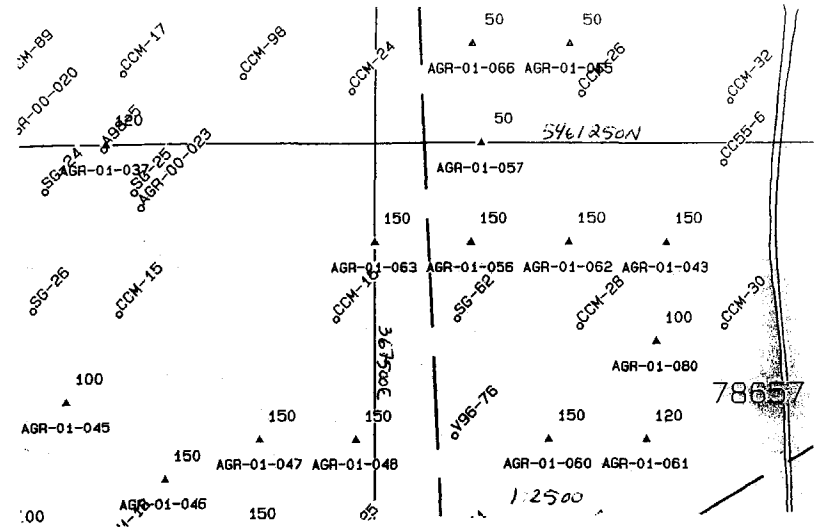
From	To	Length	Lithological Code	Description	% Recovery
120.5 m	125.0 m	4.1 m	720	BROWN RESIDUUM - Medium to reddish brown rocky residuum with local intervals of gray sandy material (probably weathered pyroxenite). Lower contact established by the appearance of green weathered pyroxenite.	90 %
125.0 m	141.5 m	15.7 m	713	WEATHERED PYROXENITE - Dark green to dark gray, strongly weathered pyroxenite. Very homogeneous section. Local large flakes of mica (dark green)/chlorite/pyroxene. Local stringers of white sand? 141.50m = EOH.	95 %

*PLM*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**  
 Project Winter 2001

**Drill Hole ID** North 5461201.4 Start Date 4/21/2001  
**AGR-01-043** East 367651.3 End Date 4/23/2001  
 Elevation 252.9  
 Proposed Depth 150  
 Actual Depth 101  
 Number of Boxes 19

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78657 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-043

North 5461201.4

Start Date 4/21/2001

East 367651.3

End Date 4/23/2001

Elevation 252.9

Proposed Depth 150

Actual Depth 101

Number of Boxes 19

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	30.5 m	30.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 30cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	40 %
30.5 m	80.0 m	49.5 m	720	BROWN RESIDUUM - Gray brown to tan brown to medium brown, sandy / muddy residuum. Locally chunky (rocky). Lower contact established by the appearance of weathered sovite.	75 %
80.0 m	95.0 m	15.0 m	713	WEATHERED SOVITE - Greenish brown, coarse grained, semi-layered sovite rock. Sub-vertical schistosity displayed by 1cm thick bands of coarse grained, black magnetite / pyroxene xtals. Lower contact established by the appearance of fresh sovite rock. Very blocky section.	50 %
95.0 m	101.0 m	6.0 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% coarse grained, black magnetite xtals in 1cm bands. No visible weathering in this section. 101.00m = EOH.	100 %

# Agrium

Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

Drill Hole ID  
AGR-01-044

North 5461349.5

Start Date 4/18/2001

East 367295

End Date 4/19/2001

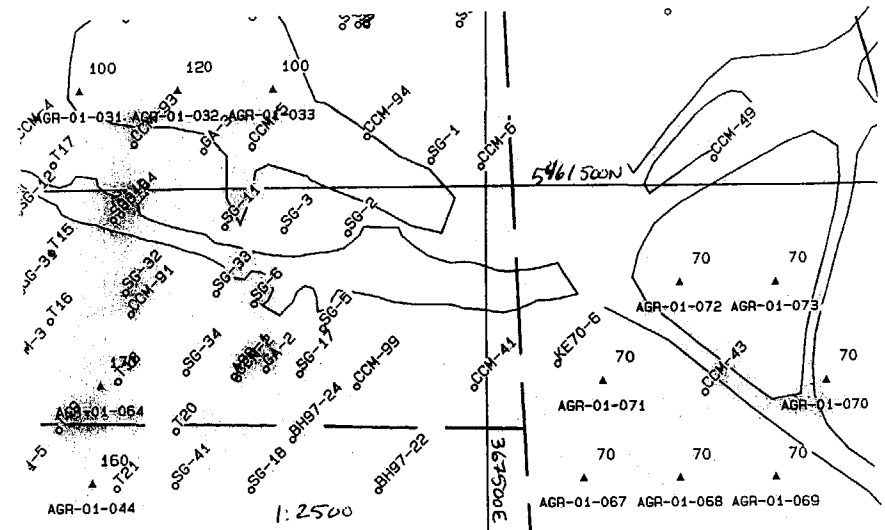
Elevation 226.7

Proposed Depth 100

Actual Depth 113

Number of Boxes 24

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 78658 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 2

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-044

North 5461349.5

Start Date 4/18/2001

East 367295

End Date 4/19/2001

Elevation 226.7

Proposed Depth 100

Actual Depth 113

Number of Boxes 24

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	80.0 m	80.0 m	706	CRETACEOUS WASTE - Mixture of 60% black organic rich peat, 30% medium to coarse grained silica sand ranging from white to beige and 10% whitish gray clay. Interbedded sections of 1-5m. Most of the peat displays wood chips and is silaceous to some extent. Very gradual lower contact established by a weight change and slightly grayer color.	85 %
80.0 m	108.5 m	28.5 m	720	GRAY RESIDUUM - Medium to navy gray, fine sandy, homogeneous residuum. Lower contact established by the appearance of gray rock.	85 %
108.5 m	113.0 m	4.5 m	713	GRAY ROCK - Medium gray, very blocky rock. Brecciated or conglomeratif texture. Visible apatite grains. Hole stopped due to technical difficulties. 113.0m = EOH.	90 %

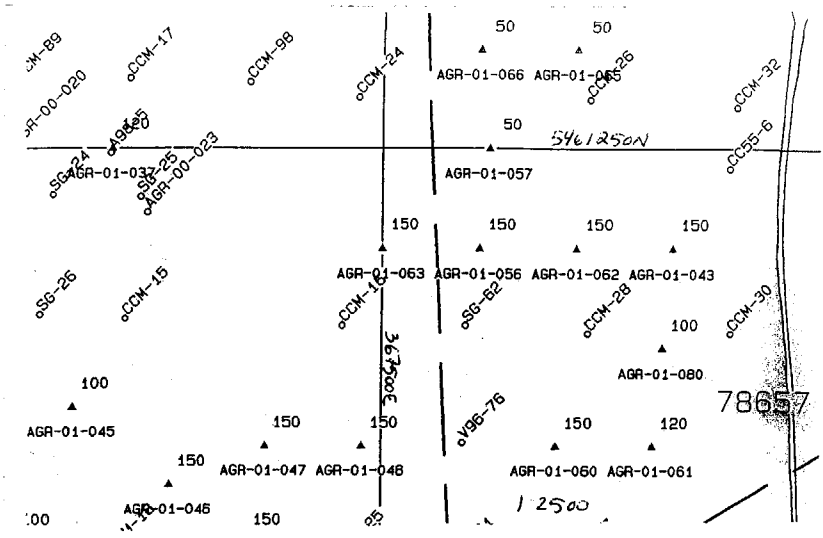
*PK My 1.*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

**Drill Hole ID** North 5461122.2 Start Date 4/18/2001  
**AGR-01-045** East 367340.9 End Date 4/18/2001  
 Elevation 237.2  
 Proposed Depth 100  
 Actual Depth 24.5  
 Number of Boxes 6

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78658 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite





**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

*Project* Winter 2001

*Lithological Descriptions*

**Drill Hole ID**      *North* 5461122.2      *Start Date* 4/18/2001  
**AGR-01-045**      *East* 367340.9      *End Date* 4/18/2001  
*Elevation* 237.2  
*Proposed Depth* 100  
*Actual Depth* 24.5  
*Number of Boxes* 6

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	6.5 m	6.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 40cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of weathered sovite.	60 %
6.5 m	24.5 m	18.0 m	713	WEATHERED SOVITE - Light gray, coarse grained (magnetite / chlorite / mica), massive sovite rock. Weak sub-vertical schistosity. Medium weathering which seems to decrease with depth. Most fractures are heavily iron stained. 24.50m = EOH.	80 %

# Agrium

Kapuskasing Phosphate Operation  
Exploration Drilling

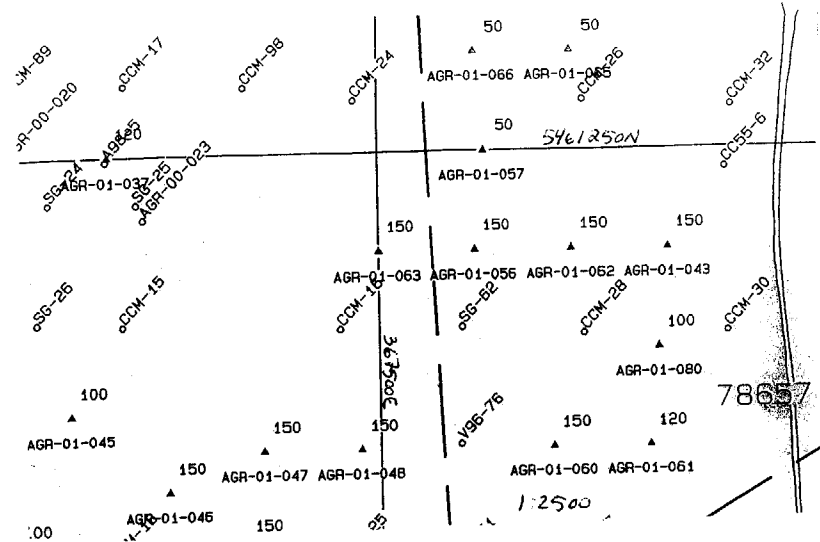
Project Winter 2001

Drill Hole ID  
AGR-01-046

North 5461077.3  
East 367392.8  
Elevation 247.1  
Proposed Depth 150  
Actual Depth 132.5  
Number of Boxes 28

Start Date 3/20/2001  
End Date 3/27/2001

Logged By P. Marengi  
Date Logged 5/30/2001  
Claim number 78658  
Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-046

North 5461077.3

Start Date 3/20/2001

East 367392.8

End Date 3/27/2001

Elevation 247.1

Proposed Depth 150

Actual Depth 132.5

Number of Boxes 28

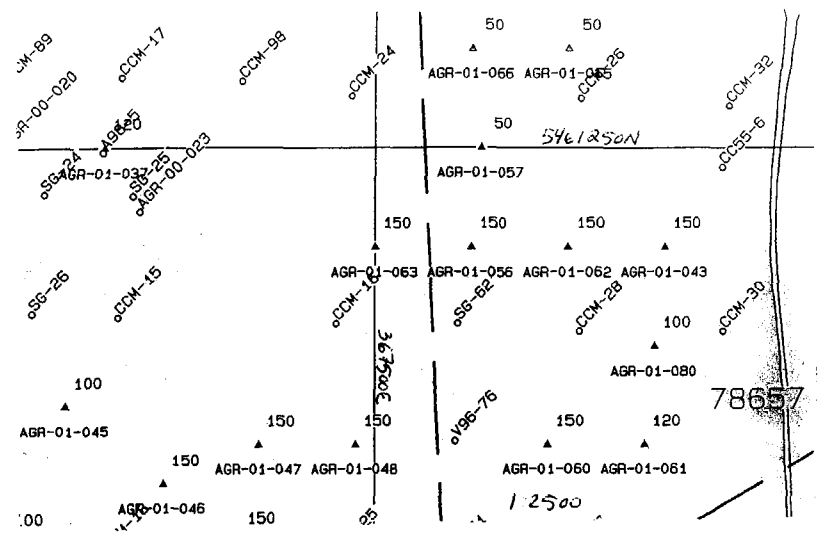
From	To	Length	Lithological Code	Description	% Recovery
0.0 m	12.5 m	2.0 m	714	VARVED/GUMBO CLAY - Medium brown to medium gray, soft, pasty semi layered, homogeneous clay. No recovery from 0-5m. Lower contact established by the appearance of pebbles and boulders.	25 %
12.5 m	30.5 m	5.5 m	717	BOULDER/BASAL TILL - Light gray silty, muddy matrix containing up to 15% pebbles and boulders composition ranges from granodiorite to mafic unit. Sizes range from 2mm to 5cm for pebbles and 5cm-20cm for boulders. Most pebbles and boulders are well rounded. Lower contact established by the appearance of sandy mud (brown).	30 %
30.5 m	75.5 m	36.0 m	720	BROWN MUDDY RESIDUUM - Medium to tan brown, muddy, locally rocky weathered carbonatite (residuuum). Local 1-2cm rocky (tan brown) sections which look like cemented residuum. Local very sandy sections. Lower contact established (estimated) by a significant increase in rocky material.	80 %
75.5 m	132.5 m	48.5 m	713	ROCKY WEATHERED CARBONATITE - Dark brown to medium brown to tan brown. 70% rocky rubble and 30 % mud. Rock is heavily iron for the most part but fresh 0.5m sections are intersected locally from 101 to 132.5m. These sections vary in color from light gray (speckled black) to tan to brown. Most contain numerous cavities. Schistosity where visible is about 50° to the core axis. Local good sections of sandy mud. Water return was lost in this hole around 100m. It was never brought back. Drilling mud was continued to be used but the diamond bit broke in the hole @ 132.5m to continue the hole meant redrilling through the broken bit and this was considered to risky. The hole was terminated at 132.5m. EOH.	85 %

*PLM!*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**  
 Project Winter 2001

**Drill Hole ID** North 5461099.4 Start Date 3/27/2001  
**AGR-01-047** East 367440.2 End Date 3/29/2001  
 Elevation 247.9  
 Proposed Depth 150  
 Actual Depth 125  
 Number of Boxes 30

Logged By P. Marenghi Date Logged 5/30/2001  
 Claim number 78658 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-047

North 5461099.4

Start Date 3/27/2001

East 367440.2

End Date 3/29/2001

Elevation 247.9

Proposed Depth 150

Actual Depth 125

Number of Boxes 30

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	9.5 m	9.5 m	714	VARVED CLAY - Brown, homogeneous, sirm clay. The first 20 cm is black organic matter . From 7.0 - 9.5m; some granitic boulders. No recovery from 5.0-6.5m. Lower contact established by the epearance of gray gumbo clay.	17 %
9.5 m	14.0 m	4.5 m	715	GUMBO CLAY - Light gray, homogenous, soft clay. No inclusions in this section. Lower contact established by the appearance of pebbles and boulders.	100 %
14.0 m	32.0 m	18.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 6cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	19 %
32.0 m	48.0 m	16.0 m	720	BROWN ROCKY RESIDUUM - Dark rusty brown to tan brown to medium brown, rocky / coarse sandy residuum. Locally 10-20cm sections of chlorite rich green to dark green. All rock fragments are heavily iron stained. Lower contact established by the appearance of gray residuum.	80 %
48.0 m	66.5 m	18.5 m	702	GRAY SANDY RESIDUUM - Medium to dark gray, fine sandy, chlorite rich, homogeneous residuum. Local 10cm dark brown sections. Local black sections (very dark green). The last 3m of this section grades into brown residuum (lower contact established).	85 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-047**

*North* 5461099.4

*Start Date* 3/27/2001

*East* 367440.2

*End Date* 3/29/2001

*Elevation* 247.9

*Proposed Depth* 150

*Actual Depth* 125

*Number of Boxes* 30

From	To	Length	Lithological Code	Description	% Recovery
66.5 m	111.5 m	45.0 m	720	BROWN MUDDY RESIDUUM - Chocolate brown to orange brown, muddy and locally rocky, homogeneous residuum. From 102.50 to 111.50m; the color becomes darker in brown and could represent a saprolite zone. Lower contact established by the appearance of gray sovite rock.	85 %
111.5 m	125.0 m	13.5 m	711	SOVITE -Light gray, massive sovite rock. No visible weathering after 114.50m. Sub - vertical schistosity with 5cm bands of magnetite / chlorite / mica phenocrysts. 125.00m = EOH.	95 %

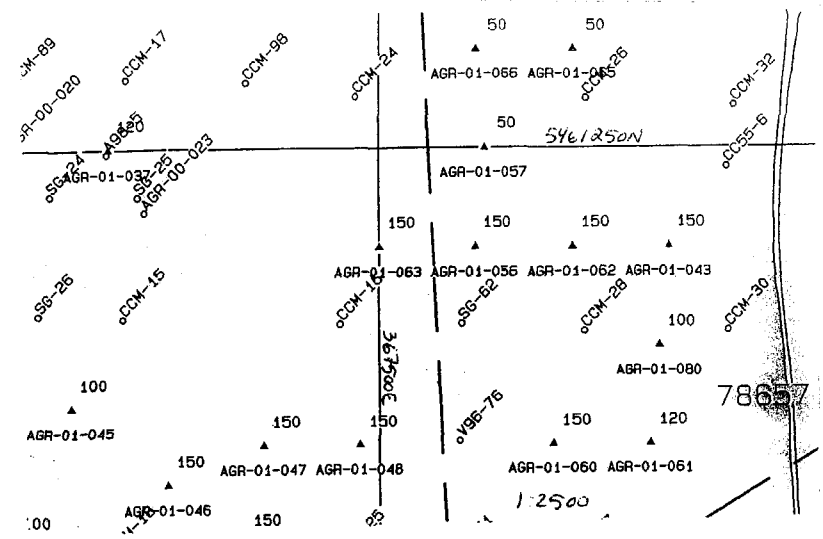
*PLM*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

**Drill Hole ID**      North 5461098.6      Start Date 3/30/2001  
**AGR-01-048**      East 367490.9      End Date 4/1/2001  
Elevation 248.5  
Proposed Depth 150  
Actual Depth 153.5  
Number of Boxes 37

Logged By P. Marengi      Date Logged 5/30/2001  
Claim number 78658      Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-048

North 5461098.6

Start Date 3/30/2001

East 367490.9

End Date 4/1/2001

Elevation 248.5

Proposed Depth 150

Actual Depth 153.5

Number of Boxes 37

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, firm clay. The first 20 cm is black organic matter. Lower contact established by the appearance of gray gumbo clay.	28 %
5.0 m	18.5 m	13.5 m	715	GUMBO CLAY - Light gray, homogenous, soft clay. Local boulders at the top of this unit. No recovery from 6.50-9.50m; 11.00-14.00m; 17.00-18.50m. Lower contact established by the appearance of pebbles and boulders.	34 %
18.5 m	32.0 m	13.5 m	717	BOULDER / BASAL TILL - Very little material was recovered. Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 60cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of greenish gray residuum.	22 %
32.0 m	89.0 m	57.0 m	720	GRAY SANDY RESIDUUM - Medium to dark gray, fine sand / muddy, chlorite rich, homogeneous residuum. Local 0.5 - 1.0m brown sections. Local black sections (very dark green). The last 3m of this section grades into brown residuum (lower contact established).	85 %
89.0 m	143.8 m	54.8 m	720	BROWN RESIDUUM - Dark brown with intermittent intervals (2m) of muddy gray, rocky / muddy residuum. The darker brown grades into a lighter tan brown around 116.00m. Local 3-5m orange brown sections. Local black stained (manganese) rocky chunks. Lower contact established by the appearance of sovite.	80 %

Friday, June 08, 2001

Page 2 of 3



# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project Winter 2001*

*Lithological Descriptions*

**Drill Hole ID**  
**AGR-01-048**

**North** 5461098.6

**Start Date** 3/30/2001

**East** 367490.9

**End Date** 4/1/2001

**Elevation** 248.5

**Proposed Depth** 150

**Actual Depth** 153.5

**Number of Boxes** 37

From	To	Length	Lithological Code	Description	% Recovery
143.8 m	153.5 m	9.8 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% coarse grained (20mm) black magnetite xtals. . No visible weathering after 114.50m. Sub - vertical schistosity with 5cm bands of magnetite / chlorite / mica phenocrysts.153.50m = EOH.	100 %

*PK 1.*

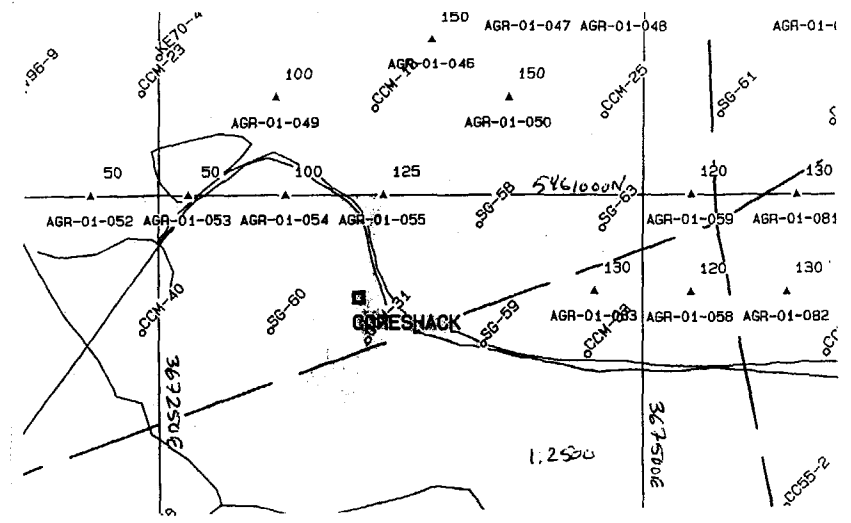
**Agrium**  
Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

Drill Hole ID  
AGR-01-049

North 5461050.429 Start Date 3/19/2001  
East 367310.647 End Date 3/20/2001  
Elevation 244.74  
Proposed Depth 100  
Actual Depth 21.5  
Number of Boxes 6

Logged By P. Marenghi Date Logged 5/30/2001  
Claim number 78658 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-049

North 5461050.429 Start Date 3/19/2001

East 367310.647 End Date 3/20/2001

Elevation 244.74

Proposed Depth 100

Actual Depth 21.5

Number of Boxes 6

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	4.7 m	4.2 m	714	VARVED CLAY - Medium to light brown, semi layered, firm clay. No gumbo clay following this unit. Lower contact established by the appearance of boulders and pebbles.	90 %
4.7 m	14.7 m	9.0 m	717	BOULDER/BASAL TILL - Light greenish gray, silty/sandy muddy matrix containing up to 15 % pebbles and boulders ranging from 5mm to 1m in diameter. Composition varies but granodiorite and mafic units are predominant. Most boulders are well rounded. Sharp lower contact established by the appearance of fresh massive sovite.	90 %
14.7 m	21.5 m	6.8 m	711	SOVITE - Grayish white, massive, homogeneous carbonatite. 10-15% 2mm-5mm chlorite/mica/po xtals peppered in a calcic matrix. No visible weathering throughout. 21.50m = EOH.	100 %

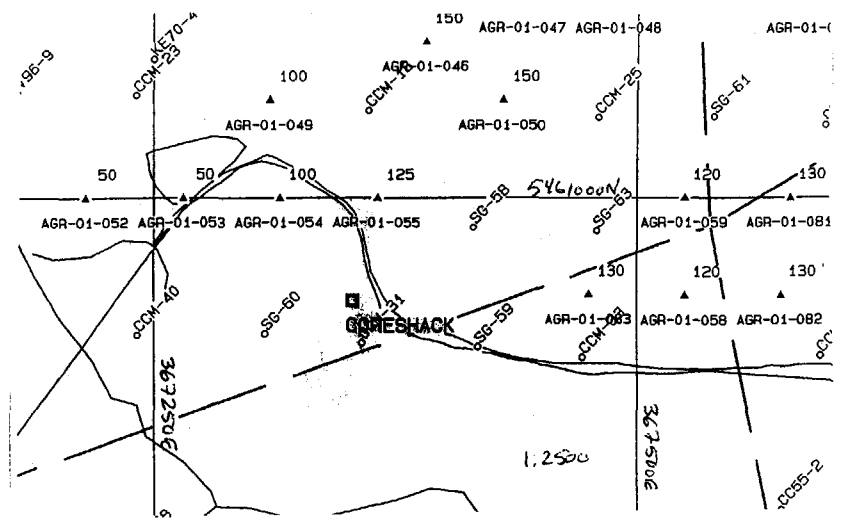
*PL M 1.*

**Agrium**  
 Kapuskasing Phosphate Operation  
 Exploration Drilling

Project Winter 2001

**Drill Hole ID** North 5461050 Start Date 4/2/2001  
**AGR-01-050** East 367430 End Date 4/5/2001  
 Elevation 247.1  
 Proposed Depth 150  
 Actual Depth 156.5  
 Number of Boxes 32

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78658 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-050

North 5461050

Start Date 4/2/2001

East 367430

End Date 4/5/2001

Elevation 247.1

Proposed Depth 150

Actual Depth 156.5

Number of Boxes 32

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	2.0 m	2.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of gray gumbo clay.	100 %
2.0 m	20.0 m	18.0 m	715	GUMBO CLAY - Light gray, homogenous, soft clay. Local boulders at the top of this unit. Lower contact established by the appearance of pebbles and boulders.	100 %
20.0 m	35.0 m	15.0 m	717	BOULDER / BASAL TILL - Very little material was recovered. Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown mud.	24 %
35.0 m	144.5 m	109.5 m	720	BROWN RESIDUUM - Dark brown , rocky / sandy residuum. Rocky chunks are heavily iron stained. Local 10m sections of sandy, tan brown residuum. No recovery from 96.50-99.50m. Local orange brown, very muddy 3-5m sections of residuum. Local red hematite staining. Around 135m, the residuum becomes coarse grained and rusty brown. Some local 1m sections of iron stained rock. Lower contact established by the appearance of brown / black mud.	80 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-050

North 5461050

Start Date 4/2/2001

East 367430

End Date 4/5/2001

Elevation 247.1

Proposed Depth 150

Actual Depth 156.5

Number of Boxes 32

From	To	Length	Lithological Code	Description	% Recovery
144.5 m	152.8 m	8.3 m	713	SAPROLITE - Dark brown to dark green to black, coarse grained, muddy, weathered sovite. Very homogeneous and local black coarse grained magnetite xtals. Lower contact established by the appearance of sovite rock.	90 %
152.8 m	156.5 m	3.8 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% coarse grained (20mm) black magnetite xtals. . No visible weathering after the first 20cm. Sub - vertical schistosity with 2-3cm bands of magnetite / chlorite / mica phenocrysts. 156.50m = EOH.	100 %

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

*PL M*

Drill Hole ID  
AGR-01-051

North 5461461.8

Start Date 2/5/2001

East 366881.5

End Date 2/6/2001

Elevation 238.4

Proposed Depth 100

Actual Depth 63.5

Number of Boxes 13

Logged By P. Marengi

Date Logged 2/8/2001

Claim number 413076

Township Cargill

Azim 0

Dip -90

Drilling Contractor Norex Drilling

Purpose Definition drilling.

### Results

Why hole terminated Normal Termination

Core Size HQ-3

Casing None

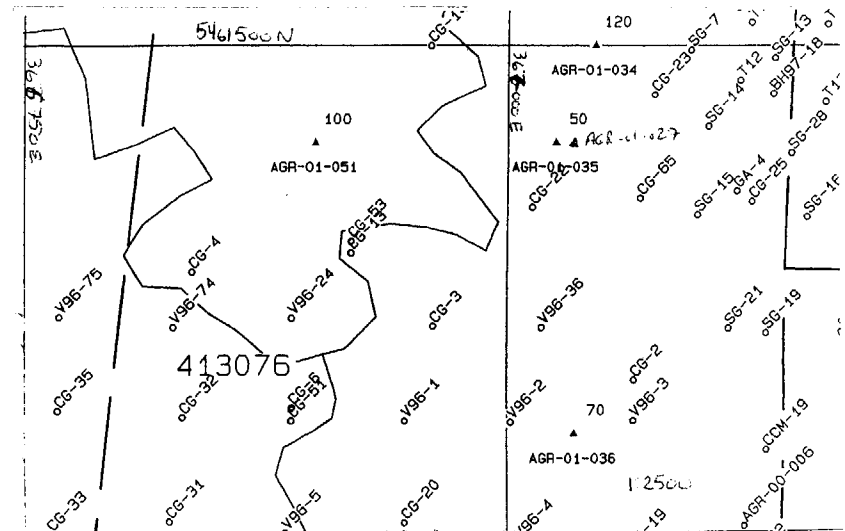
Hole Cemented No

Number of Assays

Number of ICP 0

Rejects/Pulps saved Pulps

Core Stored Agrium Minesite



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-051

North 5461461.8 Start Date 2/5/2001

East 366881.5 End Date 2/6/2001

Elevation 238.4

Proposed Depth 100

Actual Depth 63.5

Number of Boxes 13

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	11.5 m	1.5 m	715	GUMBO CLAY - Dark gray/brown, homogeneous, pasty gumbo clay. Lower section established by the appearance of boulders and pebbles.	13 %
11.5 m	15.5 m	3.0 m	717	BOULDER / BASAL TILL - Grey fine grained silty mud containing up to 10% pebbles and boulders of mainly granitic gneiss and fine/coarse grained green mafics. Some fragments/boulders reach up to 20cm but most are 0-5cm and smaller. Lower contact established by the appearance of green weathered granitic.	75 %
15.5 m	63.5 m	43.2 m	709	WEATHERED GRANODIORITE/GRANATIC GNEISS - Very badly weathered (crumbly very coarse grained sand texture), semi-consolidated, green/pink/brown coarse grained granodiorite/granitic gneiss. Schistosity/foliation sub-horizontal to core axis. Only 15% of total section is semi-consolidated. Visible minerals in sand include microcline (pink), epidote (lime green), iron staining (brown), quartz (white), amphibole/chlorite (green), mica (flaky brown) some specks of pyrite. Rock does not seem to get more consolidated with depth. Spot check samples were taken throughout. 43.20m = EOH.	90 %



**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PH M.I.*

**Drill Hole ID  
AGR-01-052**

North 5460998.929 Start Date 3/19/2001

East 367214.277 End Date 3/19/2001

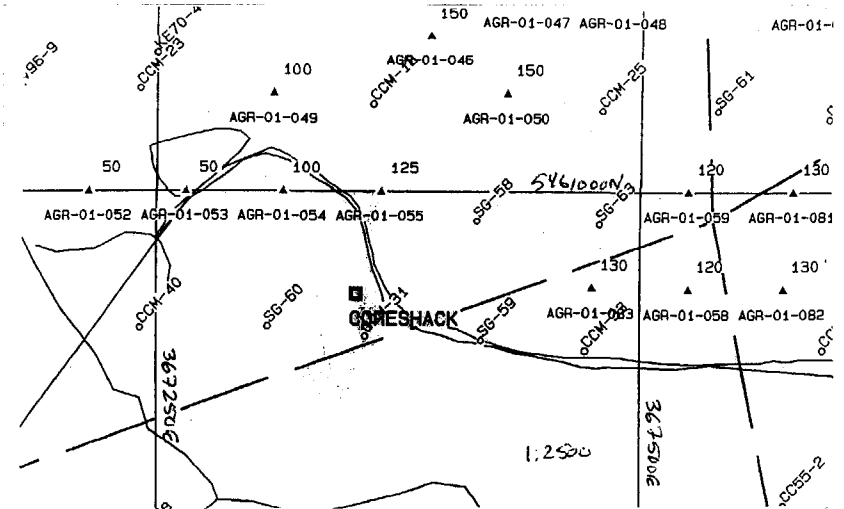
Elevation 241.32

Proposed Depth 50

Actual Depth 50

Number of Boxes 14

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 78658 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 2

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-052

North 5460998.929 Start Date 3/19/2001

East 367214.277 End Date 3/19/2001

Elevation 241.32

Proposed Depth 50

Actual Depth 50

Number of Boxes 14

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	2.0 m	0.4 m	714	VARVED CLAY - Very little recovery and some boulders but medium brown colored matrix. Could also be boulder till. Lower contact established by the appearance of greyish green boulder till.	20 %
2.0 m	12.5 m	9.5 m	717	BOULDER / BASAL TILL - Greyish green silty/muddy clay matrix containing up to 15% pebbles and boulders. Pebbles vary from 5mm to 6cm and boulders range from 6cm to 60cm. Composition varies but granodiorite and mafic units are dominant. Most boulders are well rounded. Lower contact established by the appearance of rocky dark green unit.	90 %
12.5 m	26.0 m	12.8 m	720	SAPROLITE - Dark green sandy and rocky (fragmental texture) mica rich (or chlorite rich) unit, inter mixed in 2-3m sections with fragmental brown to very dark brown, locally sandy cemented residuum/carbonatite. Very good ground and recovery. No visible structural features. Overall texture like cemented ore.	95 %
26.0 m	50.0 m	22.8 m	711	WEATHERED SOVITE - Green to brownish green, strongly weathered locally to a brown sand, good visible schistosity locally where bands (1-2cm) of iron stained magnetite/chlorite trend at 45° to the core axis. This could be the same unit as above but there was no visible structure in the above unit. At 26.75m the brown color disappears and the rock (sovite) although weathered to various degrees, becomes more and more fresh with depth. Good schistosity developed sub-parallel to the core axis. Magnetite/chlorite/po xtals become more developed with depth and range from 10-20mm in diameter. Local veins (1cm) of pink glassy mineral (discoloration?). This sovite is not whitish grey as the sovite intersected in the surrounding holes. 50.0m = EOH.	95 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

**Project** Winter 2001

*PH 141*

**Drill Hole ID  
AGR-01-053**

**North** 5460999.614

**Start Date** 3/17/2001

**East** 367264.182

**End Date** 3/18/2001

**Elevation** 244.55

**Proposed Depth** 50

**Actual Depth** 56

**Number of Boxes** 16

**Logged By** P. Marengi

**Date Logged** 5/30/2001

**Claim number** 78658

**Township** Cargill

**Azim** 0

**Dip** -90

**Drilling Contractor** Norex Drilling

**Purpose**

**Results**

**Why hole terminated** Normal termination

**Core Size** HQ

**Casing** None

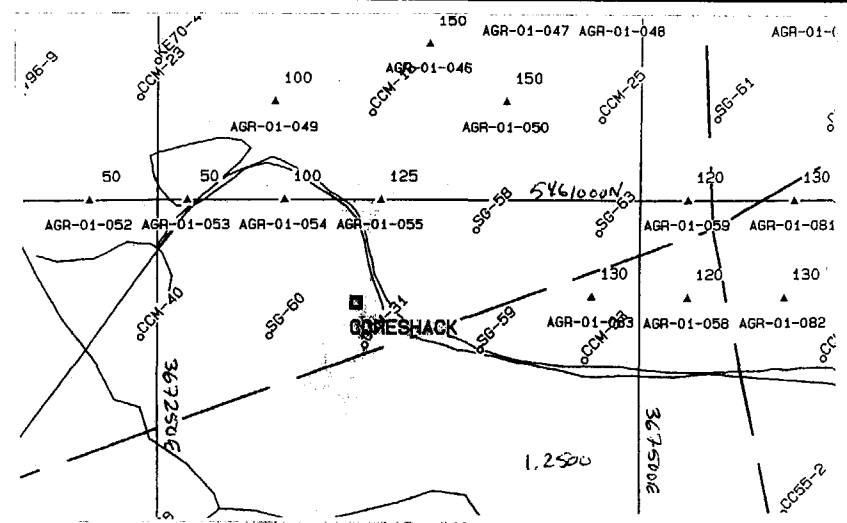
**Hole Cemented** No

**Number of Assays**

**Number of ICP** 0

**Rejects/Pulps saved** Yes

**Core Stored** Agrium Minesite



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

**Drill Hole ID**  
AGR-01-053

**North** 5460999.614 **Start Date** 3/17/2001

**East** 367264.182 **End Date** 3/18/2001

**Elevation** 244.55

**Proposed Depth** 50

**Actual Depth** 56

**Number of Boxes** 16

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	6.5 m	6.5 m	714	VARVED CLAY - Medium brown, semi-layered, thick and pasty, clay. Very good recovery in this hole. No presence of gumbo clay in this area. Lower contact established by the appearance of pebbles and boulders from the next unit.	100 %
6.5 m	17.0 m	9.5 m	717	BOULDER / BASAL TILL - Light to medium gray/green silty/clay matrix containing up to 15% pebbles and boulders ranging from 5mm to 60cm. Composition varies but granodiorite and mafic units are dominant. Lower contact established by the appearance of brown weathered rock.	90 %
17.0 m	41.0 m	20.4 m	713	SAPROLITE - Dark rusty brown to medium brown to medium/dark green to pale green, crumbly/rocky/sandy, cemented (fragmental texture) weathered rock (carbonatite). Some sections are chlorite rich others are iron poor but overall mixing of different colors is consistent. Lower contact established by the appearance of sovite.	85 %
41.0 m	56.0 m	15.0 m	711	SOVITE - Whitish gray, massive, banded (schistosity sub-vertical to the core axis). Bands are 2-3cm wide and consist of 2-8mm (local 1cm) xtals of magnetite/black to green chlorite/po. No weathering throughout this section. EOH.	100 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PL M*

**Drill Hole ID  
AGR-01-054**

North 5461000.615

Start Date 3/16/2001

East 367314.261

End Date 3/17/2001

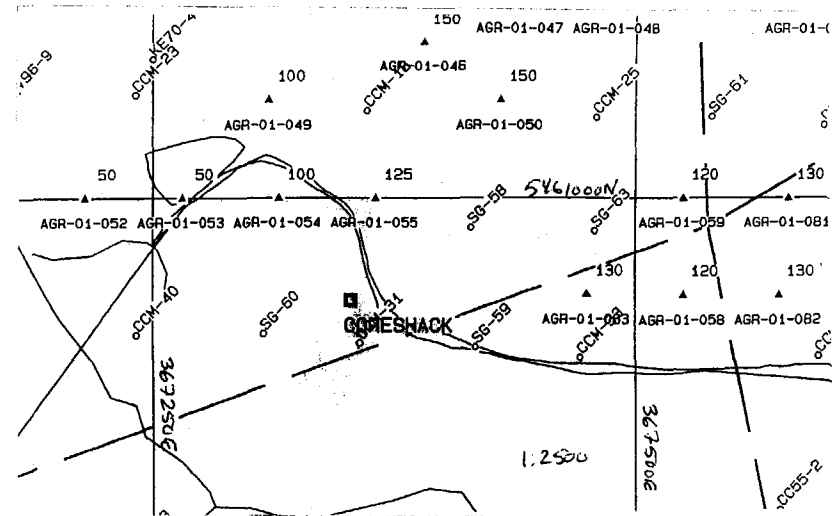
Elevation 245.7

Proposed Depth 100

Actual Depth 68

Number of Boxes 18

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 78658 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 3

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-054

North 5461000.615 Start Date 3/16/2001

East 367314.261 End Date 3/17/2001

Elevation 245.7

Proposed Depth 100

Actual Depth 68

Number of Boxes 18

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	1.1 m	714	VARVED CLAY - Medium brown, semi-layered, thick, hard clay. No recovery from 0-2m; 3.5-5.0m. Lower contact established by the appearance of gray gumbo clay.	22 %
5.0 m	12.0 m	3.4 m	715	GUMBO CLAY - Medium gray, soft, homogeneous, pasty clay. No recovery between 6.5m and 9.5m. Lower contact established by the appearance of the first pebbles and boulder of the next unit.	48 %
12.0 m	24.5 m	9.0 m	717	BOULDER / BASAL TILL - Light to medium gray silty/muddy/clay matrix containing up to 15% pebbles and boulders. Pebbles vary in size from 3mm to 5 cm and 5cm to 30cm. Composition varies from granodiorite to mafic units. Lower contact established by the appearance of rock.	72 %
24.5 m	27.5 m	0.0 m	711	SOVITE - Coarse grained (magnetite/pyroxene/chlorite) 1 cm carbonatite rock (white calcic matrix) Could be a boulder. Lower contact established by the appearance of brown weathered carbonatite.	0 %
27.5 m	44.0 m	14.0 m	720	WEATHERED CARBONATITE - Very dark chocolate brown to rusty brown rocky/sandy iron stained carbonatite rubble and residuum. Most pieces of iron stained rock look like sovite but hard to tell. Some of this material could be cemented residuum. Lower contact established by the appearance of fresh sovite.	85 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-054

North 5461000.615 Start Date 3/16/2001

East 367314.261 End Date 3/17/2001

Elevation 245.7

Proposed Depth 100

Actual Depth 68

Number of Boxes 18

From	To	Length	Lithological Code	Description	% Recovery
44.0 m	59.0 m	13.5 m	713	SAPROLITE - Mixture of 70% rusty brown sandy/rocky saprolite of residuum and 30% weathered, iron stained, grayish brown to gray, locally unweathered sovite. Sections of sovite range from 1-2m. Some schistosity visible but varies to 45 degrees to core axis to 0 degrees to core axis. Locally large black magnetite/chlorite/po xtals. Lower contact established by the appearance of fresh sovite.	90 %
59.0 m	68.0 m	8.6 m	711	SOVITE - Very blocky sovite rock. Sovite; white to light gray to light green calcic matrix (vfg) containing up to 10% xtals of black magnetite/green chlorite/mica and po. Schistosity sub-parallel to core axis and banding in 1-2cm wide mineral rich layers also aligned sub parallel. Most fractures are coated with some form of iron staining. 68.0m = EOH.	95 %

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

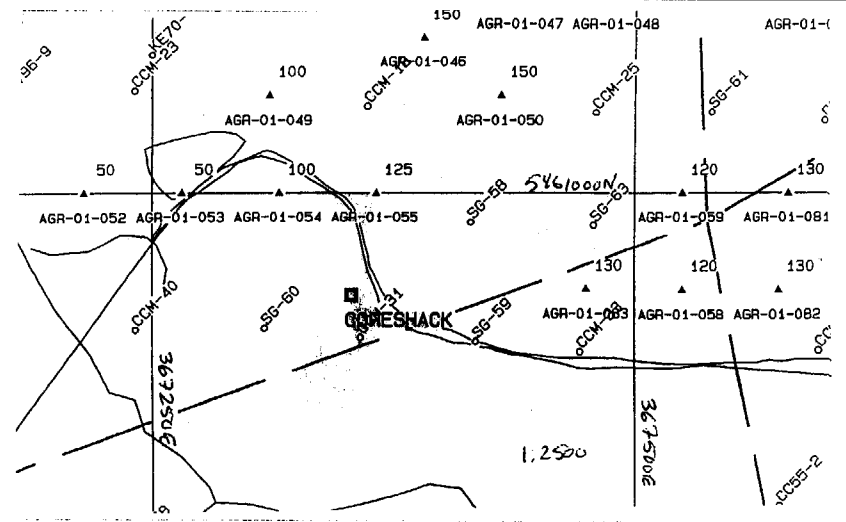
*PHM*

Project Winter 2001

**Drill Hole ID**  
**AGR-01-055**

North 5461001.192 Start Date 3/13/2001  
 East 367364.922 End Date 3/16/2001  
 Elevation 246.2  
 Proposed Depth 125  
 Actual Depth 138.5  
 Number of Boxes 33

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78658 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing None  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved  
 Core Stored Agrium Minesite





# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-055

North 5461001.192 Start Date 3/13/2001

East 367364.922 End Date 3/16/2001

Elevation 246.2

Proposed Depth 125

Actual Depth 138.5

Number of Boxes 33

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	1.2 m	714	VARVED CLAY - Medium brown, semi-layered, thick, hard brown clay. Lower contact established by the appearance of gray gumbo clay.	34 %
3.5 m	21.5 m	11.0 m	715	GUMBO CLAY - Soft, brownish gray, homogeneous, soft clay. Lower contact established by the appearance of boulders and pebbles of the next unit. No recovery form 11.0-14.0m.	61 %
21.5 m	38.0 m	4.4 m	717	BOULDER / BASAL TILL - Brownish gray silty matrix containing up to 15% pebbles and boulders. Pebbles range from 2mm to 5cm and boulders from 5cm to 60cm. Composition of pebbles and boulders varies but is mainly granodiorite and mafic units. Lower contact established by the appearance of brown residuum.	27 %
38.0 m	48.5 m	8.9 m	720	BROWN RESIDUUM - Tan brown to rusty brown to dark orange brown (color darkens with depth), sandy and rocky (increasing rockiness with depth) weathered carbonatite (residuum). Rocky chunks are heavily iron stained and contain visible magnetite/chlorite xtals. Lower contact established by the appearance of clinochlore.	85 %
48.5 m	56.2 m	6.9 m	704	CLINOCHLORE - Grayish green, almost metallic green, homogeneous, chlorite rich, pasty "clay". This section is about 90% clinochlore. Very small <mm shiny dark green flakes of chlorite abundant throughout. Lower contact established by the appearance of brown residuum.	85 %

Friday, June 08, 2001

Page 2 of 4

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-055

North 5461001.192 Start Date 3/13/2001

East 367364.922 End Date 3/16/2001

Elevation 246.2

Proposed Depth 125

Actual Depth 138.5

Number of Boxes 33

From	To	Length	Lithological Code	Description	% Recovery
56.2 m	71.0 m	12.6 m	720	BROWN RESIDUUM - Tan to medium brown, sandy, homogeneous residuum. Becomes rocky around 69.5m. 1m rocky granitic section from 66.5m to 67.5m. Lower contact established by the appearance of rocky cemented residuum.	85 %
71.0 m	81.5 m	9.5 m	720	CEMENTED RESIDUUM - Light gray, iron stained, fragmental, blocky cemented residuum. Approx. 10% 2mm-1cm magnetite xtals pretty well throughout. No visible banding/schistosity. Locally porous texture. Local sandy section from 74.0-77.0m. Lower contact established by the appearance of sandy brown residuum.	90 %
81.5 m	87.5 m	5.4 m	720	BROWN SANDY RESIDUUM - Medium to rusty brown, slightly rocky sandy residuum. Very homogeneous section. Some limonite colored sections. Lower contact established by the appearance of rocky material.	90 %
87.5 m	108.5 m	16.8 m	713	WEATHERED CARBONATITE - 80-85% brown (iron stained) weathered sovite/maybe cemented residuum. Very rocky and blocky section. Most chunks range 10-20cm. Lower contact established by the appearance of sandier material.	80 %
108.5 m	131.0 m	19.1 m	720	SANDY RESIDUUM - Tan to medium brown sandy (5% rocky rubble). Very sandy material and very homogeneous and consistent texture. Lower contact established by the appearance of white sovite rock.	85 %

Friday, June 08, 2001

Page 3 of 4

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

*Project* Winter 2001

*Lithological Descriptions*

**Drill Hole ID**  
**AGR-01-055**

*North* 5461001.192 *Start Date* 3/13/2001

*East* 367364.922 *End Date* 3/16/2001

*Elevation* 246.2

*Proposed Depth* 125

*Actual Depth* 138.5

*Number of Boxes* 33

From	To	Length	Lithological Code	Description	% Recovery
131.0 m	138.5 m	7.5 m	711	SOVITE - Light gray to white sovite. Speckled textures; black magnetite and brown po xtals (3mm to 1cm) on a whitish gray calcic matrix. No obvious schistosity pretty massive rock. No weathering after 132.00m. = EOH.	100 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

**Project** Winter 2001

*PHM*

**Drill Hole ID**  
AGR-01-056

**North** 5461204.2

**East** 367550.5

**Elevation** 248.8

**Proposed Depth** 50

**Actual Depth** 51.5

**Number of Boxes** 13

**Start Date** 4/24/2001

**End Date** 4/25/2001

**Logged By** P. Marengi

**Date Logged** 5/30/2001

**Claim number** 78657

**Township** Cargill

**Azim** 0

**Dip** -90

**Drilling Contractor** Norex Drilling

**Purpose**

**Results**

**Why hole terminated** Normal termination

**Core Size** HQ

**Casing** No

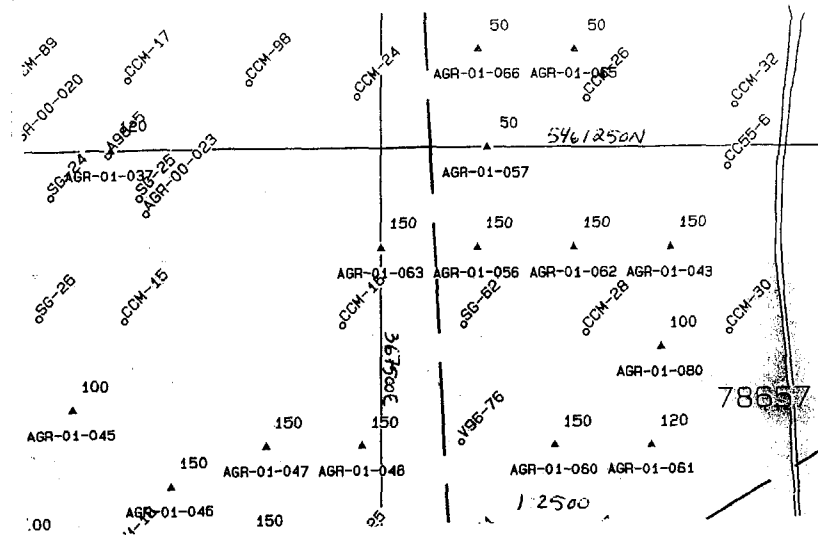
**Hole Cemented** No

**Number of Assays**

**Number of ICP** 0

**Rejects/Pulps saved** Yes

**Core Stored** Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-056

North 5461204.2

Start Date 4/24/2001

East 367550.5

End Date 4/25/2001

Elevation 248.8

Proposed Depth 50

Actual Depth 51.5

Number of Boxes 13

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	30 %
5.0 m	22.8 m	17.8 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 30cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	40 %
22.8 m	41.0 m	18.3 m	720	BROWN RESIDUUM - Dark brown to orange brown, rocky / muddy residuum. Lower contact established by the appearance of greenish mud.	60 %
41.0 m	45.5 m	4.5 m	713	GREEN MUD - Weathered pyroxenite??. Homogeneous, flakey green mud. Lower contact established by the appearance of rock.	70 %
45.5 m	51.5 m	6.0 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (20mm) black magnetite xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity. 51.50m = EOH.	100 %

Friday, June 08, 2001

Page 2 of 2

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

*PK / M /*

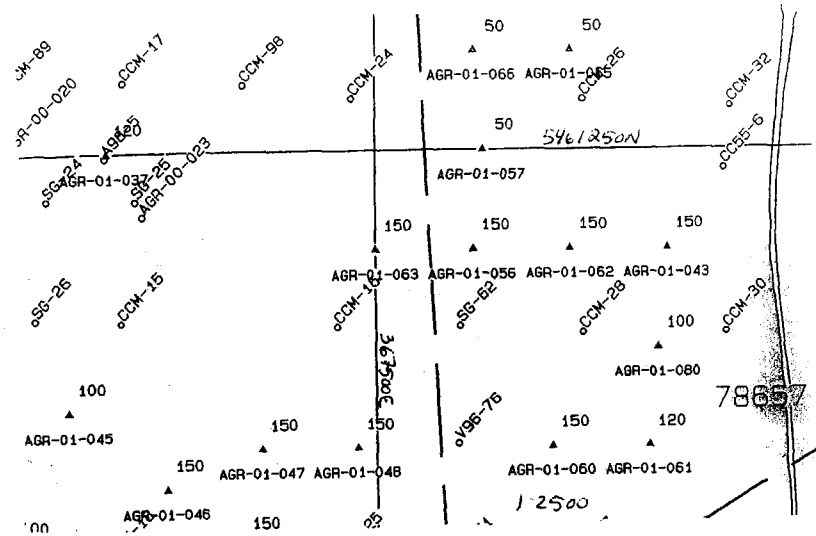
**Drill Hole ID**  
**AGR-01-057**

**North** 5461251.4  
**East** 367538.6  
**Elevation** 249.6  
**Proposed Depth** 150  
**Actual Depth** 44  
**Number of Boxes** 12

**Start Date** 4/11/2001  
**End Date** 4/11/2001

**Logged By** P. Marengi  
**Claim number** 78657  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** No  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite

**Date Logged** 5/30/2001  
**Township** Cargill



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-057

North 5461251.4

Start Date 4/11/2001

East 367538.6

End Date 4/11/2001

Elevation 249.6

Proposed Depth 150

Actual Depth 44

Number of Boxes 12

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	3.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	38 %
3.5 m	15.5 m	12.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 30cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	80 %
15.5 m	24.7 m	9.2 m	713	SAPROLITE - Dark brown to rusty brown, chunky rubble mixed with about 20% sandy residuum. Very homogeneous and local black coarse grained magnetite xtals. Lower contact established by the appearance of sovite rock.	65 %
24.7 m	44.0 m	19.3 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% coarse grained (20mm) black magnetite / mica / chlorite xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity. 44.00m = EOH.	100 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PL 1/1*

**Drill Hole ID  
AGR-01-058**

North 5461951.2

Start Date 4/5/2001

East 367525.8

End Date 4/11/2001

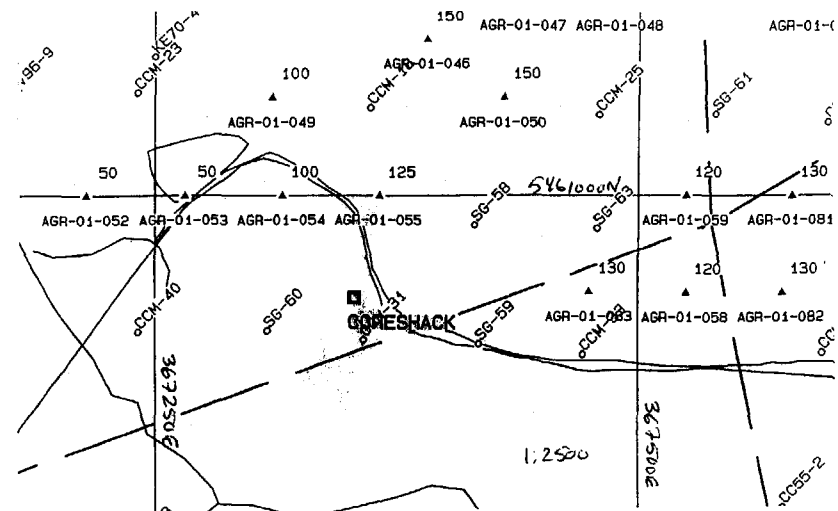
Elevation 247.3

Proposed Depth 120

Actual Depth 126

Number of Boxes 24

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 78659 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 3



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-058

North 5461951.2

Start Date 4/5/2001

East 367525.8

End Date 4/11/2001

Elevation 247.3

Proposed Depth 120

Actual Depth 126

Number of Boxes 24

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	11.0 m	11.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	5 %
11.0 m	45.5 m	34.5 m	717	BOULDER / BASAL TILL - Very little material was recovered. Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 60cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	20 %
45.5 m	95.0 m	49.5 m	720	BROWN RESIDUUM - Tan brown to orange brown to dark brown and locally green, sandy / muddy residuum. Lower contact established by the appearance of greenish mud.	85 %
95.0 m	99.5 m	4.5 m	704	CLINOCLORE - Dark green to black clinochlore. Very consistent with no brown residuum. Lower contact established by the appearance of brown residuum.	90 %
99.5 m	117.5 m	18.0 m	720	BROWN RESIDUUM - Tan brown to orange brown to dark brown and locally green chlorite rich (10%), sandy / muddy residuum. Lower contact established by the appearance of brown rocky mud.	85 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID

AGR-01-058

North 5461951.2

East 367525.8

Elevation 247.3

Proposed Depth 120

Actual Depth 126

Number of Boxes 24

Start Date 4/5/2001

End Date 4/11/2001

From	To	Length	Lithological Code	Description	% Recovery
117.5 m	122.0 m	4.5 m	713	SAPROLITE - Dark brown to rusty brown, fine grained purplish (siderite??) chunky rubble. Well developed foliation at 60 degrees to the core axis. Lower contact established by the appearance of sovite rock.	100 %
122.0 m	126.0 m	4.0 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity. 126.00m = EOH.	100 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PKM*

**Drill Hole ID  
AGR-01-059**

North 5460997.3

East 367524.9

Elevation 248.1

Proposed Depth 120

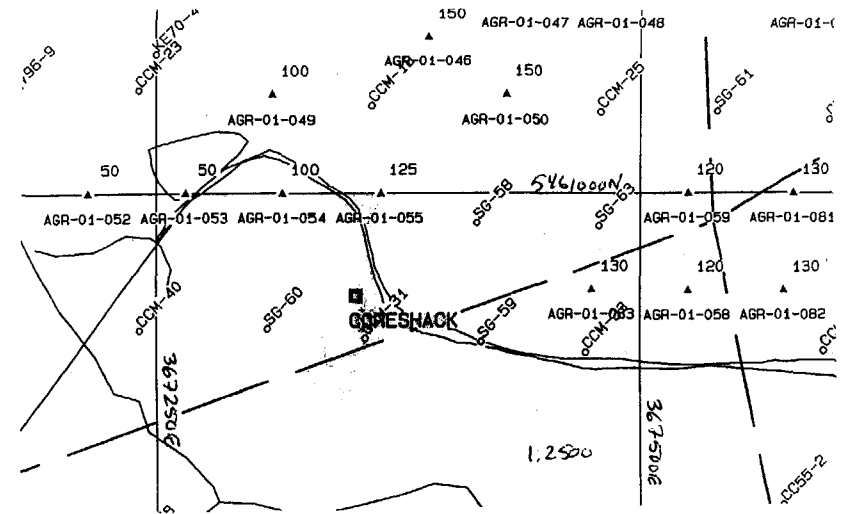
Actual Depth 138.5

Number of Boxes 27

Start Date 4/11/2001

End Date 4/17/2001

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 78658 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-059

North 5460997.3

Start Date 4/11/2001

East 367524.9

End Date 4/17/2001

Elevation 248.1

Proposed Depth 120

Actual Depth 138.5

Number of Boxes 27

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	3.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	29 %
3.5 m	51.5 m	48.0 m	717	BOULDER / BASAL TILL - Very little material was recovered, 27.50-51.5m = 3.3m. No recovery from 3.50-9.50m, 17.0- 18.50m, 35.0-42.0m. Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 60cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	30 %
51.5 m	66.5 m	15.0 m	720	BROWN RESIDUUM - Tan brown towith local patches of grayish white, sandy / muddy residuum. Lower contact established by the appearance of gray residuum.	75 %
66.5 m	90.5 m	24.0 m	720	GRAY SANDY RESIDUUM - Medium to dark gray, fine sand / muddy, chlorite rich, homogeneous residuum. Local 0.5 - 1.0m clay sections. The last 3m of this section grades into brown residuum (lower contact established).	80 %
90.5 m	94.3 m	3.8 m	720	BROWN RESIDUUM - Rusty brown flaky, sandy / muddy residuum. Local 20cm iron stained rocky rubble. Lower contact established by the appearance of gray residuum.	90 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-059**

*North* 5460997.3

*East* 367524.9

*Elevation* 248.1

*Proposed Depth* 120

*Actual Depth* 138.5

*Number of Boxes* 27

*Start Date* 4/11/2001

*End Date* 4/17/2001

From	To	Length	Lithological Code	Description	% Recovery
94.3 m	116.8 m	22.5 m	720	GRAY SANDY RESIDUUM - Grayish green to whitish beige, sandy residuum. Local large (2cm) flakes of chlorite. Local white sand. No recovery from 103.5 to 104.0m. Lower contact established by the appearance of brown residuum.	80 %
116.8 m	131.0 m	14.3 m	713	SAPROLITE - Dark brown to rusty brown sandy / muddy residuum, locally rocky rubble. Rock portion increases with depth. Lower contact established by the appearance of sovite rock.	85 %
131.0 m	138.5 m	7.5 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity. 138.50m = EOH.	95 %

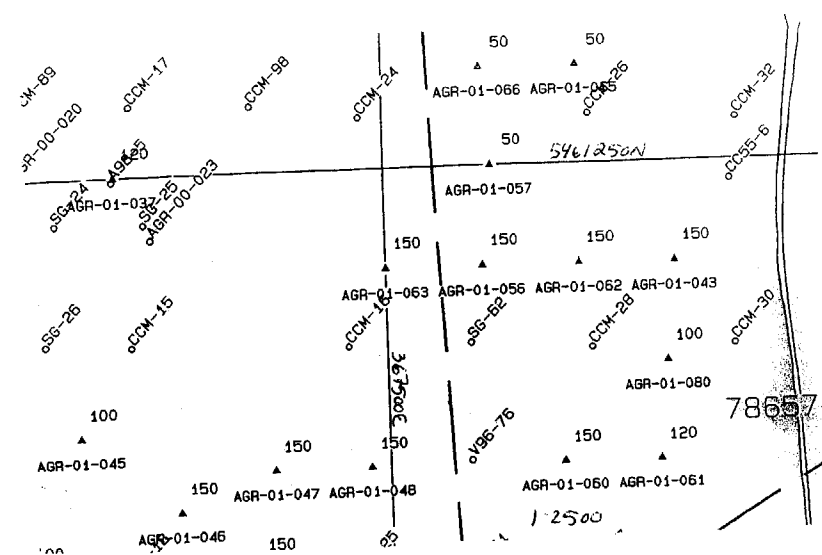
*P. Marengi*

**Agrium**  
 Kapuskasing Phosphate Operation  
 Exploration Drilling

Project Winter 2001

**Drill Hole ID** North 5461105.4 Start Date 4/19/2001  
**AGR-01-060** East 367590.7 End Date 4/21/2001  
 Elevation 250.5  
 Proposed Depth 150  
 Actual Depth 128  
 Number of Boxes 24

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78657 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drift Hole ID  
AGR-01-060

North 5461105.4

Start Date 4/19/2001

East 367590.7

End Date 4/21/2001

Elevation 250.5

Proposed Depth 150

Actual Depth 128

Number of Boxes 24

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	9.5 m	9.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	11 %
9.5 m	42.5 m	33.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 30cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of gray residuum.	22 %
42.5 m	96.5 m	54.0 m	720	GRAY SANDY RESIDUUM - Medium to navy gray to whitish gray, sandy residuum. Local sections of clay. Local sections that are mica / chlorite rich. Overall, very homogeneous section. Lower contact established by the appearance of brown residuum (gradual contact over 4m).	75 %
96.5 m	126.5 m	30.0 m	720	BROWN RESIDUUM - Dark brown to orange brown, sandy / muddy / rocky residuum. Local 0.5m of white clay. Lower contact established by the appearance of sovite rock.	75 %
126.5 m	130.0 m	3.5 m	711	SOVITE -Blocky ground over the first 4m. Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity. 130.00m = EOH.	70 %

Friday, June 08, 2001

Page 2 of 2

# Agrium

Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

*PL M.*

Drill Hole ID  
AGR-01-061

North 5461101.1

Start Date 4/17/2001

East 367638.4

End Date 4/19/2001

Elevation 251.9

Proposed Depth 120

Actual Depth 130

Number of Boxes 27

Logged By P. Marengi

Date Logged 5/30/2001

Claim number 78657

Township Cargill

Azim 0

Dip -90

Drilling Contractor Norex Drilling

Purpose

Results

Why hole terminated Normal termination

Core Size HQ

Casing No

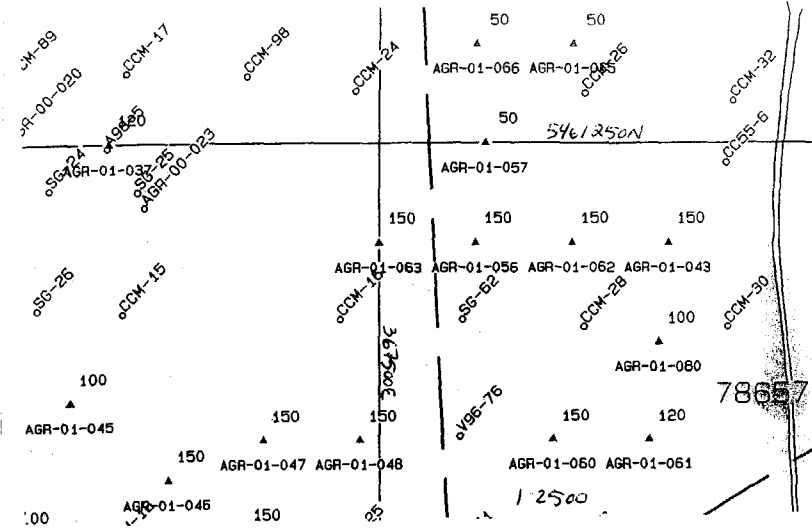
Hole Cemented No

Number of Assays

Number of ICP 0

Rejects/Pulps saved Yes

Core Stored Agrium Minesite



Friday, June 08, 2001



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-061

North 5461101.1

Start Date 4/17/2001

East 367638.4

End Date 4/19/2001

Elevation 251.9

Proposed Depth 120

Actual Depth 130

Number of Boxes 27

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	21.5 m	21.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	30 %
21.5 m	41.8 m	20.3 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	25 %
41.8 m	86.0 m	44.3 m	708	BROWN RESIDUUM / CLAY MIXTURE - 65% light gray to brownish gray to reddish gray clay interbedded with 1-3m sections of dark brown to orange brown, sandy / muddy / rocky residuum. The clay becomes absent with depth. Lower contact established by the appearance of brown residuum (no clay).	70 %
86.0 m	104.0 m	18.0 m	720	BROWN RESIDUUM - Dark brown to orange brown, sandy / muddy / rocky residuum. Lower contact established by the appearance of green clinochlore.	70 %
104.0 m	122.0 m	18.0 m	704	CLINOCHLORE - Dark green to black clinochlore. Saprolite section from 105.5 - 109.0m. The green unit grades from soft into hard rock with depth. The rock contains large chlorite rich bands that could be sovite bandind. Lower contact established by the appearance of sovite rock.	75 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*

**AGR-01-061**

*North* 5461101.1

*East* 367638.4

*Start Date* 4/17/2001

*End Date* 4/19/2001

*Elevation* 251.9

*Proposed Depth* 120

*Actual Depth* 130

*Number of Boxes* 27

From	To	Length	Lithological Code	Description	% Recovery
122.0 m	128.0 m	6.0 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (up to 10mm) black magnetite / mica / chlorite / po xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity displayed by 2m thick bands @ 70 deg. to the core axis. 128.00m = EOH.	100 %

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

*P. M.*

**Drill Hole ID**  
**AGR-01-062**

**North** 5461204.2

**Start Date** 4/23/2001

**East** 367600.8

**End Date** 4/24/2001

**Elevation** 250.3

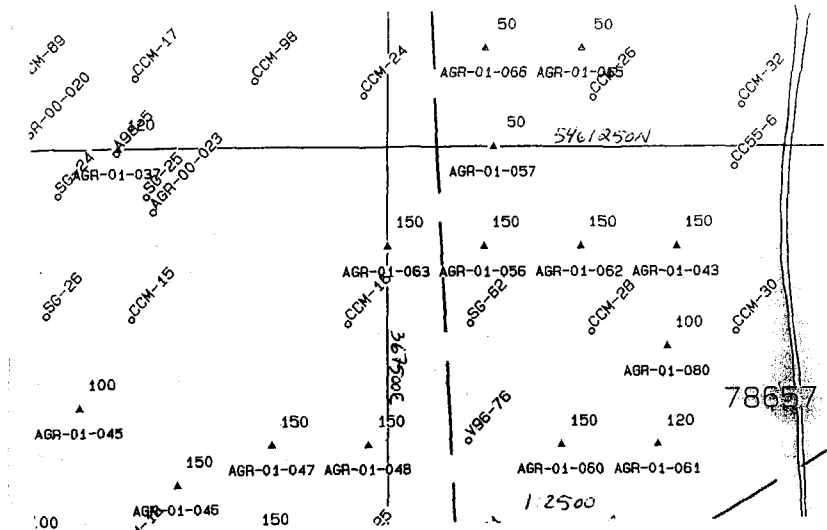
**Proposed Depth** 150

**Actual Depth** 22.5

**Number of Boxes** 13

**Logged By** P. Marengi      **Date Logged** 5/30/2001  
**Claim number** 78657      **Township** Cargill  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** No  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite

Friday, June 08, 2001



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-062

North 5461204.2 Start Date 4/23/2001

East 367600.8 End Date 4/24/2001

Elevation 250.3

Proposed Depth 150

Actual Depth 22.5

Number of Boxes 13

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	60 %
5.0 m	27.5 m	22.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of gray residuum.	27 %
27.5 m	36.5 m	9.0 m	720	GRAY SANDY RESIDUUM - Medium to navy gray to whitish gray, sandy residuum. Local sections that are mica / chlorite rich. Overall, very homogeneous section. Lower contact established by the appearance of brown residuum (gradual contact over 4m).	60 %
36.5 m	71.0 m	34.5 m	720	BROWN RESIDUUM - Dark brown to orange brown, sandy / muddy / rocky residuum. No recovery from 48.50 - 50.0m. Very poor recovery overall. Lower contact established by the appearance of sovite.	60 %
71.0 m	77.0 m	6.0 m	711	SOVITE -Light gray, fine grained matrix containing up to 50% coarse grained (up to 10mm) black magnetite / mica / chlorite / po xtals. . No visible weathering after the first 30cm. Sub - vertical schistosity.From 74.0 - 77.0m = massive white sovite. 77.00m = EOH.	100 %

Friday, June 08, 2001

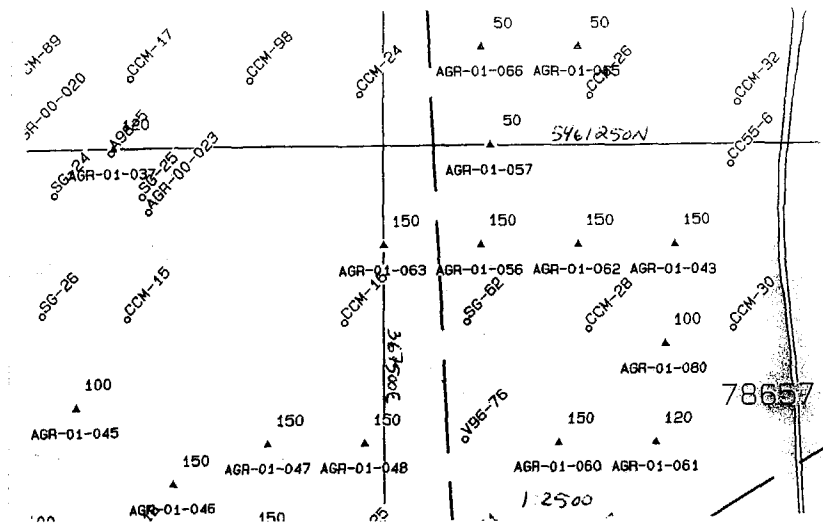
Page 2 of 2

*PL M*

**Agrium**  
 Kapuskasing Phosphate Operation  
 Exploration Drilling  
 Project Winter 2001

**Drill Hole ID** North 5461202 Start Date 4/10/2001  
**AGR-01-063** East 367501.5 End Date 4/10/2001  
 Elevation 248.5  
 Proposed Depth 150  
 Actual Depth 35  
 Number of Boxes 5

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78658 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-063

North 5461202

Start Date 4/10/2001

East 367501.5

End Date 4/10/2001

Elevation 248.5

Proposed Depth 150

Actual Depth 35

Number of Boxes 5

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	6.5 m	6.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	10 %
6.5 m	20.0 m	13.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	70 %
20.0 m	29.0 m	9.0 m	713	SAPROLITE - Dark brown to rusty brown sandy / muddy residuum, locally rocky rubble. Local patches of chlorite rich mud. Sharp lower contact. Lower contact established by the appearance of sovite rock.	50 %
29.0 m	32.0 m	3.0 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. . No visible weathering. Sub - vertical schistosity. 32.0m = EOH.	100 %

Friday, June 08, 2001

Page 2 of 2

PLM

**Agrium**  
Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

**Drill Hole ID**  
AGR-01-064

**North** 5461402.6  
**East** 367304.3

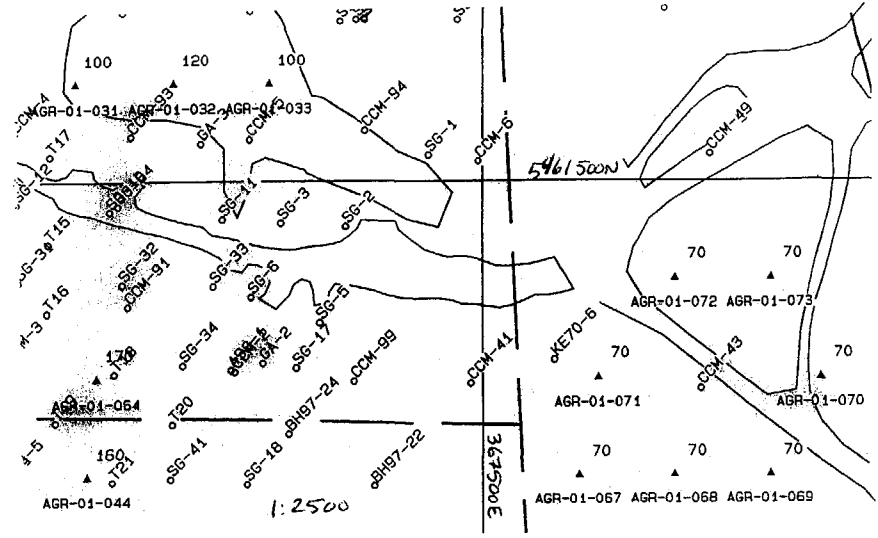
**Start Date** 4/20/2001  
**End Date** 4/23/2001

**Elevation** 221.1  
**Proposed Depth** 170  
**Actual Depth** 95  
**Number of Boxes** 20

**Logged By** P. Marengi  
**Claim number** 89923  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**

**Date Logged** 5/30/2001  
**Township** Cargill

**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** No  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite



Friday, June 08, 2001

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-064**

*North* 5461402.6

*Start Date* 4/20/2001

*East* 367304.3

*End Date* 4/23/2001

*Elevation* 221.1

*Proposed Depth* 170

*Actual Depth* 95

*Number of Boxes* 20

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	63.5 m	63.5 m	706	CRETACEOUS WASTE - Mixture of 60% black organic rich peat, 30% medium to coarse grained silica sand ranging from white to beige and 10% whitish gray clay. Interbedded sections of 1-5m. Most of the peat displays wood chips and is siliceous to some extent. Very gradual lower contact into gray residuum.	70 %
63.5 m	95.0 m	31.5 m	720	GRAY SANDY RESIDUUM - Medium to navy gray to whitish gray, sandy residuum. Local sections that are mica / chlorite rich. Overall, very homogeneous section. 95.0m = EOH. Hole stopped due to technical difficulties.	65 %

*Friday, June 08, 2001*

*Page 2 of 2*



*P. M.*

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

**Drill Hole ID**  
**AGR-01-065**

North 5461300

Start Date 4/9/2001

East 367600

End Date 4/9/2001

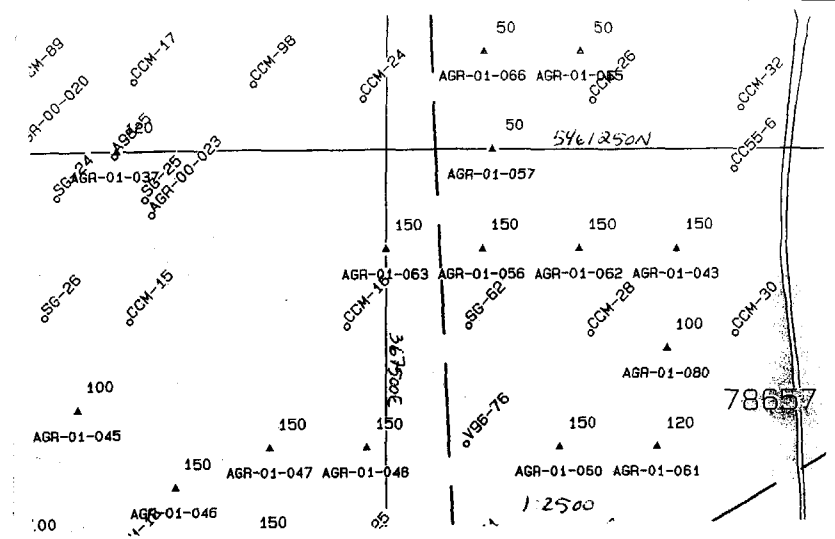
Elevation 249.3

Proposed Depth 50

Actual Depth 23

Number of Boxes 7

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78657 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-065

North 5461300

Start Date 4/9/2001

East 367600

End Date 4/9/2001

Elevation 249.3

Proposed Depth 50

Actual Depth 23

Number of Boxes 7

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	11.0 m	11.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of sovite rock.	90 %
11.0 m	23.0 m	12.0 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 23.0m = EOH.	100 %

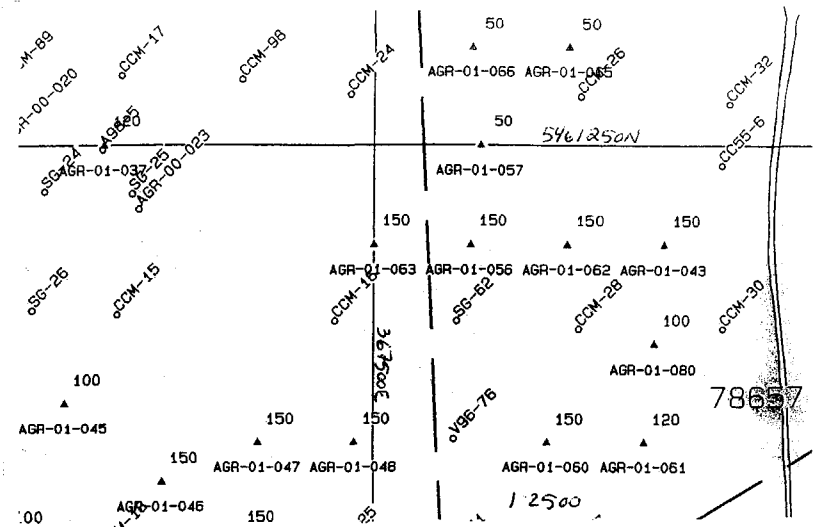
*P.L.M.*

**Agrium**  
 Kapuskasing Phosphate Operation  
 Exploration Drilling

Project Winter 2001

**Drill Hole ID** North 5461297.6 Start Date 4/10/2001  
**AGR-01-066** East 367549.1 End Date 4/11/2001  
 Elevation 250.6  
 Proposed Depth 50  
 Actual Depth 30.5  
 Number of Boxes 8

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78657 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-066**

*North* 5461297.6

*East* 367549.1

*Elevation* 250.6

*Proposed Depth* 50

*Actual Depth* 30.5

*Number of Boxes* 8

*Start Date* 4/10/2001

*End Date* 4/11/2001

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	11.8 m	11.8 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of sovite rock.	65 %
11.8 m	30.5 m	18.8 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 30.5m = EOH. Badly broken core.	75 %

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

*P. Marengi*

**Drill Hole ID**  
**AGR-01-067**

**North** 5461351.7

**Start Date** 4/11/2001

**East** 367553

**End Date** 4/12/2001

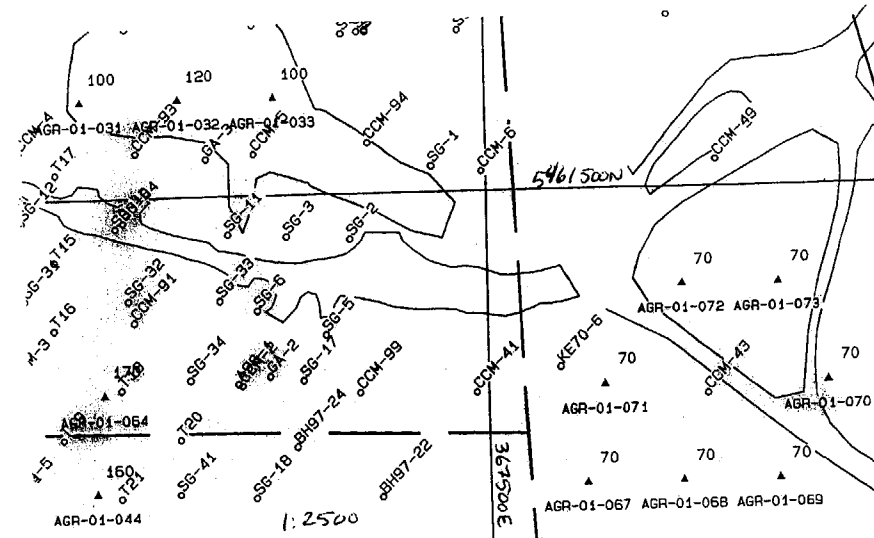
**Elevation** 248.9

**Proposed Depth** 70

**Actual Depth** 42.5

**Number of Boxes** 9

**Logged By** P. Marengi      **Date Logged** 5/30/2001  
**Claim number** 78657      **Township** Cargill  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** No  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-067

North 5461351.7

Start Date 4/11/2001

East 367553

End Date 4/12/2001

Elevation 248.9

Proposed Depth 70

Actual Depth 42.5

Number of Boxes 9

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	20 %
5.0 m	11.0 m	6.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	67 %
11.0 m	21.0 m	10.0 m	720	BROWN RESIDUUM - Dark brown to orange brown, sandy / muddy / rocky residuum. No recovery from 48.50 - 50.0m. Very poor recovery overall. Lower contact established by the appearance of saprolite.	40 %
21.0 m	35.8 m	14.8 m	713	SAPROLITE - Dark brown to rusty brown rocky rubble. Local patches of chlorite rich mud. Poor recovery. Lower contact established by the appearance of sovite rock.	65 %
35.8 m	42.5 m	6.8 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 42.75m = EOH.	100 %

Friday, June 08, 2001

Page 2 of 2

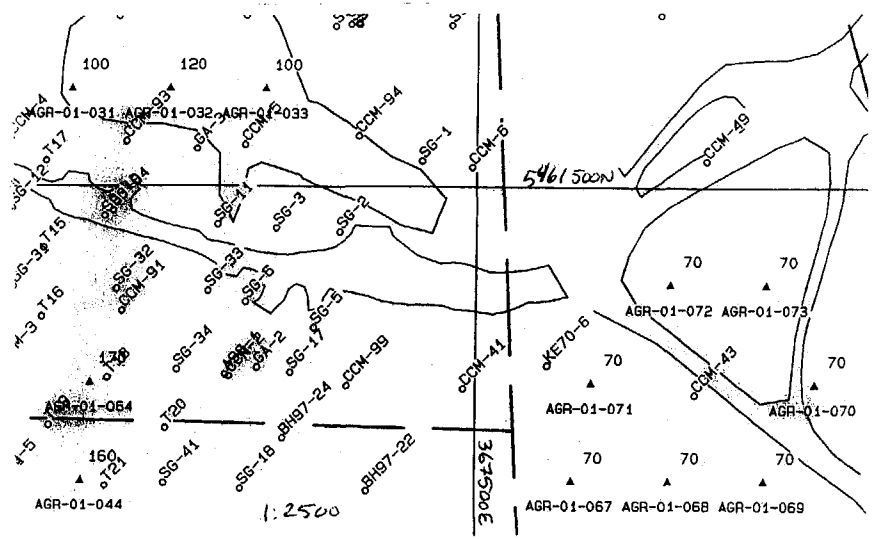
**Agrium**  
 Kapuskasing Phosphate Operation  
 Exploration Drilling

*P/M*

**Drill Hole ID** North 5461355.4 Start Date 4/27/2001  
**AGR-01-068** East 367601.6 End Date 4/27/2001  
 Elevation 248.9  
 Proposed Depth 70  
 Actual Depth 23  
 Number of Boxes 6

Project Winter 2001

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78657 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID  
AGR-01-068

North 5461355.4

Start Date 4/27/2001

East 367601.6

End Date 4/27/2001

Elevation 248.9

Proposed Depth 70

Actual Depth 23

Number of Boxes 6

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	40 %
5.0 m	10.3 m	5.3 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 10cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	90 %
10.3 m	16.3 m	6.0 m	720	BROWN RESIDUUM - Dark brown, sandy / muddy / rocky residuum. Lower contact established by the appearance of sovite.	67 %
16.3 m	23.0 m	6.8 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% coarse grained (up to 7cm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 23.05m = EOH.	100 %



**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PL M1*

**Drill Hole ID  
AGR-01-069**

North 5461350.8

East 367649.7

Start Date 4/27/2001

End Date 4/27/2001

Elevation 251.7

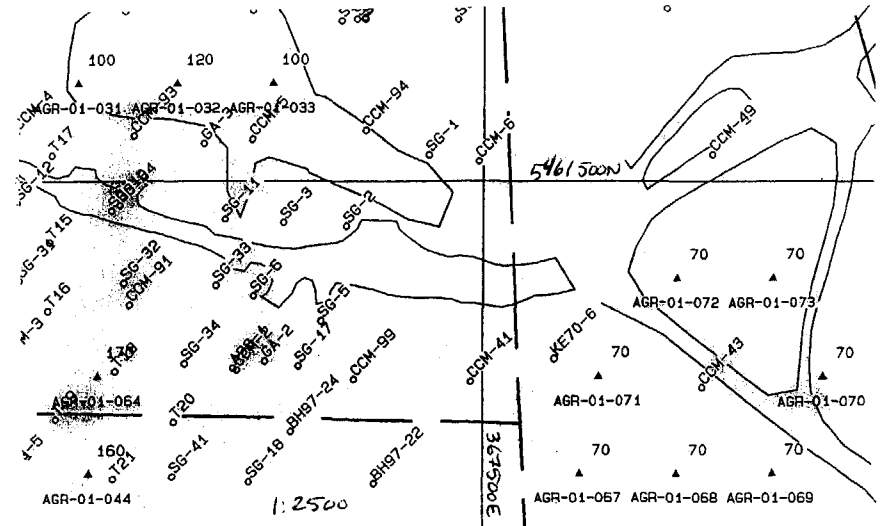
Proposed Depth 70

Actual Depth 38

Number of Boxes 8

Logged By P. Marengi  
Claim number 78657  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite

Date Logged 5/30/2001  
Township Cargill



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-069

North 5461350.8

Start Date 4/27/2001

East 367649.7

End Date 4/27/2001

Elevation 251.7

Proposed Depth 70

Actual Depth 38

Number of Boxes 8

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	3.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	6 %
3.5 m	15.5 m	12.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 40cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	80 %
15.5 m	30.5 m	15.0 m	713	SAPROLITE - Dark brown to rusty brown rocky rubble. Local patches of chlorite rich mud. Poor recovery. Lower contact established by the appearance of sovite rock.	60 %
30.5 m	38.0 m	7.5 m	711	SOVITE - Light gray, fine grained matrix containing up to 10% medium grained (up to 2mm) black magnetite / mica / chlorite / poxtals. No visible weathering. Sub - vertical schistosity. 38.0m = EOH.	100 %

Friday, June 08, 2001

Page 2 of 2

**Agrium**

**Kapuskasing Phosphate Operation**

**Exploration Drilling**

**Project** Winter 2001

**Drill Hole ID**  
**AGR-01-070**

**North** 5461400.6

**Start Date** 4/24/2001

**East** 367672.2

**End Date** 4/25/2001

**Elevation** 252.6

**Proposed Depth** 70

**Actual Depth** 75.5

**Number of Boxes** 16

**Logged By** P. Marengi

**Date Logged** 5/30/2001

**Claim number** 78657

**Township** Cargill

**Azim** 0

**Dip** -90

**Drilling Contractor** Norex Drilling

**Purpose**

**Results**

**Why hole terminated** Normal termination

**Core Size** HQ

**Casing** No

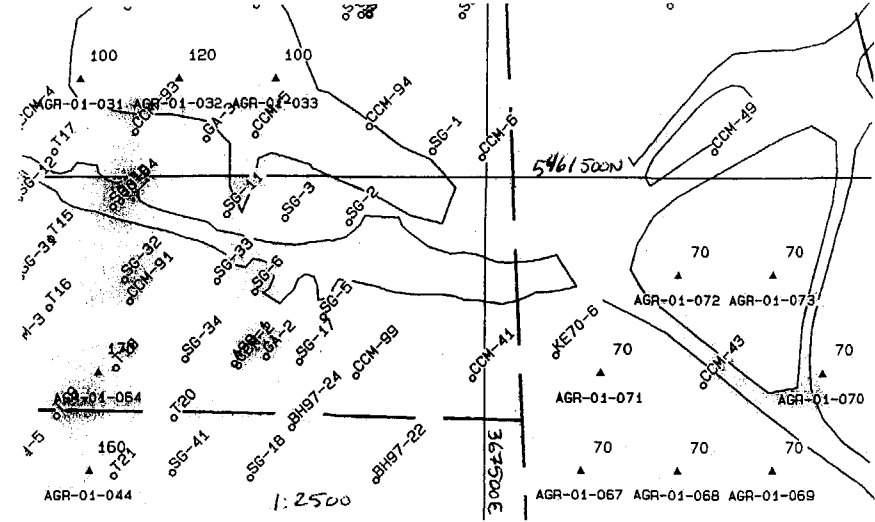
**Hole Cemented** No

**Number of Assays**

**Number of ICP** 0

**Rejects/Pulps saved** Yes

**Core Stored** Agrium Minesite



Friday, June 08, 2001

Page 1 of 2

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID

AGR-01-070

North 5461400.6

East 367672.2

Elevation 252.6

Proposed Depth 70

Actual Depth 75.5

Number of Boxes 16

Start Date 4/24/2001

End Date 4/25/2001

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	23.0 m	23.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 15cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of green clinochlore.	70 %
23.0 m	27.5 m	4.5 m	704	CLINOCHLORE - Dark green to black clinochlore. Lower contact established by the appearance of brown residuum.	70 %
27.5 m	60.5 m	33.0 m	720	BROWN RESIDUUM - Dark brown to orange brown to tan brown with local yellowish brown, clay rich / muddy residuum. Lower contact established by the appearance of sovite rubble and rock.	90 %
60.5 m	75.5 m	15.0 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% medium grained (up to 2mm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 75.50m = EOH.	100 %

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

*PH M1*

**Drill Hole ID**  
**AGR-01-071**

North 5461400.7

Start Date 4/23/2001

East 367559.7

End Date 4/23/2001

Elevation 248.3

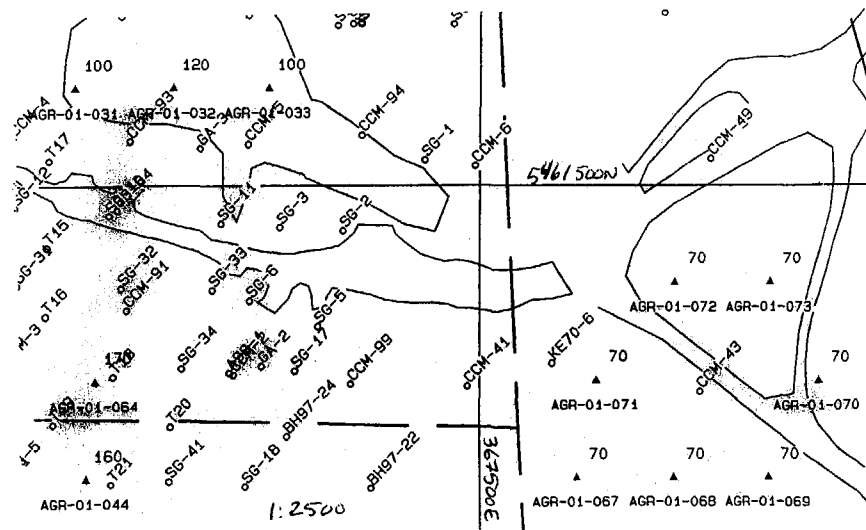
Proposed Depth 70

Actual Depth 56

Number of Boxes 13

Logged By P. Marenghi  
 Claim number 78657  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite

Date Logged 5/30/2001  
 Township Cargill



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-071

North 5461400.7

Start Date 4/23/2001

East 367559.7

End Date 4/23/2001

Elevation 248.3

Proposed Depth 70

Actual Depth 56

Number of Boxes 13

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	3.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	43 %
3.5 m	9.5 m	6.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of cemented residuum.	84 %
9.5 m	35.0 m	25.5 m	720	CEMENTED RESIDUUM - 70% cemented / rocky residuum with 30% chloritic sections. The cemented residuum appears as fragmental, fine grained, calcite cemented, very dirty rock. Sections of rock range from 1-4m. Lower contact established by the appearance of brown residuum.	80 %
35.0 m	54.5 m	19.5 m	713	SAPROLITE - 50% sovite rubble (white, fine grained, massive 20-70cm chunks) mixed with tan to dark brown to rusty brown rocky rubble. Sovite content increases with depth. Lower contact established by the appearance of sovite rock.	70 %
54.5 m	56.0 m	1.5 m	711	SOVITE -Light gray, fine grained matrix containing up to 10% medium grained (up to 2mm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 56.0m = EOH.	100 %

Friday, June 08, 2001

Page 2 of 2

*PL M1.*

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

**Drill Hole ID  
AGR-01-072**

North 5461462.9

Start Date 4/25/2001

East 367601.7

End Date 4/26/2001

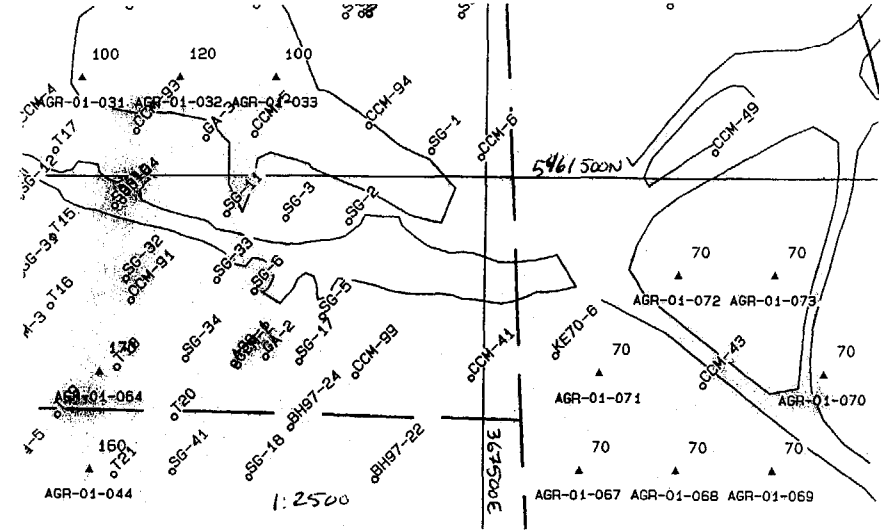
Elevation 249.6

Proposed Depth 70

Actual Depth 36.5

Number of Boxes 6

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 78657 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-072

North 5461462.9

Start Date 4/25/2001

East 367601.7

End Date 4/26/2001

Elevation 249.6

Proposed Depth 70

Actual Depth 36.5

Number of Boxes 6

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	20 %
5.0 m	8.0 m	3.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 5cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	17 %
8.0 m	30.5 m	22.5 m	720	BROWN RESIDUUM - Dark brown to orange brown, rocky / muddy residuum. No recovery between 24.5 - 26.0m and 27.5 - 29.0m. Lower contact established by the appearance of sovite rock.	70 %
30.5 m	36.5 m	6.0 m	711	SOVITE - Light gray, fine grained matrix containing up to 5% medium grained (up to 3mm) black magnetite / mica / chlorite / poxtals. No visible weathering. Sub - vertical schistosity. 36.50m = EOH.	100 %



**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PL M1*

**Drill Hole ID  
AGR-01-073**

North 5461452

East 367648.4

Elevation 250.9

Proposed Depth 70

Actual Depth 54.5

Number of Boxes 14

Start Date 4/26/2001

End Date 4/27/2001

Logged By P. Marengi

Date Logged 5/30/2001

Claim number 78657

Township Cargill

Azim 0

Dip -90

Drilling Contractor Norex Drilling

Purpose

Results

Why hole terminated Normal termination

Core Size HQ

Casing No

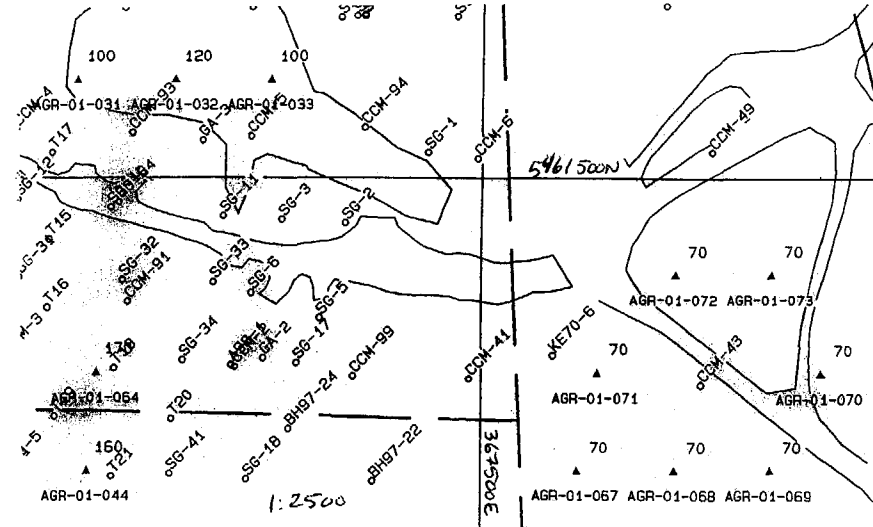
Hole Cemented No

Number of Assays

Number of ICP 0

Rejects/Pulps saved Yes

Core Stored Agrium Minesite



Friday, June 08, 2001

Page 1 of 2

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-073

North 5461452

Start Date 4/26/2001

East 367648.4

End Date 4/27/2001

Elevation 250.9

Proposed Depth 70

Actual Depth 54.5

Number of Boxes 14

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	4.0 m	4.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	25 %
4.0 m	14.8 m	10.8 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum.	65 %
14.8 m	47.0 m	32.3 m	713	SAPROLITE - 50% sovite rubble (white, fine grained, massive 20-70cm chunks) mixed with tan to dark brown to rusty brown rocky rubble. Sovite content increases with depth. Lower contact established by the appearance of sovite rock.	80 %
47.0 m	54.5 m	7.5 m	711	SOVITE -Light gray, fine grained matrix containing up to 15% medium grained (up to 2mm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 54.50m = EOH.	100 %

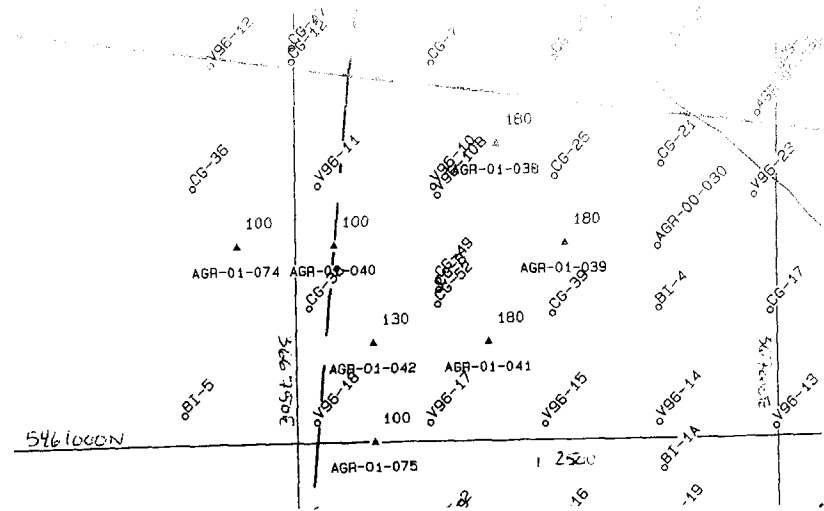
PLM 1.

**Agrium**  
Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

**Drill Hole ID** North 5461100.2 Start Date 3/18/2001  
**AGR-01-074** East 366720.4 End Date 3/20/2001  
Elevation 239.7  
Proposed Depth 100  
Actual Depth 80  
Number of Boxes 20

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 413075 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing None  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Monday, June 11, 2001

# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-074

North 5461100.2

Start Date 3/18/2001

East 366720.4

End Date 3/20/2001

Elevation 239.7

Proposed Depth 100

Actual Depth 80

Number of Boxes 20

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of gray gumbo clay.	20 %
5.0 m	15.5 m	10.5 m	715	GUMBO CLAY - Light gray, homogenous, soft clay. Local boulders at the top of this unit. Lower contact established by the appearance of pebbles and boulders.	43 %
15.5 m	29.0 m	13.5 m	717	BOULDER / BASAL TILL - Very little material was recovered. Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of green / tan clay.	93 %
29.0 m	36.5 m	7.5 m	707	GREEN / BROWN CLAY - Wood brown and epidote green clay. Locally very dark rusty brown. Speckled texture on fresh breaks. Lower contact established by the appearance of green clay.	85 %
36.5 m	46.3 m	9.8 m	713	WEATHERED PYROXENITE - Dark green, sandy mud with white stringers of weathered feldspar. Gradual upper contact grading into a dark green. Very homogeneous unit. Does not look like A ore. Numerous large chlorite flakes. Lower contact established by the appearance of brownish green sandy mud.	85 %

Monday, June 11, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project Winter 2001*

*Lithological Descriptions*

**Drill Hole ID**  
**AGR-01-074**

**North** 5461100.2

**Start Date** 3/18/2001

**East** 366720.4

**End Date** 3/20/2001

**Elevation** 239.7

**Proposed Depth** 100

**Actual Depth** 80

**Number of Boxes** 20

From	To	Length	Lithological Code	Description	% Recovery
46.3 m	56.0 m	9.8 m	720	BROWN RESIDUUM - Dark chocolate brown to tan brown to green with local yellowish brown, sandy / muddy residuum. Lower contact established by the appearance of green rock.	85 %
56.0 m	59.0 m	3.0 m	713	WEATHERED PYROXENITE - Dark green, sandy mud with white stringers of weathered feldspar. Gradual upper contact grading into a dark green. Very homogeneous unit. Does not look like A ore. Numerous large chlorite flakes. Lower contact established by the appearance of brownish rock.	90 %
59.0 m	71.0 m	12.0 m	720	BROWN ROCK - Dark rusty brown to tan brown to green to beige, rocky / clay like residuum. Could be weathered mafic unit but probably not pyroxenite (altered country rock). Green / lime green seems to be epidote. No structural features visible. Lower contact established by the appearance of dark green pyroxenite.	85 %
71.0 m	80.0 m	9.0 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm). Very blocky ground. 80.0m = EOH.	85 %

*Monday, June 11, 2001*

*Page 3 of 3*

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

**Project** Winter 2001

*P. M.*

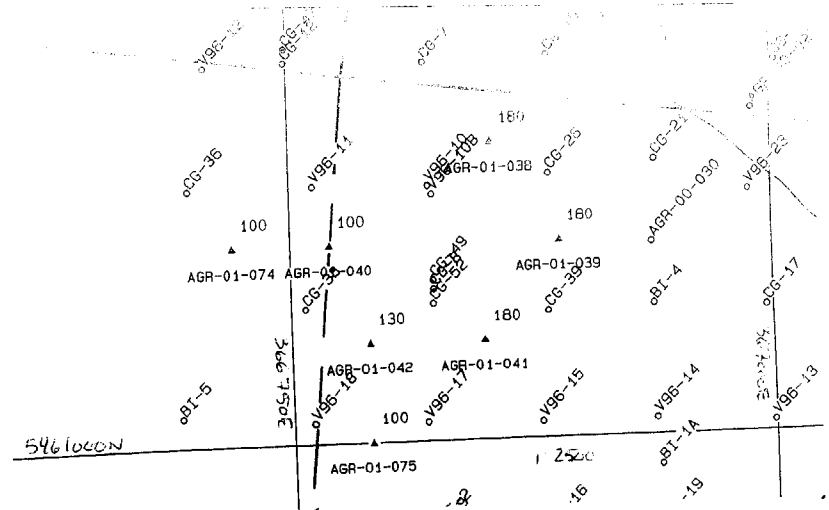
**Drill Hole ID**  
**AGR-01-075**

**North** 5461000.9  
**East** 366789.1  
**Elevation** 241.1

**Start Date** 3/20/2001  
**End Date** 3/22/2001

**Proposed Depth** 100  
**Actual Depth** 98  
**Number of Boxes** 22

**Logged By** P. Marengi      **Date Logged** 5/30/2001  
**Claim number** 413074      **Township** Cargill  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** None  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-075

North 5461000.9 Start Date 3/20/2001

East 366789.1 End Date 3/22/2001

Elevation 241.1

Proposed Depth 100

Actual Depth 98

Number of Boxes 22

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	3.5 m	3.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	29 %
3.5 m	42.5 m	39.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 30cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of gray residuum.	76 %
42.5 m	86.0 m	43.5 m	720	GRAY SANDY RESIDUUM - Medium to navy gray to whitish gray to dark green with white stringers, chlorite rich (dark green flakes), locally clay rich, sandy residuum. Lower contact established by the appearance of mud and rocky rubble.	60 %
86.0 m	92.0 m	6.0 m	720	CEMENTED RESIDUUM - Light to medium brownish green, rocky residuum. The cemented residuum appears as fragmental, fine grained, calcite cemented, very dirty rock. Could also be weathered carbonatite as most fragments are heavily iron stained. Sections of rock range from 1-4m. Lower contact established by the appearance of brown residuum.	80 %
92.0 m	98.0 m	6.0 m	720	BROWN RESIDUUM - Dark chocolate brown to tan brown to green with local yellowish brown, sandy / muddy residuum. Hole stopped due to technical difficulties. 98.0m = EOH.	85 %

Friday, June 08, 2001

Page 2 of 2

**Agrium**  
**Kapuskasing Phosphate Operation**  
**Exploration Drilling**

Project Winter 2001

*PK M 1.*

**Drill Hole ID**  
**AGR-01-076**

**North** 5461849.3

**Start Date** 3/27/2001

**East** 366740.7

**End Date** 3/29/2001

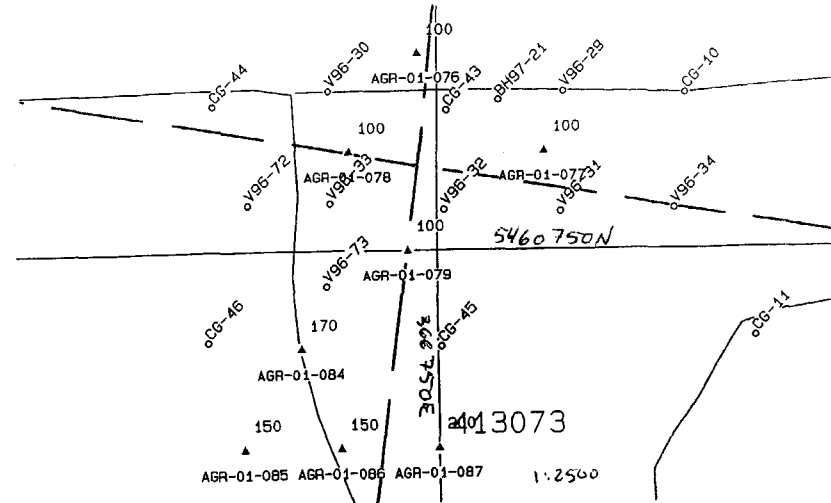
**Elevation** 242.3

**Proposed Depth** 100

**Actual Depth** 105.5

**Number of Boxes** 20

**Logged By** P. Marenghi **Date Logged** 5/30/2001  
**Claim number** 413075 **Township** Cargill  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** No  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite



Friday, June 08, 2001



# Agrium

**Kapuskasing Phosphate Operation**

**Exploration Drilling**

*Project* Winter 2001

*Lithological Descriptions*

**Drill Hole ID**  
**AGR-01-076**

**North** 5461849.3

**Start Date** 3/27/2001

**East** 366740.7

**End Date** 3/29/2001

**Elevation** 242.3

**Proposed Depth** 100

**Actual Depth** 105.5

**Number of Boxes** 20

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	6.5 m	6.5 m	714	VARVED CLAY - First 50cm is black peat. Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of gray gumbo clay.	19 %
6.5 m	17.0 m	10.5 m	715	GUMBO CLAY - Light gray, homogenous, soft clay. Local boulders at the top of this unit. Lower contact established by the appearance of pebbles and boulders.	38 %
17.0 m	27.5 m	10.5 m	717	BOULDER / BASAL TILL - Very little material was recovered. Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. No recovery from 18.50-21.50m. Lower contact established by the appearance of brown residuum.	21 %
27.5 m	35.0 m	7.5 m	720	BROWN RESIDUUM - Dark brown to medium brown, sandy / muddy residuum. Lower contact established by the appearance of gray residuum.	74 %
35.0 m	39.5 m	4.5 m	720	GRAY SANDY RESIDUUM - Medium to navy gray to whitish gray to dark green with white stringers, chlorite rich (dark green flakes), locally clay rich, sandy residuum. Lower contact established by the appearance of mud and rocky rubble.	90 %

Friday, June 08, 2001

Page 2 of 3

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-076

North 5461849.3

Start Date 3/27/2001

East 366740.7

End Date 3/29/2001

Elevation 242.3

Proposed Depth 100

Actual Depth 105.5

Number of Boxes 20

From	To	Length	Lithological Code	Description	% Recovery
39.5 m	57.5 m	18.0 m	713	WEATHERED CARBONATITE - 70% tan brown to bark brown, iron stained, cavity rich rocky rubble in 5-10cm pieces mixed together with sandy / muddy residuum. Lower contact established by the appearance of rocky rubble.	45 %
57.5 m	81.5 m	24.0 m	720	BROWN RESIDUUM - Dark brown to medium brown to orange brown, sandy / muddy residuum. About 20% rocky rubble. Lower contact established by the appearance of clinochlore.	85 %
81.5 m	89.0 m	7.5 m	704	CLINOCHLORE - Dark green to black clinochlore. Lower contact established by the appearance of brown residuum.	70 %
89.0 m	98.8 m	9.8 m	720	BROWN RESIDUUM - Dark brown to medium brown to orange brown, sandy / muddy residuum. About 20% rocky rubble. This could be a saproilite zone. Lower contact established by the appearance of sovitee.	80 %
98.8 m	105.5 m	6.8 m	711	SOVITE - Light gray, fine grained matrix containing up to 15% medium grained (up to 2mm) black magnetite / mica / chlorite / poxtals. No visible weathering. Sub - vertical schistosity. 105.50m = EOH.	100 %

Friday, June 08, 2001

Page 3 of 3

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

**Project** Winter 2001

*PL M.*

**Drill Hole ID**  
**AGR-01-077**

**North** 5460800.3

**Start Date** 3/29/2001

**East** 366805.4

**End Date** 4/1/2001

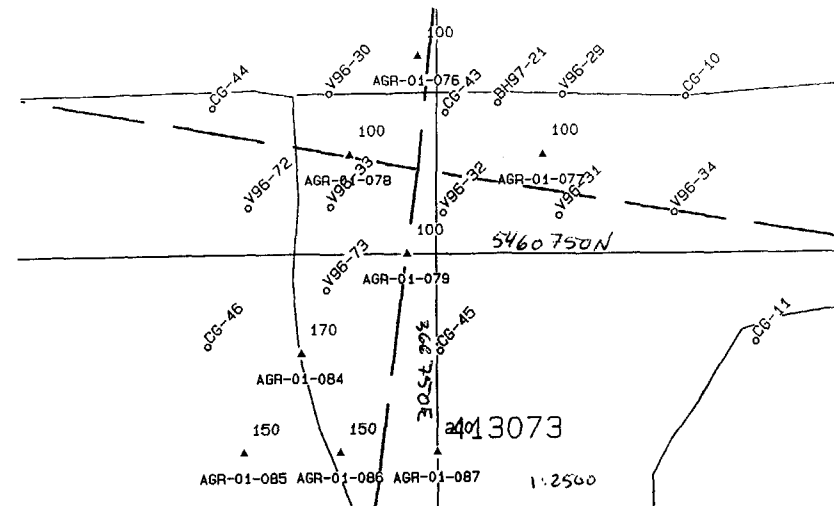
**Elevation** 242.2

**Proposed Depth** 150

**Actual Depth** 141.5

**Number of Boxes** 30

**Logged By** P. Marengi  
**Date Logged** 5/30/2001  
**Claim number** 413074  
**Township** Cargill  
**Azim** 0  
**Dip** -90  
**Drilling Contractor** Norex Drilling  
**Purpose**  
**Results**  
**Why hole terminated** Normal termination  
**Core Size** HQ  
**Casing** No  
**Hole Cemented** No  
**Number of Assays**  
**Number of ICP** 0  
**Rejects/Pulps saved** Yes  
**Core Stored** Agrium Minesite



Friday, June 08, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-077

North 5460800.3

East 366805.4

Elevation 242.2

Proposed Depth 150

Actual Depth 141.5

Number of Boxes 30

Start Date 3/29/2001

End Date 4/1/2001

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	15.5 m	15.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. No recovery from 0-2m, 3.5-5.0m, 8.0-11.0m. Lower contact established by the appearance of pebbles and boulders.	23 %
15.5 m	30.5 m	15.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. No recovery from 17.0-18.5m. Lower contact established by the appearance of cretaceous waste.	60 %
30.5 m	48.5 m	18.0 m	706	CRETACEOUS WASTE - Mixture of 60% black organic rich peat, 30% medium to coarse grained silica sand ranging from white to beige and 10% whitish gray clay. Interbedded sections of 1-5m. Most of the peat displays wood chips and is silaceous to some extent. Lower contact established by the appearance of gray clay.	60 %
48.5 m	57.5 m	9.0 m	707	GRAY CLAY / SILICA SAND - Light gray, very homogeneous clay becoming sandy (silica sand) towards the end of the section. Lower contact established by the appearance of greenish brown residuum.	60 %
57.5 m	141.5 m	84.0 m	720	BROWN RESIDUUM _ Greenish brown to medium brown to reddish brown, sandy / muddy and locally rocky residuum. After 89m the material becomes very homogeneous and a dark brown. After 100m the material becomes more rocky (15-20%). The rocky portion seems to increase with depth. 141.50m = EOH.	60 %

Friday, June 08, 2001

Page 2 of 2

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

**Drill Hole ID  
AGR-01-078**

North 5460795.9

East 366706.9

Elevation 241.5

Proposed Depth 150

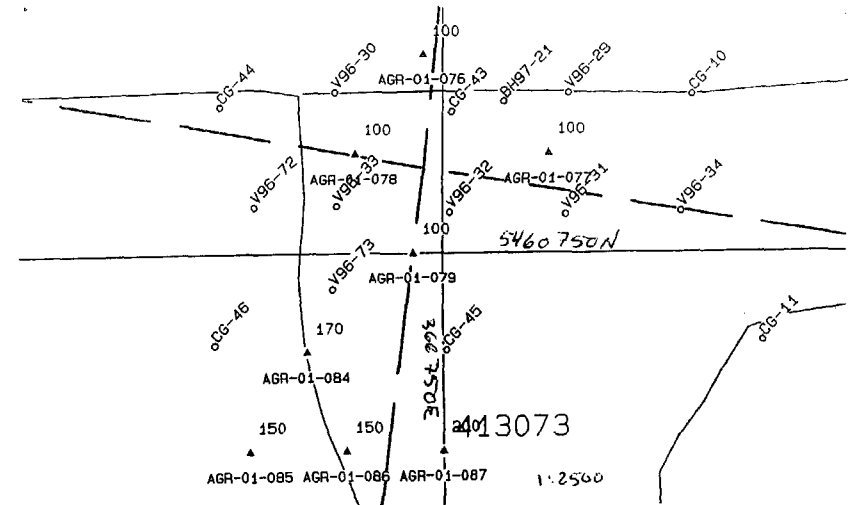
Actual Depth 117.5

Number of Boxes 26

Start Date 4/2/2001

End Date 4/3/2001

Logged By	P. Marengi	Date Logged	5/30/2001
Claim number	413072	Township	Cargill
Azim	0		
Dip	-90		
Drilling Contractor	Norex Drilling		
Purpose			
Results			
Why hole terminated	Normal termination		
Core Size	HQ		
Casing	No		
Hole Cemented	No		
Number of Assays			
Number of ICP	0		
Rejects/Pulps saved	Yes		
Core Stored	Agrium Minesite		



Monday, June 11, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-078

North 5460795.9 Start Date 4/2/2001

East 366706.9 End Date 4/3/2001

Elevation 241.5

Proposed Depth 150

Actual Depth 117.5

Number of Boxes 26

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	9.5 m	9.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. No recovery from 0-2m, 3.5-5.0m,8.0-11.0m. Lower contact established by the appearance of pebbles and boulders.	70 %
9.5 m	34.3 m	24.8 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. No recovery from 17.0-18.5m. Lower contact established by the appearance of gray clay.	40 %
34.3 m	45.5 m	11.3 m	707	GRAY CLAY - Light gray to white to locally brown, very homogeneous clay. Chlorite rich stringers throughout. Lower contact established by the appearance of greenish gray residuum.	80 %
45.5 m	52.3 m	6.8 m	720	GRAY RESIDUUM - Medium to navy gray to tan brown, chlorite rich (dark green flakes) dark brown sections locally, sandy residuum. Lower contact established by the appearance of brown residuum.	60 %
52.3 m	66.5 m	14.3 m	720	BROWN RESIDUUM - Tan brown to medium brown, sandy / muddy and locally rocky residuum. Local 0.5m sections of gray residuum. Lower contact established by the appearance of gray residuum.	90 %

Monday, June 11, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project Winter 2001*

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-078**

*North* 5460795.9

*Start Date* 4/2/2001

*East* 366706.9

*End Date* 4/3/2001

*Elevation* 241.5

*Proposed Depth* 150

*Actual Depth* 117.5

*Number of Boxes* 26

From	To	Length	Lithological Code	Description	% Recovery
66.5 m	99.5 m	33.0 m	720	GRAY RESIDUUM - Medium to navy gray to tan brown, chlorite rich (dark green flakes) dark brown sections locally, sandy residuum. Lower contact established by the appearance of weathered carbonatite.	90 %
99.5 m	111.5 m	12.0 m	713	WEATHERED CARBONATITE - 70% tan brown to bark brown, iron stained, cavity rich rocky rubble in 5-10cm pieces mixed together with sandy / muddy residuum. Badly broken core. Lower contact established by the appearance of fresh sovite rock.	85 %
111.5 m	117.5 m	6.0 m	711	SOVITE - Light gray, fine grained matrix containing up to 15% medium grained (up to 2mm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 117.50m = EOH.	100 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

**Project** Winter 2001

*PK M!*

**Drill Hole ID**  
**AGR-01-079**

**North** 5460748.7

**East** 366738.7

**Elevation** 241.6

**Proposed Depth** 100

**Actual Depth** 99.5

**Number of Boxes** 21

**Start Date** 4/4/2001

**End Date** 4/4/2001

**Logged By** P. Marengi

**Date Logged** 5/30/2001

**Claim number** 413073

**Township** Cargill

**Azimuth** 0

**Dip** -90

**Drilling Contractor** Norex Drilling

**Purpose**

**Results**

**Why hole terminated** Normal termination

**Core Size** HQ

**Casing** No

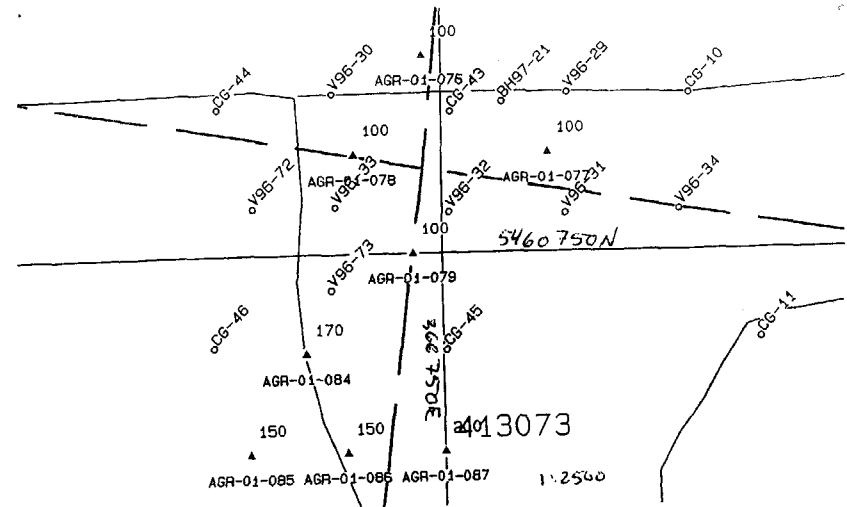
**Hole Cemented** No

**Number of Assays**

**Number of ICP** 0

**Rejects/Pulps saved** Yes

**Core Stored** Agrium Minesite



Monday, June 11, 2001

Page 1 of 3



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

Drill Hole ID  
AGR-01-079

North 5460748.7

Start Date 4/4/2001

East 366738.7

End Date 4/4/2001

Elevation 241.6

Proposed Depth 100

Actual Depth 99.5

Number of Boxes 21

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	9.5 m	9.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	21 %
9.5 m	38.0 m	28.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 1m in size. Composition varies but granodiorite and mafic units predominate. No recovery from 17.0-18.5m. Lower contact established by the appearance of cretaceous waste.	62 %
38.0 m	62.0 m	24.0 m	706	CRETACEOUS WASTE - Mixture of 60% black organic rich peat, 30% medium to coarse grained silica sand ranging from white to beige and 10% whitish gray clay. Interbedded sections of 1-5m. Most of the peat displays wood chips and is silaceous to some extent. Lower contact established by the appearance of brown residuum.	90 %
62.0 m	77.0 m	15.0 m	720	BROWN RESIDUUM - Dark brown to medium brown to orange brown, clay like / muddy residuum. About 20% rocky rubble. This could be a saprolite zone. Lower contact established by the appearance of gray clay / residuum.	90 %
77.0 m	93.5 m	16.5 m	707	GRAY CLAY - Light gray to white, very homogeneous and locally sandy clay. No visible characteristics in color texture to separate units. This material becomes very sandy after 85m. Some local white sections around 90m. Lower contact established by the appearance of greenish brown residuum.	90 %

Monday, June 11, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

*Drill Hole ID*  
**AGR-01-079**

*North* 5460748.7

*Start Date* 4/4/2001

*East* 366738.7

*End Date* 4/4/2001

*Elevation* 241.6

*Proposed Depth* 100

*Actual Depth* 99.5

*Number of Boxes* 21

From	To	Length	Lithological Code	Description	% Recovery
93.5 m	99.5 m	6.0 m	720	BROWN RESIDUUM .. Dark brown to medium brown to orange brown, sandy / muddy residuum. About 20% rocky rubble. This could be a saprolite zone. 99.50m = EOH..	95 %

PH 141

# Agrium

Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

Drill Hole ID  
AGR-01-080

North 5461151  
East 367644.6

Start Date 4/25/2001  
End Date 4/26/2001

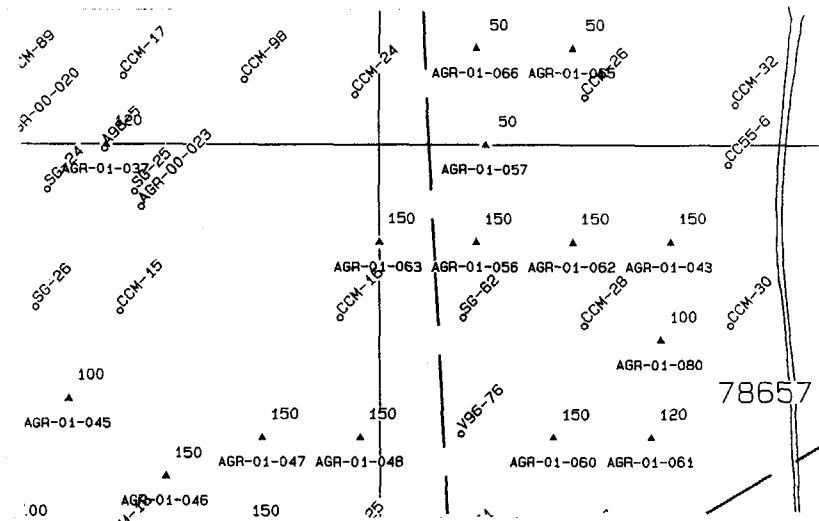
Elevation 251.3

Proposed Depth 100

Actual Depth 117.5

Number of Boxes 20

Logged By P. Marengi      Date Logged 5/30/2001  
 Claim number 78657      Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



# Agrium

## Kapuskasing Phosphate Operation

### Exploration Drilling

Project Winter 2001

#### Lithological Descriptions

**Drill Hole ID**  
AGR-01-080

**North** 5461151  
**East** 367644.6

**Start Date** 4/25/2001  
**End Date** 4/26/2001

**Elevation** 251.3

**Proposed Depth** 100

**Actual Depth** 117.5

**Number of Boxes** 20

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	5.0 m	5.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	30 %
5.0 m	44.0 m	39.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 25cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of gray clay.	13 %
44.0 m	71.0 m	27.0 m	707	GRAY CLAY - Light gray to white, very homogeneous caly mixed with local 1-3m sections of brown residuum. Lower contact established by the appearance of greenish brown residuum.	70 %
71.0 m	111.5 m	40.5 m	720	BROWN RESIDUUM - Tan brown to medium brown, sandy / muddy and locally rocky residuum. Local 1-3m sections of gray and purple residuum. Lower contact established by the appearance of sovite.	85 %
111.5 m	117.5 m	6.0 m	711	SOVITE -Light gray, fine grained matrix containing up to 15% medium grained (up to 2mm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 117.50m = EOH.	100 %

Monday, June 11, 2001

Page 2 of 2

**Agrium**

Kapuskasing Phosphate Operation  
Exploration Drilling

Project Winter 2001

*PK M.*

Drill Hole ID  
AGR-01-081

North 5460998.1

Start Date 4/26/2001

East 367579.3

End Date 4/27/2001

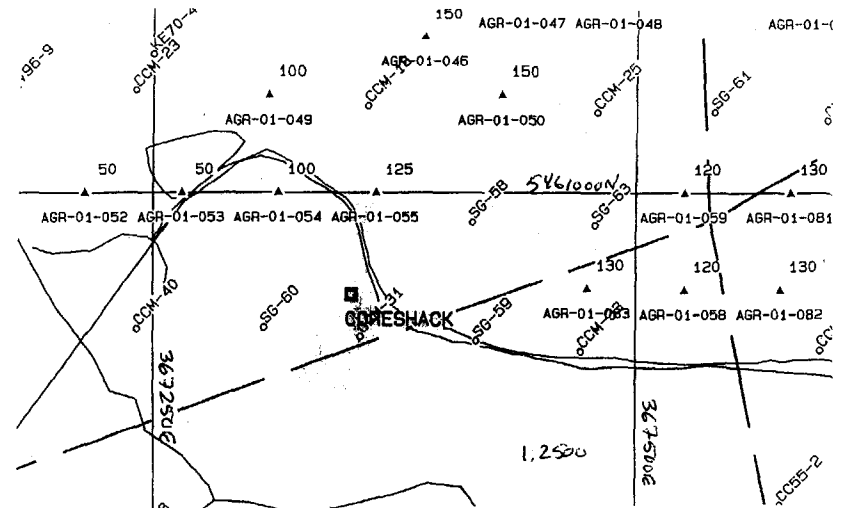
Elevation 247.2

Proposed Depth 130

Actual Depth 92

Number of Boxes 17

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 77326 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Monday, June 11, 2001

Page 1 of 2

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID

AGR-01-081

North 5460998.1

East 367579.3

Start Date 4/26/2001

End Date 4/27/2001

Elevation 247.2

Proposed Depth 130

Actual Depth 92

Number of Boxes 17

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	27.0 m	27.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	19 %
27.0 m	45.0 m	18.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 25cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum / clinochlore.	17 %
45.0 m	71.0 m	26.0 m	720	BROWN RESIDUUM - Tan brown to medium brown to orange brown to greenish brown, sandy / muddy and locally rocky residuum. Local 1-3m sections of green clinochlore. Lower contact established by the appearance of weathered pyroxenite.	75 %
71.0 m	92.0 m	21.0 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm). 92.0m = EOH.	100 %

Monday, June 11, 2001

Page 2 of 2

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PK M-1*

**Drill Hole ID  
AGR-01-082**

North 5460950.7

Start Date 4/27/2001

East 367576.8

End Date 4/28/2001

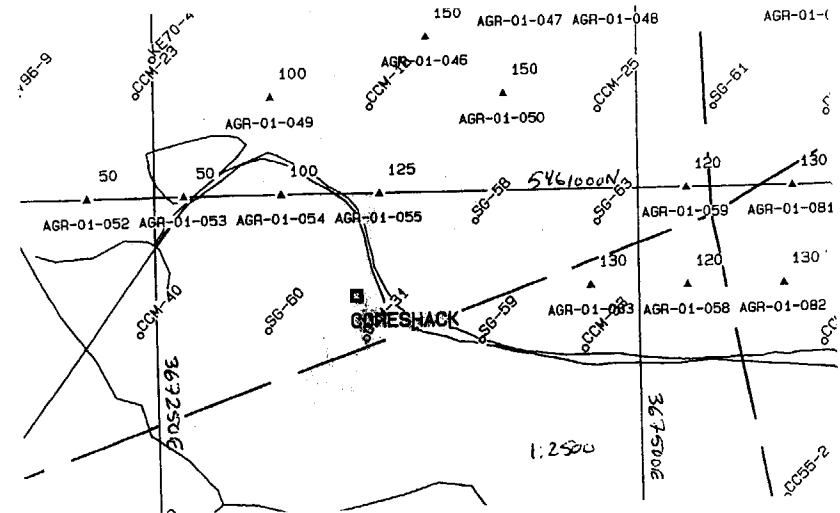
Elevation 245.8

Proposed Depth 130

Actual Depth 74

Number of Boxes 14

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 77326 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Monday, June 11, 2001

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

Drill Hole ID  
AGR-01-082

North 5460950.7

Start Date 4/27/2001

East 367576.8

End Date 4/28/2001

Elevation 245.8

Proposed Depth 130

Actual Depth 74

Number of Boxes 14

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	29.0 m	29.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	14 %
29.0 m	38.0 m	9.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum / clinochlore.	23 %
38.0 m	68.8 m	30.8 m	720	BROWN RESIDUUM - Tan brown to medium brown to orange brown to greenish brown, sandy / muddy and locally rocky residuum. Local 1-3m sections of green clinochlore. Lower contact established by the appearance of weathered pyroxenite.	70 %
68.8 m	74.0 m	5.3 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm) and sovite sections. 74.0m = EOH.	100 %

Monday, June 11, 2001

Page 2 of 2



**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

*PH M*

**Drill Hole ID  
AGR-01-083**

North 5460950

Start Date 4/28/2001

East 367475

End Date 4/30/2001

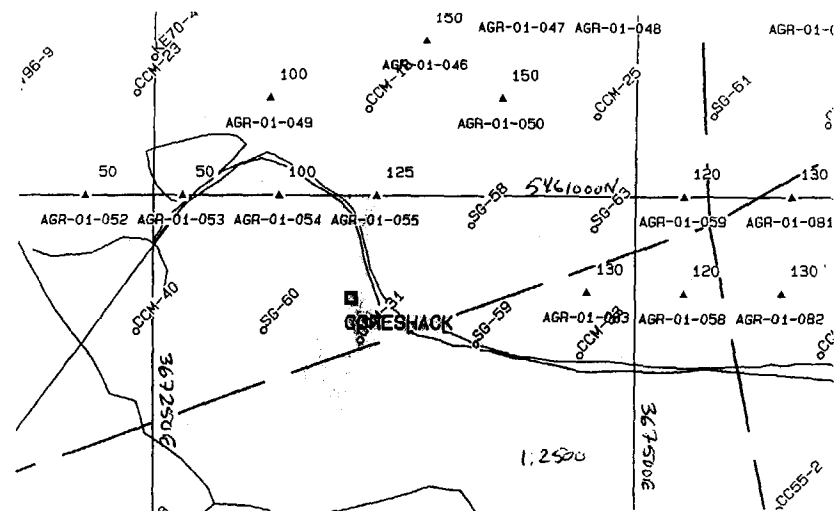
Elevation 244

Proposed Depth 130

Actual Depth 105.5

Number of Boxes 16

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 78659 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Monday, June 11, 2001

Page 1 of 2

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project Winter 2001*

*Lithological Descriptions*

**Drill Hole ID**  
**AGR-01-083**

**North** 5460950

**East** 367475

**Elevation** 244

**Proposed Depth** 130

**Actual Depth** 105.5

**Number of Boxes** 16

**Start Date** 4/28/2001

**End Date** 4/30/2001

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	50.0 m	50.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 35cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum / clinocllore.	20 %
50.0 m	89.0 m	39.0 m	720	BROWN RESIDUUM - Tan brown to medium brown to , rocky / muddy residuum. Local 1-3m sections of green clinocllore. Lower contact established by the appearance of green mud.	50 %
89.0 m	105.5 m	16.5 m	708	GREEN MUD - Weathered pyroxenite??. Homogeneous, flakey green mud. 105.5m = EOH.	90 %

**Agrium**

**Kapuskasing Phosphate Operation  
Exploration Drilling**

**Project** Winter 2001

*PH 101*

**Drill Hole ID**  
**AGR-01-084**

**North** 5460705

**East** 366679

**Elevation** 241.4

**Proposed Depth** 170

**Actual Depth** 170

**Number of Boxes** 37

**Start Date** 4/30/2001

**End Date** 5/3/2001

**Logged By** P. Marengi

**Date Logged** 5/30/2001

**Claim number** 413702

**Township** Cargill

**Azim** 0

**Dip** -90

**Drilling Contractor** Norex Drilling

**Purpose**

**Results**

**Why hole terminated** Normal termination

**Core Size** HQ

**Casing** No

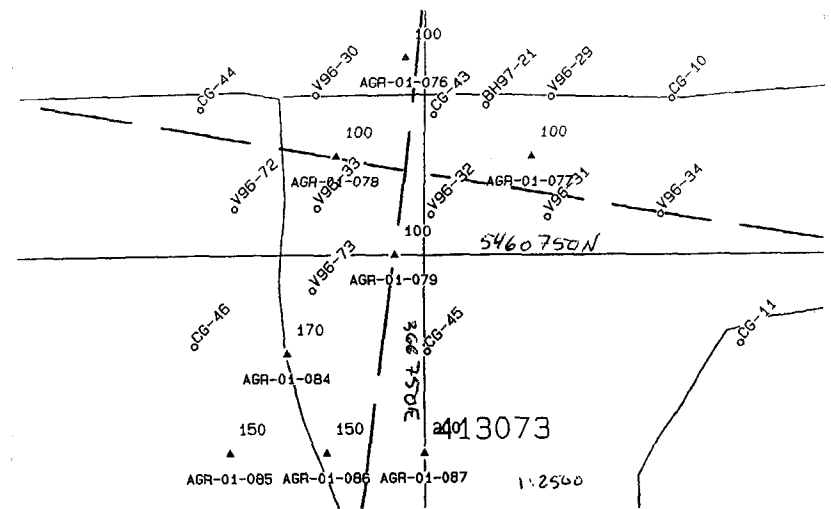
**Hole Cemented** No

**Number of Assays**

**Number of ICP** 0

**Rejects/Pulps saved** Yes

**Core Stored** Agrium Minesite



Monday, June 11, 2001

Page 1 of 3

# Agrium

**Kapuskasing Phosphate Operation**

**Exploration Drilling**

**Project** Winter 2001

**Lithological Descriptions**

**Drill Hole ID**  
**AGR-01-084**

**North** 5460705

**Start Date** 4/30/2001

**East** 366679

**End Date** 5/3/2001

**Elevation** 241.4

**Proposed Depth** 170

**Actual Depth** 170

**Number of Boxes** 37

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	30.0 m	30.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	24 %
30.0 m	39.5 m	9.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 20cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum / clinochlore.	21 %
39.5 m	132.5 m	93.0 m	720	BROWN RESIDUUM - Tan brown to medium brown to orange brown to greenish brown, sandy / muddy and locally clay like residuum. Local 1-3m sections of lime green / deep purple mottled minerals (hematite/epidote?). Local 0.5m sections of sovite rock. Local 0.5m sections of chlorite rich mud. Lower contact established by the appearance of weathered pyroxenite ?.	80 %
132.5 m	158.0 m	25.5 m	708	GREEN MUD - Dark green, chlorite rich, sandy mud. Locally hard rocky residuum. Weathered pyroxenite??. Lower contact established by the appearance of pyroxenite rock.	80 %
158.0 m	165.5 m	7.5 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm).	100 %

Monday, June 11, 2001

Page 2 of 3

# Agrium

*Kapuskasing Phosphate Operation*

*Exploration Drilling*

*Project* Winter 2001

*Lithological Descriptions*

***Drill Hole ID***  
**AGR-01-084**

*North* 5460705

*Start Date* 4/30/2001

*East* 366679

*End Date* 5/3/2001

*Elevation* 241.4

*Proposed Depth* 170

*Actual Depth* 170

*Number of Boxes* 37

From	To	Length	Lithological Code	Description	% Recovery
165.5 m	170.0 m	4.5 m	711	SOVITE -Light gray, fine grained matrix containing up to 15% medium grained (up to 2mm) black magnetite / mica / chlorite / po xtals. No visible weathering. Sub - vertical schistosity. 170.00m = EOH.	100 %

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

*PK M.*

Drill Hole ID  
AGR-01-085

North 5460650.9

Start Date 5/4/2001

East 366649.2

End Date 5/5/2001

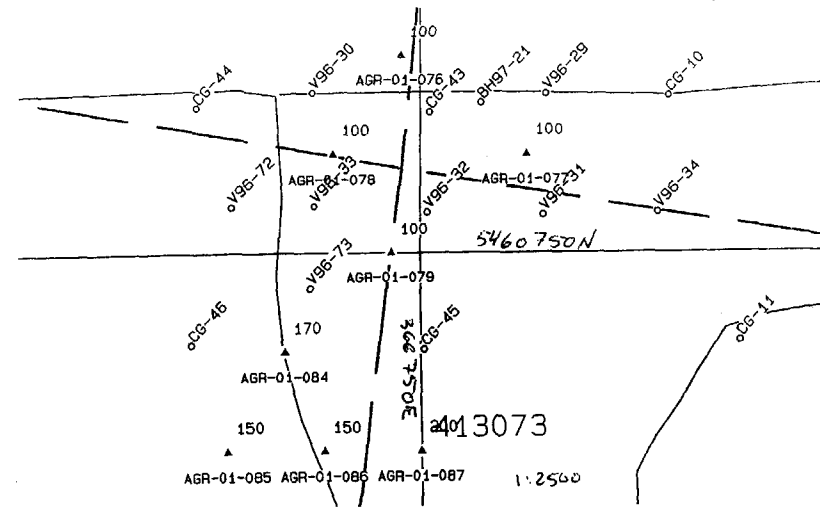
Elevation 241.7

Proposed Depth 150

Actual Depth 147.5

Number of Boxes 33

Logged By P. Marengi  
Date Logged 5/30/2001  
Claim number 413702  
Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Monday, June 11, 2001

# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

Drill Hole ID  
AGR-01-085

North 5460650.9

Start Date 5/4/2001

East 366649.2

End Date 5/5/2001

Elevation 241.7

Proposed Depth 150

Actual Depth 147.5

Number of Boxes 33

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	11.0 m	11.0 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	8 %
11.0 m	39.5 m	28.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 50cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum / clinchlore.	21 %
39.5 m	65.0 m	25.5 m	720	BROWN RESIDUUM - Tan brown to medium brown to orange brown to greenish brown, sandy / muddy and locally clay like residuum. Lower contact established by the appearance of weathered pyroxenite ?.	60 %
65.0 m	104.0 m	39.0 m	708	GREEN MUD - Dark green, chlorite rich, sandy mud. Locally hard rocky residuum. Weathered pyroxenite??. Lower contact established by the appearance of pyroxenite rock.	75 %
104.0 m	147.5 m	43.5 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm). Banding @ 45 deg. To the core axis. 147.50m = EOH	100 %

Monday, June 11, 2001

Page 2 of 2

*PL M-1*

# Agrium

**Kapuskasing Phosphate Operation  
Exploration Drilling**

Project Winter 2001

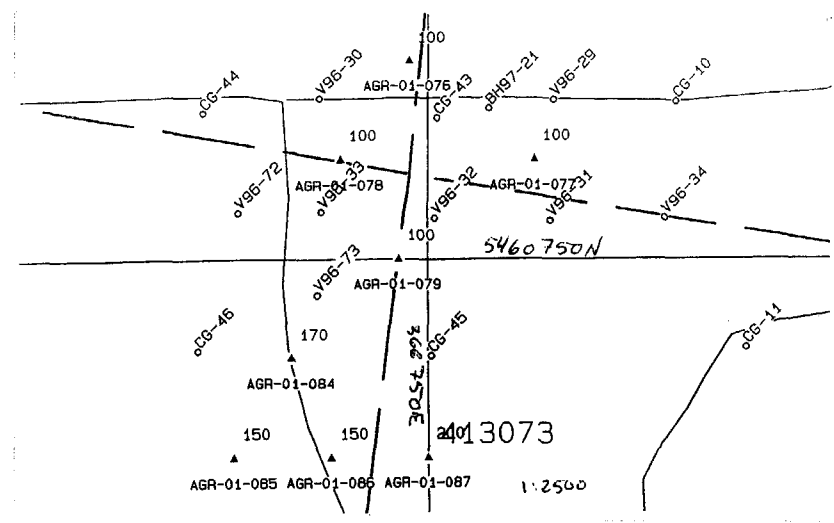
**Drill Hole ID  
AGR-01-086**

North 5460653.3  
East 366699.8

Start Date 5/6/2001  
End Date 5/7/2001

Elevation 240  
Proposed Depth 150  
Actual Depth 144.5  
Number of Boxes 28

Logged By P. Marengi Date Logged 5/30/2001  
Claim number 413702 Township Cargill  
Azim 0  
Dip -90  
Drilling Contractor Norex Drilling  
Purpose  
Results  
Why hole terminated Normal termination  
Core Size HQ  
Casing No  
Hole Cemented No  
Number of Assays  
Number of ICP 0  
Rejects/Pulps saved Yes  
Core Stored Agrium Minesite



Monday, June 11, 2001

Page 1 of 2



# Agrium

## Kapuskasing Phosphate Operation Exploration Drilling

Project Winter 2001

### Lithological Descriptions

**Drill Hole ID**  
**AGR-01-086**

**North** 5460653.3 **Start Date** 5/6/2001

**East** 366699.8 **End Date** 5/7/2001

**Elevation** 240

**Proposed Depth** 150

**Actual Depth** 144.5

**Number of Boxes** 28

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	9.5 m	9.5 m	714	VARVED CLAY - Brown, homogeneous, semi - layered, firm clay. Lower contact established by the appearance of pebbles and boulders.	21 %
9.5 m	45.5 m	36.0 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 25cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown residuum / clinochlore.	17 %
45.5 m	131.0 m	85.5 m	720	BROWN RESIDUUM - Tan brown to medium brown to orange brown to dark chocolate brown, sandy / muddy and locally clay like residuum. Local deep purple mineral in vein like structures (102.5-113m). Lime green, flaky mineral (fuchite?) but looks like epidote throughout. Local chlorite rich sections. Lower contact established by the appearance of pyroxenite.	75 %
131.0 m	144.5 m	13.5 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm). Banding @ 45 deg. To the core axis. 144.50m = EOH	100 %

Monday, June 11, 2001

Page 2 of 2

**Agrium**  
 Kapuskasing Phosphate Operation  
 Exploration Drilling

Project Winter 2001

*PK M71*

Drill Hole ID  
 AGR-01-087

North 5460651.1

Start Date 5/7/2001

East 366750.2

End Date 5/10/2001

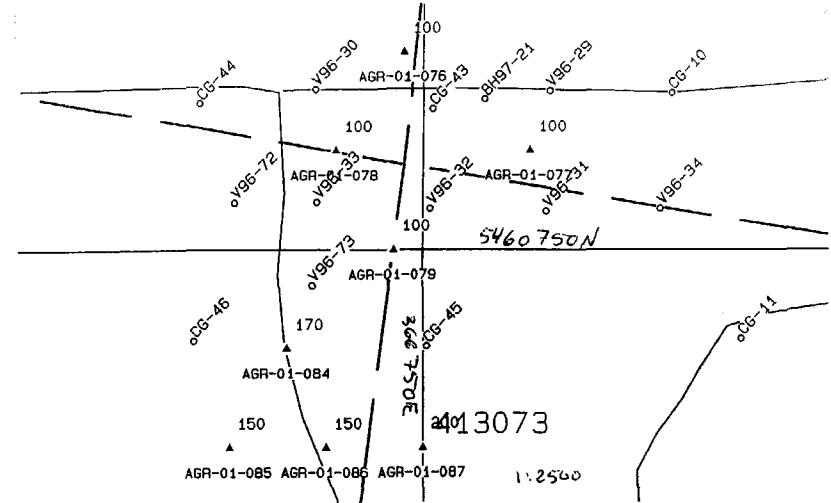
Elevation 240.4

Proposed Depth 200

Actual Depth 213.5

Number of Boxes 46

Logged By P. Marengi Date Logged 5/30/2001  
 Claim number 413703 Township Cargill  
 Azim 0  
 Dip -90  
 Drilling Contractor Norex Drilling  
 Purpose  
 Results  
 Why hole terminated Normal termination  
 Core Size HQ  
 Casing No  
 Hole Cemented No  
 Number of Assays  
 Number of ICP 0  
 Rejects/Pulps saved Yes  
 Core Stored Agrium Minesite



Monday, June 11, 2001

Page 1 of 2

# Agrium

Kapuskasing Phosphate Operation

Exploration Drilling

Project Winter 2001

Lithological Descriptions

**Drill Hole ID**

**AGR-01-087**

**North** 5460651.1

**East** 366750.2

**Elevation** 240.4

**Proposed Depth** 200

**Actual Depth** 213.5

**Number of Boxes** 46

**Start Date** 5/7/2001

**End Date** 5/10/2001

From	To	Length	Lithological Code	Description	% Recovery
0.0 m	48.5 m	48.5 m	717	BOULDER / BASAL TILL - Light gray, silty / muddy matrix containing up to 15% pebbles and boulders ranging from 5mm to 40cm in size. Composition varies but granodiorite and mafic units predominate. Lower contact established by the appearance of brown clay.	11 %
48.5 m	104.0 m	55.5 m	707	GREEN / BROWN CLAY - Light brown to tan brown to reddish brown to grayish brown clay. The fresh center of the core is often white (kaolinite) with black weathered specks of magnetite or manganese. Locally the clay turns gray over 3m. Locally very dark rusty brown. Speckled texture on fresh breaks. Lower contact established by the appearance of brown residuum.	85 %
104.0 m	196.3 m	92.3 m	720	BROWN RESIDUUM - Tan brown to medium brown to reddish brown to dark chocolate brown, sandy / muddy and locally clay like residuum. Local deep purple mineral in vein like structures (102.5-113m). Lime green, flaky mineral (fuchite?) but looks like epidote throughout. Local chlorite rich sections. Lower contact established by the appearance of pyroxenite.	85 %
196.3 m	213.5 m	17.3 m	712	PYROXENITE - Very dark green, partially weathered to a sandy muddy consistency but becoming more fresh with depth. Locally visible chlorite / pyroxene / feldspar xtals (1-4mm). Banding @ 45 deg. To the core axis. 213.50m = EOH	85 %

Monday, June 11, 2001

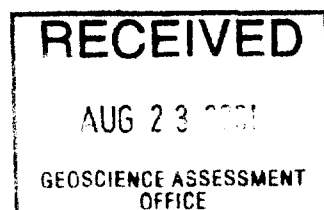
Page 2 of 2

2. 21969

2. 219 69

**APPENDIX II**

**MAPS AND SECTIONS**



42G07SW2013 2.21969 CARGILL



Ministry of  
Northern Development  
and Mines

Ministère du  
Développement du Nord  
et des Mines



Date: 2001-SEP-21

GEOSCIENCE ASSESSMENT OFFICE  
933 RAMSEY LAKE ROAD, 6th FLOOR  
SUDBURY, ONTARIO  
P3E 6B5

VIRIDIAN INC.  
3500, 10180 - 101 STREET  
EDMONTON, ALBERTA  
T5J 3S4 CANADA

Tel: (888) 415-9845  
Fax: (877) 670-1555

**Submission Number:** 2.21969  
**Transaction Number(s):** W0160.30621

Dear Sir or Madam

**Subject: Approval of Assessment Work**

We have approved your Assessment Work Submission with the above noted Transaction Number(s). The attached Work Report Summary indicates the results of the approval.

At the discretion of the Ministry, the assessment work performed on the mining lands noted in this work report may be subject to inspection and/or investigation at any time.

If you have any question regarding this correspondence, please contact JIM MCAULEY by email at james.mcauley@ndm.gov.on.ca or by phone at (705) 670-5855.

Yours Sincerely,

A handwritten signature in black ink, appearing to read "Ron Gashinski".

Ron Gashinski  
Supervisor, Geoscience Assessment Office

**Cc:** Resident Geologist

Reno Pressacco  
(Agent)

Viridian Inc.  
(Assessment Office)

Assessment File Library

Viridian Inc.  
(Claim Holder)



MINISTRY OF  
NORTHERN DEVELOPMENT  
AND MINES  
PROVINCIAL MINING  
REGISTRY'S OFFICE

**MINING LAND TENURE  
MAP**

Date / Time of Issue Aug 23 2001 12:18h Eastern

TOWNSHIP / AREA PLAN  
CARGILL G-0860

ADMINISTRATIVE DISTRICTS / DIVISIONS  
Mining Division Porcupine  
Land Titles/Registry Division COCHRANE  
Ministry of Natural Resources District HEARST

**TOPOGRAPHIC**

- Administrative Boundaries
- Temples
- Concession Lot
- Provisional Fee
- Open Mine
- Oil, PG and Pip
- Canals
- Canals - Approx. Ass'n/D. Pressure
- Shed
- Wells - Surface
- Railway
- Road
- Tier
- Natural Gas Pipeline
- Hydro Line
- Communication Line
- Wooded Area
- Mountain, Cultural, Historical, State, Canal

**LAND TENURE**

- FORMAL PERMITS**
- Surface and Mining Rights
  - Surface Rights Only
  - Mining Rights Only
  - Leasehold Permits
  - Surface and Mining Rights
  - Surface Rights Only
  - Mining Rights Only
  - Licence of Occupation
  - Area Not Searched
  - Surface and Mining Rights
  - Surface Rights Only
  - Mining Rights Only
- LAND TENURE WITHDRAWALS**
- Land Use Permit
  - Clearing Consent
  - Water Permit/Less Agreement
  - Mining Claims
- LAND TENURE WITHDRAWALS**
- Area Withdrawn From Disposition
  - Mining Act Withdrawal Type
  - Surface and Mining Rights Withdrawal
  - Mining Rights Only Withdrawal
  - Surface and Mining Rights Withdrawal
  - Water Permit/Less Agreement Withdrawal
  - Surface Rights Only Withdrawal
  - Mining Rights Only Withdrawal

**LAND TENURE WITHDRAWALS**

- Area Withdrawn From Disposition
- Mining Act Withdrawal Type
- Surface and Mining Rights Withdrawal
- Mining Rights Only Withdrawal
- Surface and Mining Rights Withdrawal
- Water Permit/Less Agreement Withdrawal
- Surface Rights Only Withdrawal
- Mining Rights Only Withdrawal

**IMPORTANT NOTICES**

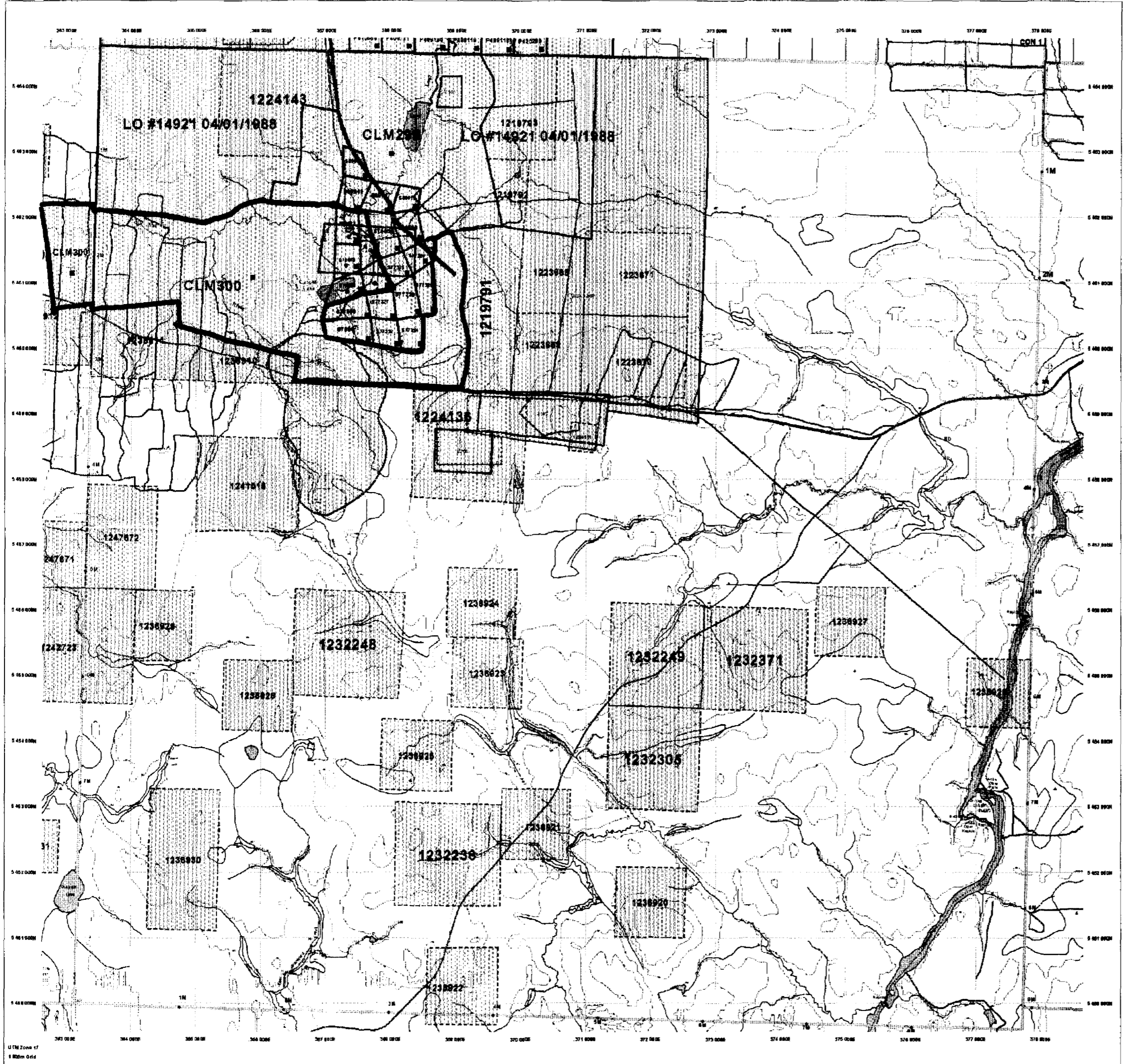


**LAND TENURE WITHDRAWAL DESCRIPTIONS**

Number	Type	Date	Description
2143	Water	Jan 1 2001	PETROBRAS APPLICATION FOR AGGREGATE PERMIT
2146	Water	Jan 1 2001	AGGREGATE PERMIT NO. 2000
2187	Water	Jan 1 2001	PENDING APPLICATION UNDER THE PUBLIC LANDS ACT NOTICE RECEIVED P.J.J. QUACHS UNLIMITED DEC ESTICONE MARSH PROJECTS
2190	Water	Jan 1 2001	AGGREGATE PERMIT NO. 2000
WP 1800	Water	Jan 22 1999	SEC. 55 WP. 1800 2200000-5 199100
WP 2207	Water	Jan 1 1997	SEC. 55 WP. 2207 2200000-5 199100
2200	Water	Jan 1 2001	AGGREGATE PERMIT NO. 2000

**IMPORTANT NOTICES**

Areas subject to special regulations, restrictions or conditions used to protect normal processing, mining and mineral development activities.



2.21969  
PDRILL

200



426075N2013 2.21969 CARGILL

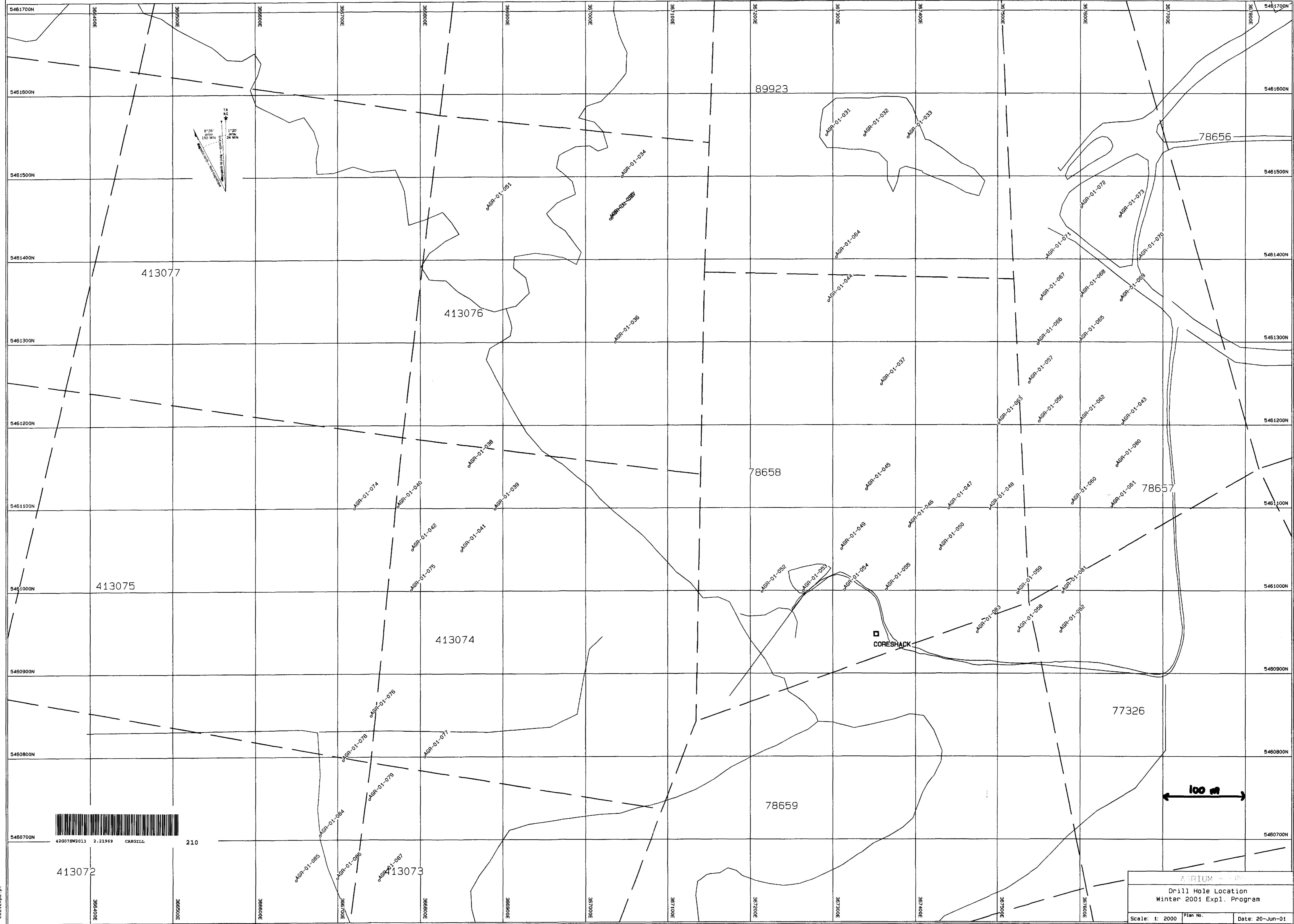
This map is an informational map and does not constitute a contract. It is for informational purposes only. The Ministry of Northern Development and Mines is not responsible for any errors or omissions. The map is not to be used for legal purposes. The map is not to be used for legal purposes. The map is not to be used for legal purposes.

**General Information and Limitations**

Contact Information:  
Provincial Mining Registry's Office  
1000 Queen Street West  
Toronto, ON M5G 1S2  
Tel: 416-325-1500  
Fax: 416-325-1501

Map Scale: 1:50,000  
Projection: UTM (Zone 18E)  
Topographic Data Source: Land Information Ontario  
Mining Land Tenure Data Source: Provincial Mining Registry's Office

This map is an informational map and does not constitute a contract. It is for informational purposes only. The Ministry of Northern Development and Mines is not responsible for any errors or omissions. The map is not to be used for legal purposes. The map is not to be used for legal purposes. The map is not to be used for legal purposes.



2.21969

ARIZONA  
 Drill Hole Location  
 Winter 2001 Expl. Program  
 Scale: 1: 2000 Plan No. Date: 20-Jun-01



42G07SW2013 2.21969 CARGILL 210

413072

413073

413074

413075

413076

413077

CORESHACK

78658

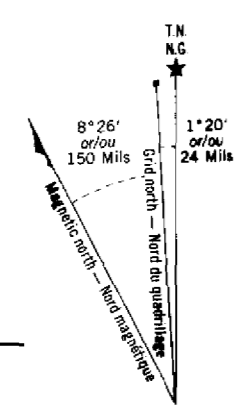
78659

77326

78657

89923

78655



2001exp.d1



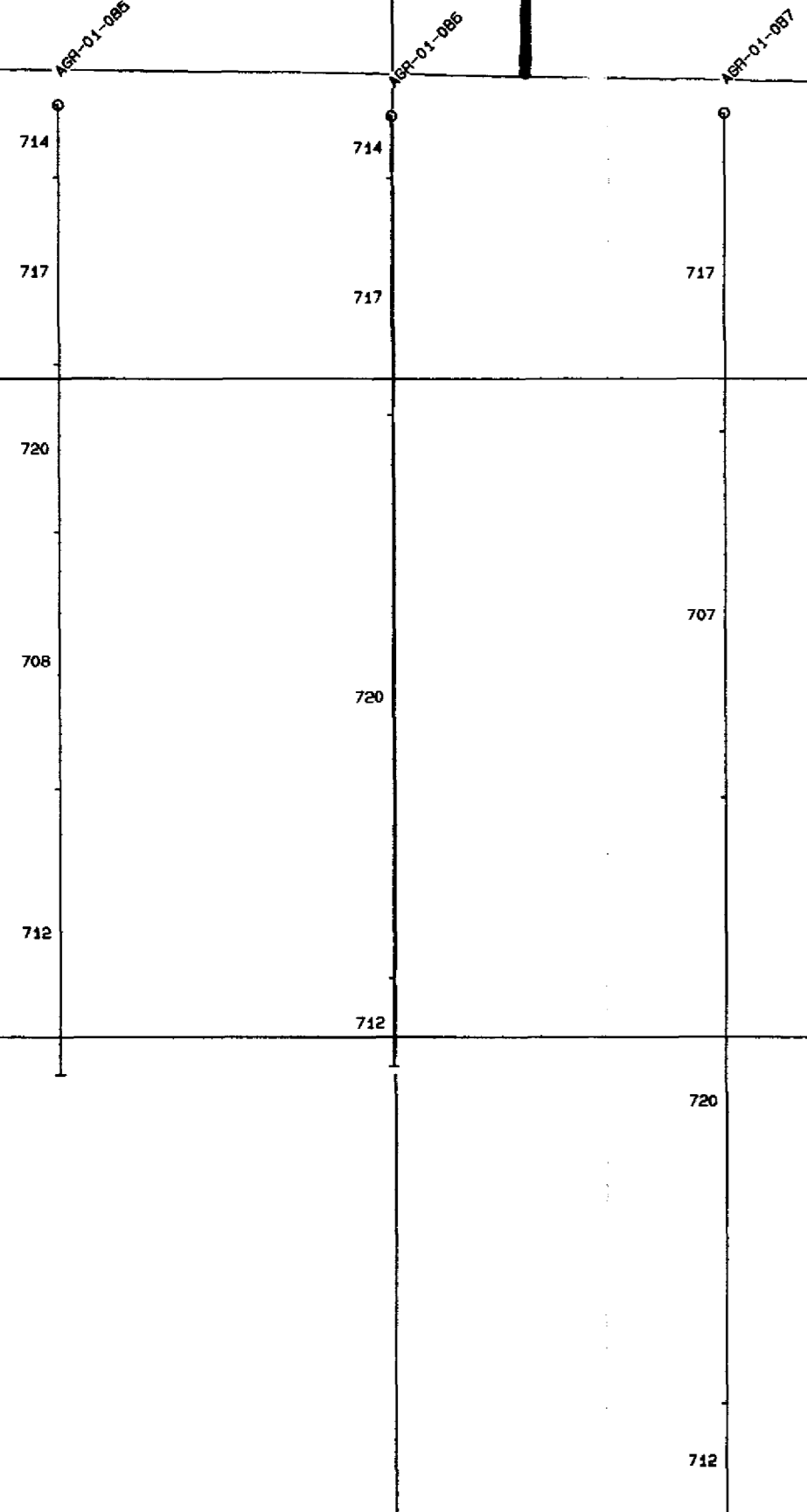
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	A (GREY) ORE
703	B1 ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUAL (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
710	ROCK - GNEISS
711	ROCK - SALT
712	ROCK - PYROXENITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN, VARVED CLAY
715	GREY BROWN LEON CLAY
716	QUARTZ-RICH SANDS
717	BROWN BOULDER FILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LOST CODE / NO RECOVERY / NO SAMPLE

West

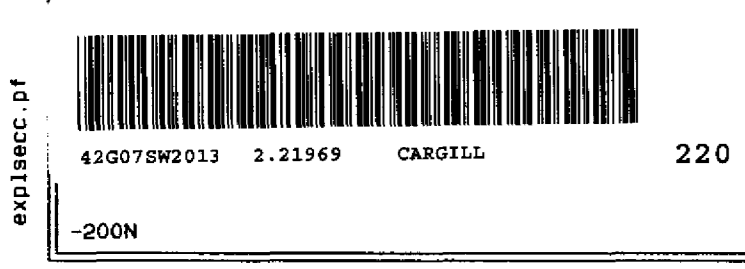
East

Claim 413072

Claim 413073



50 m



Cross Section 5460650  
Looking North  
Scale: 1:1000  
Date: 21-Jun-01

2 21969

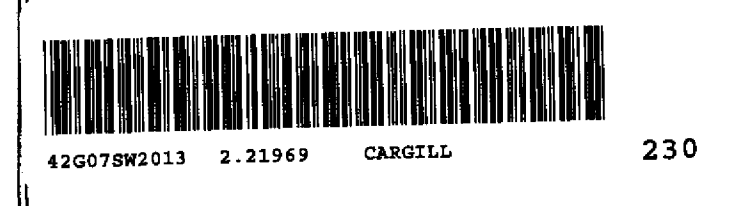
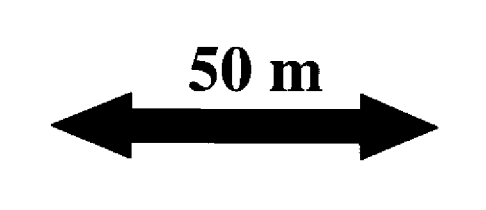
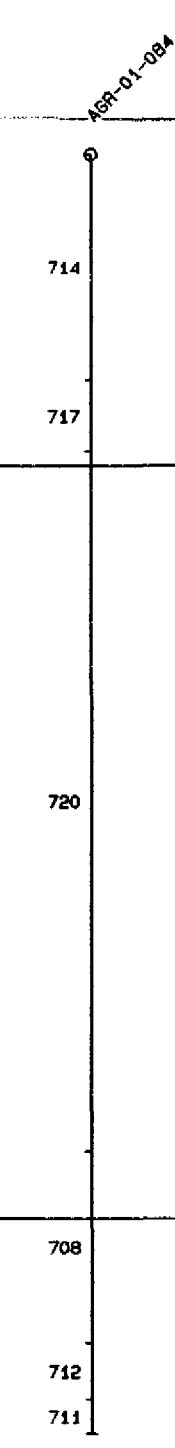
ADMIN  
 KAPUSASING PHOSPHATE OPERATIONS  
 LITHOLOGIC LEGEND  
 LITHOLOGIC CODE MATERIAL TYPE  
 CRETACEOUS:  
 701 A ORE  
 702 A (OREY) ORE  
 703 B1 ORE  
 704 B2 ORE / GREEN MICA CLAY  
 705 WASTE (SILICA SANDS)  
 706 WASTE (PEAT & ORGANICS)  
 707 WASTE (ALL CLAYS)  
 708 WASTE (UNDIFFERENTIATED / OTHER)  
 709 RESIDUUM (UNDIFFERENTIATED)  
 PROTEROZOIC:  
 710 ROCK - GNEISS  
 711 ROCK - GARNETGITE  
 712 ROCK - SCHIST  
 713 ROCK - PYRENITE  
 714 ROCK - MISC. / UNDIFFERENTIATED  
 PREISTOCENE:  
 715 BROWN VARVED CLAY  
 716 GREY SANDY (LESLIA) CLAY  
 717 QUARTZ-RICH SANDS  
 718 BROWN SOLID TILL  
 719 OTHER / UNDIFFERENTIATED  
 GENERAL CODES:  
 750 LOST CODE / NO RECOVERY / NO SAMPLE

West

East

Claim 413072

Claim 413073



AGRUM - +PO  
 Cross Section 5460700  
 Looking North  
 Scale: 1: 1000 Plan No. Date: 21-Jun-01

2. 21969

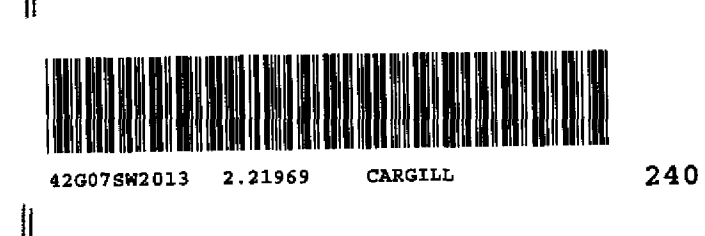
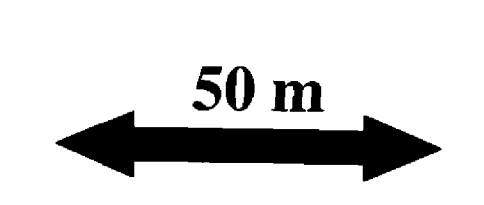
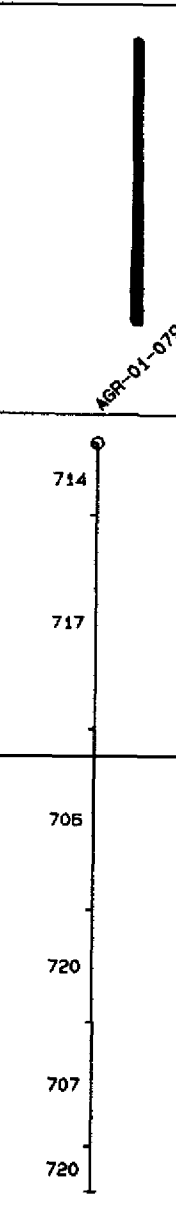
LITHOLOGIC LEGEND	
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	A OREY ORE
703	B1 ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUAL (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
710	ROCK - GNEISS
711	ROCK - AMPHIBOLITE
712	ROCK - SOULITE
713	ROCK - AMPHIBOLITE
714	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
715	BROWN VARIED CLAY
716	GREY SANDS (LEDDA) CLAY
717	GLAZED-RICH SAND
718	BROWN SOILS / MUD
719	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LOST ORE / NO RECOVERY / NO SAMPLE

West

East

Claim 413072

Claim 413073



AGRIUM - RPO  
Cross Section S480750  
Looking North  
Scale: 1: 1000  
Date: 21-Jun-01

21039

LITHOLOGIC LEGEND		MATERIAL TYPE
LITHOLOGIC CODE		
CRETACEOUS:		
701	A ORE	
702	B ORE	
703	B1 ORE	
704	B2 ORE / GREEN MICA CLAY	
705	WASTE (SILICA SANDS)	
706	WASTE (PEAT & ORGANICS)	
707	WASTE (ALL CLAYS)	
708	WASTE (UNDIFFERENTIATED / OTHER)	
709	RESIDUAL (UNDIFFERENTIATED)	
PROTEROZOIC:		
710	ROCK - GNEISS	
711	ROCK - GABBRO	
712	ROCK - DIORITE	
713	ROCK - GRANITE	
714	ROCK - MISC. / UNDIFFERENTIATED	
PLEISTOCENE:		
715	BROWN, VARVED CLAY	
716	GREY SANDY (SILT) CLAY	
717	QUARTZ-RICH SANDS	
718	BROWN SANDS / SILT	
719	OTHER / UNDIFFERENTIATED	
GENERAL CODES:		
720	LOST CORE / NO SAMPLE	

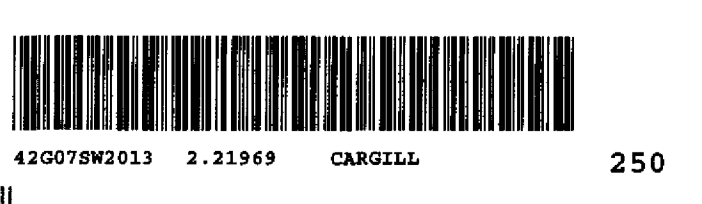
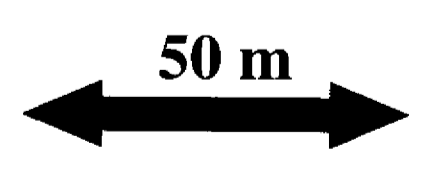
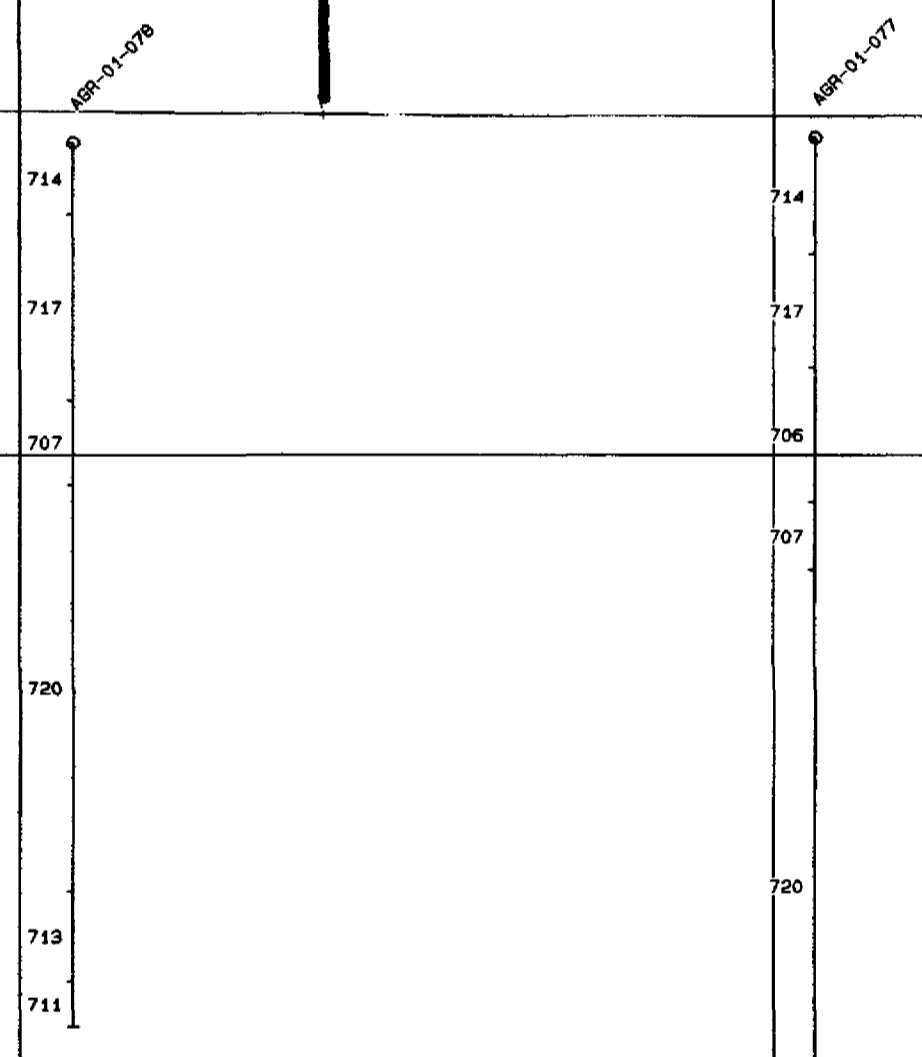
West

East

Claim 413072

Claim 413075

Claim 413074



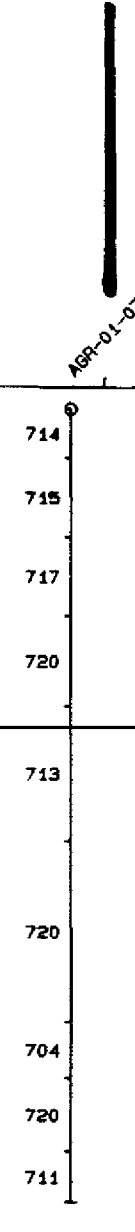
AGRIUM - KPM	
LITHOLOGIC LEGEND	
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	A (GREY) ORE
703	B1 ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (SILICA SANDS)
707	WASTE (SILICA SANDS)
708	WASTE (SILICA SANDS)
709	WASTE (SILICA SANDS)
710	WASTE (SILICA SANDS)
711	WASTE (SILICA SANDS)
712	WASTE (SILICA SANDS)
713	WASTE (SILICA SANDS)
714	WASTE (SILICA SANDS)
715	WASTE (SILICA SANDS)
716	WASTE (SILICA SANDS)
717	WASTE (SILICA SANDS)
718	WASTE (SILICA SANDS)
719	WASTE (SILICA SANDS)
720	WASTE (SILICA SANDS)
721	WASTE (SILICA SANDS)
722	WASTE (SILICA SANDS)
723	WASTE (SILICA SANDS)
724	WASTE (SILICA SANDS)
725	WASTE (SILICA SANDS)
726	WASTE (SILICA SANDS)
727	WASTE (SILICA SANDS)
728	WASTE (SILICA SANDS)
729	WASTE (SILICA SANDS)
730	WASTE (SILICA SANDS)
731	WASTE (SILICA SANDS)
732	WASTE (SILICA SANDS)
733	WASTE (SILICA SANDS)
734	WASTE (SILICA SANDS)
735	WASTE (SILICA SANDS)
736	WASTE (SILICA SANDS)
737	WASTE (SILICA SANDS)
738	WASTE (SILICA SANDS)
739	WASTE (SILICA SANDS)
740	WASTE (SILICA SANDS)
741	WASTE (SILICA SANDS)
742	WASTE (SILICA SANDS)
743	WASTE (SILICA SANDS)
744	WASTE (SILICA SANDS)
745	WASTE (SILICA SANDS)
746	WASTE (SILICA SANDS)
747	WASTE (SILICA SANDS)
748	WASTE (SILICA SANDS)
749	WASTE (SILICA SANDS)
750	WASTE (SILICA SANDS)
751	WASTE (SILICA SANDS)
752	WASTE (SILICA SANDS)
753	WASTE (SILICA SANDS)
754	WASTE (SILICA SANDS)
755	WASTE (SILICA SANDS)
756	WASTE (SILICA SANDS)
757	WASTE (SILICA SANDS)
758	WASTE (SILICA SANDS)
759	WASTE (SILICA SANDS)
760	WASTE (SILICA SANDS)
761	WASTE (SILICA SANDS)
762	WASTE (SILICA SANDS)
763	WASTE (SILICA SANDS)
764	WASTE (SILICA SANDS)
765	WASTE (SILICA SANDS)
766	WASTE (SILICA SANDS)
767	WASTE (SILICA SANDS)
768	WASTE (SILICA SANDS)
769	WASTE (SILICA SANDS)
770	WASTE (SILICA SANDS)
771	WASTE (SILICA SANDS)
772	WASTE (SILICA SANDS)
773	WASTE (SILICA SANDS)
774	WASTE (SILICA SANDS)
775	WASTE (SILICA SANDS)
776	WASTE (SILICA SANDS)
777	WASTE (SILICA SANDS)
778	WASTE (SILICA SANDS)
779	WASTE (SILICA SANDS)
780	WASTE (SILICA SANDS)
781	WASTE (SILICA SANDS)
782	WASTE (SILICA SANDS)
783	WASTE (SILICA SANDS)
784	WASTE (SILICA SANDS)
785	WASTE (SILICA SANDS)
786	WASTE (SILICA SANDS)
787	WASTE (SILICA SANDS)
788	WASTE (SILICA SANDS)
789	WASTE (SILICA SANDS)
790	WASTE (SILICA SANDS)
791	WASTE (SILICA SANDS)
792	WASTE (SILICA SANDS)
793	WASTE (SILICA SANDS)
794	WASTE (SILICA SANDS)
795	WASTE (SILICA SANDS)
796	WASTE (SILICA SANDS)
797	WASTE (SILICA SANDS)
798	WASTE (SILICA SANDS)
799	WASTE (SILICA SANDS)
800	WASTE (SILICA SANDS)

West

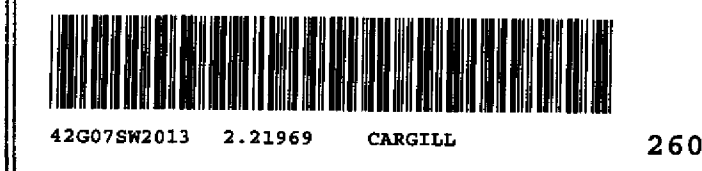
East

Claim 413075

Claim 413074



50 m



AGRIUM - KPM  
Cross Section 5460850  
Looking North  
Scale: 1:1000  
Date: 21-Jun-01

2.21969

KAPUSKASING PHOSPHATE OPERATIONS	
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	B ORE
703	C ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SAND)
706	WASTE (PEAT & ORGANICS)
707	WASTE (SILT CLAY)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
710	ROCK - GNEISS
711	ROCK - BATHOLITE
712	ROCK - SOFT
713	ROCK - PYROXENITE
714	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
715	BROWN VARVED CLAY
716	BROWN SAND / CLAY
717	BROWN SANDER TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LAST CODE / NO RECOVERY / NO SAMPLE

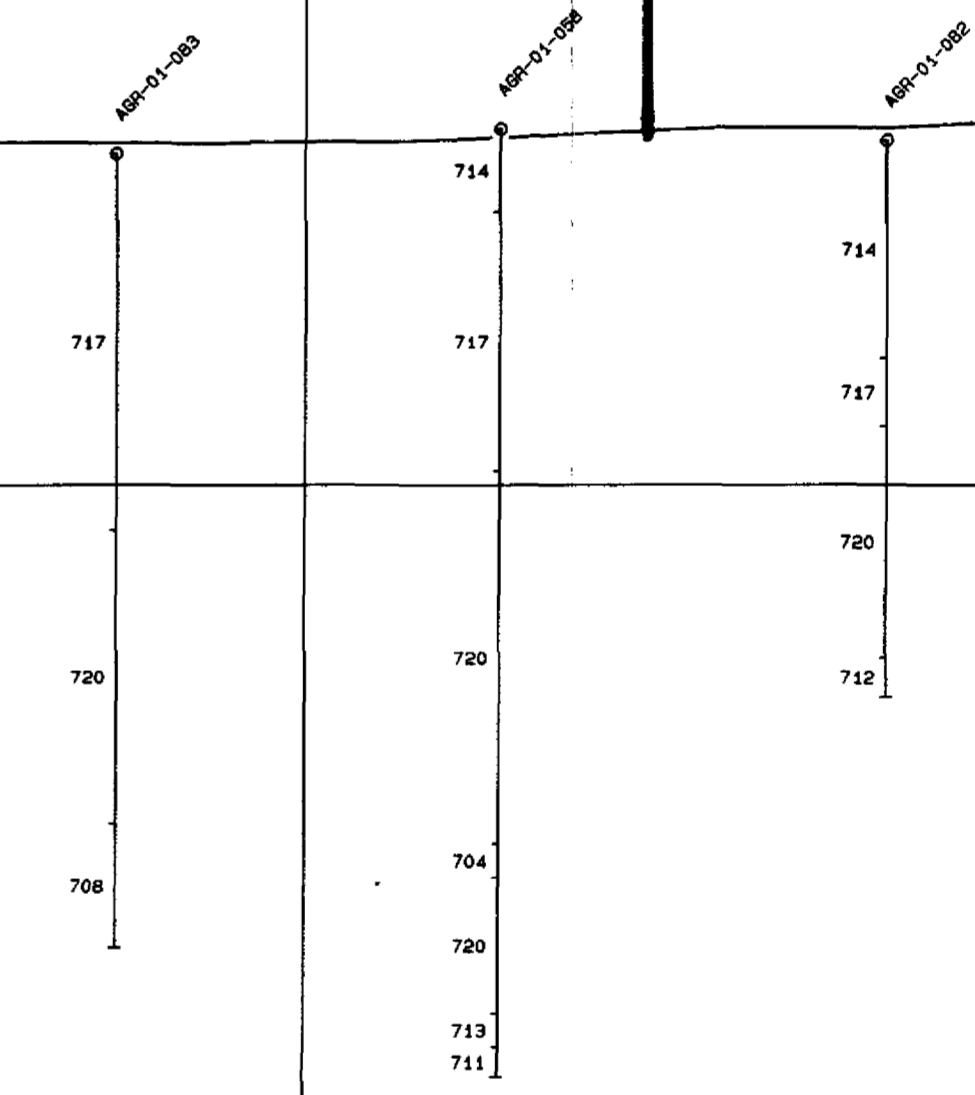
West

East

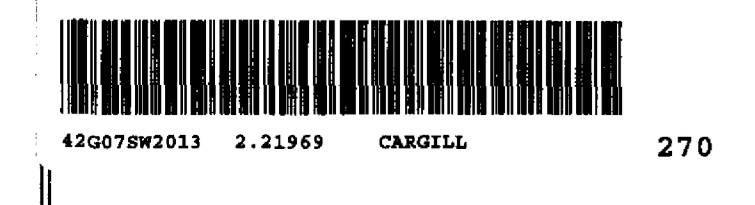
Claim 78658

Claim 78657

Claim 77326



50 m



AGRIUM FERTILIZING PHOSPHATE OPERATIONS LITHOLOGIC LEGEND	
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS</b>	
701	A ORE
702	A (GREY) ORE
703	B1 ORE
704	B2 ORE
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC</b>	
709	ROCK - GNEISS
710	ROCK - GRANULITE
711	ROCK - SOVITTE
712	ROCK - PHYKONITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE</b>	
714	BROWN VARVED CLAY
715	BROWN SANDY SILT CLAY
716	QUARTZ-RICH SANDS
717	BROWN SANDS
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES</b>	
799	LOST CORE / NO RECOVERY / NO SAMPLE

West

East

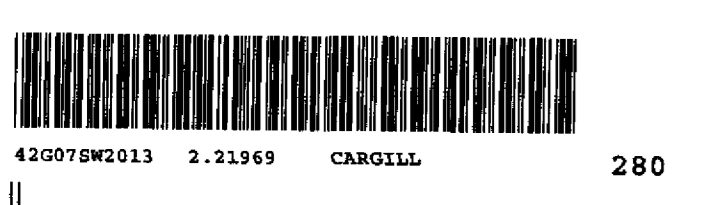
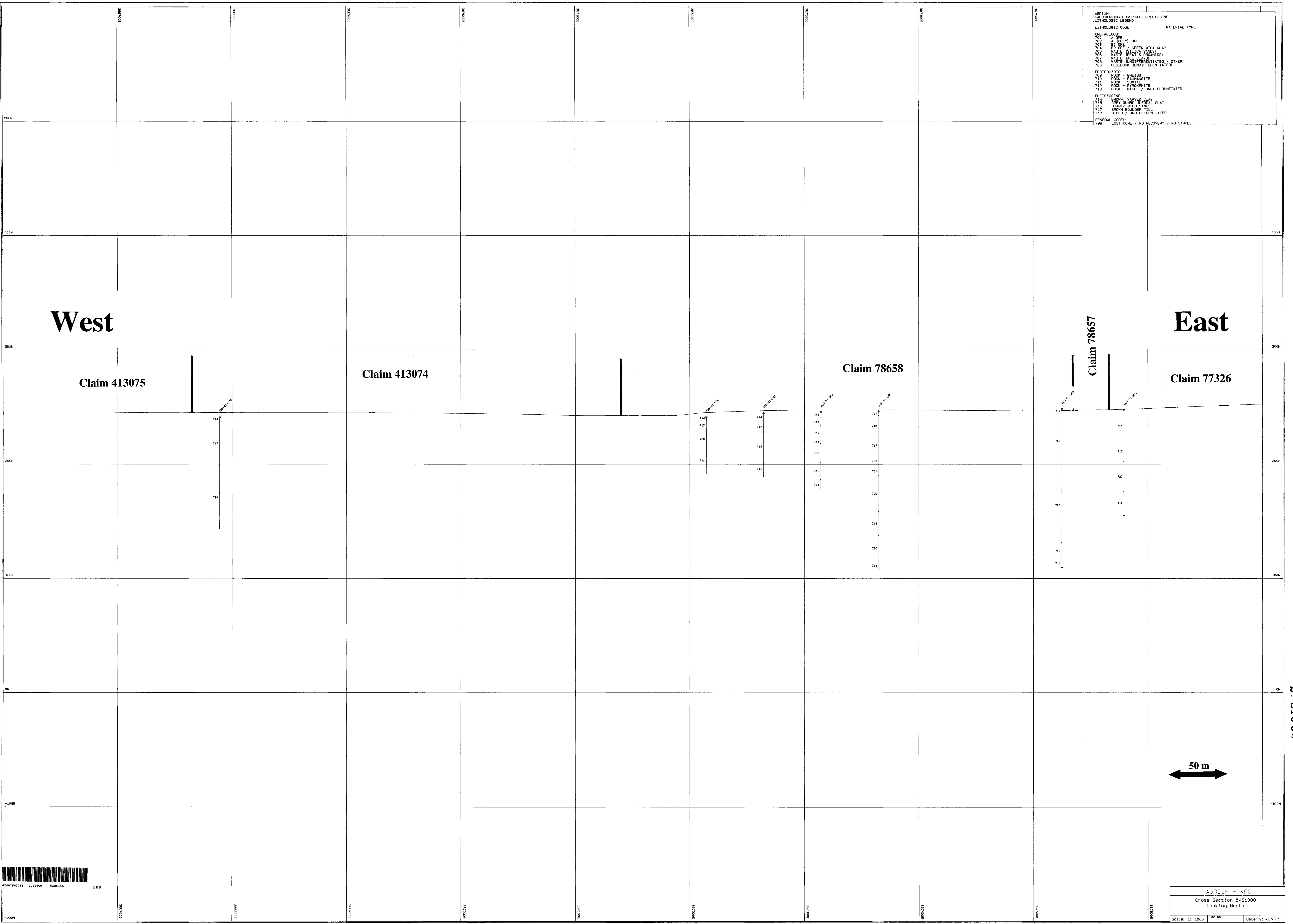
Claim 413075

Claim 413074

Claim 78658

Claim 78657

Claim 77326



50 m

AGRIUM - KPO  
Cross Section S461000  
Looking North  
Scale: 1: 1000  
Date: 21-Jun-01

2 21969

AGRIUM - KANDAKASINO PHOSPHATE OPERATIONS LITHOLOGIC LEGEND	
SYMBOL	MATERIAL TYPE
<b>CRETACEOUS</b>	
701	A ORE
702	B ORE
703	B1 ORE / GREEN MICA CLAY
704	WASTE (SILICA SANDS)
705	WASTE (PEAT & ORGANICS)
706	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
720	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC</b>	
709	ROCK - GNEISS
710	ROCK - AMPHIBOLITE
711	ROCK - SOVITE
712	ROCK - PIRRENITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE</b>	
714	BROWN / VARVED CLAY
715	GREY GUMBO / LEADY CLAY
716	GLAUCO / BLUE SANDS
717	BROWN BOLLER / TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES</b>	
799	LOST CORE / NO RECOVERY / NO SAMPLE

West

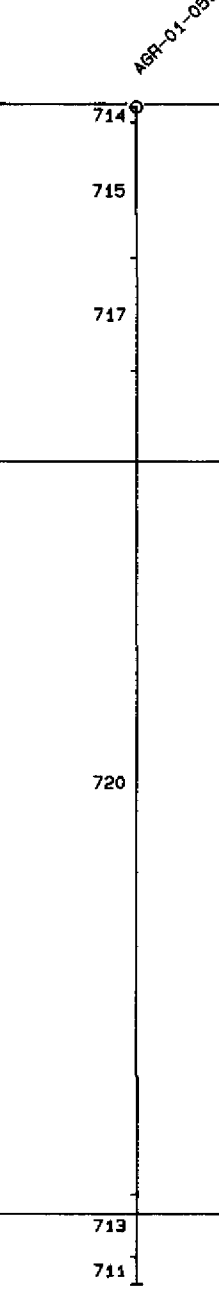
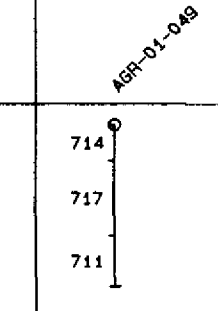
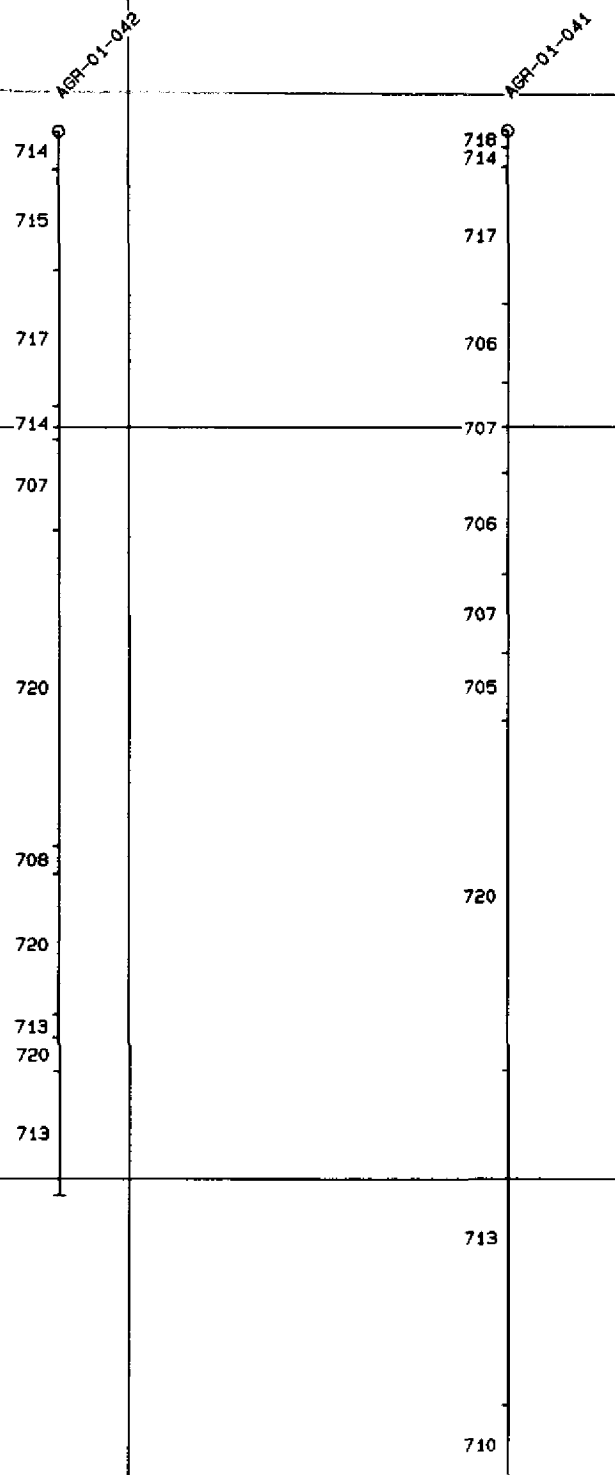
East

Claim 413075

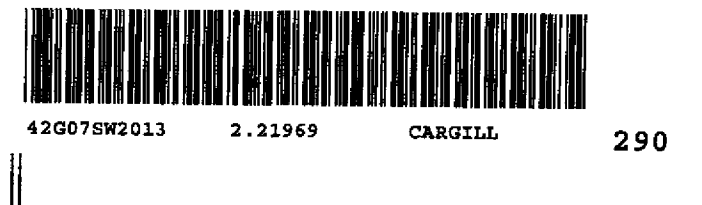
Claim 413074

Claim 78658

Claim 78657



50 m



2 21969



KAPUKASING PHOSPHATE OPERATIONS	
LITHOLOGIC LEGEND	
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	A (GREY) ORE
703	B ORE
704	B5 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
709	ROCK - GNEISS
710	ROCK - AMPHIBOLITE
711	ROCK - SCHIST
712	ROCK - PYROXENITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN VARVED CLAY
715	GREY SAND / LERDAL CLAY
716	QUARTZ-RICH SANDS
717	BROWN SOLICER TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LOST CODE / NO RECOVERY / NO SAMPLE

West

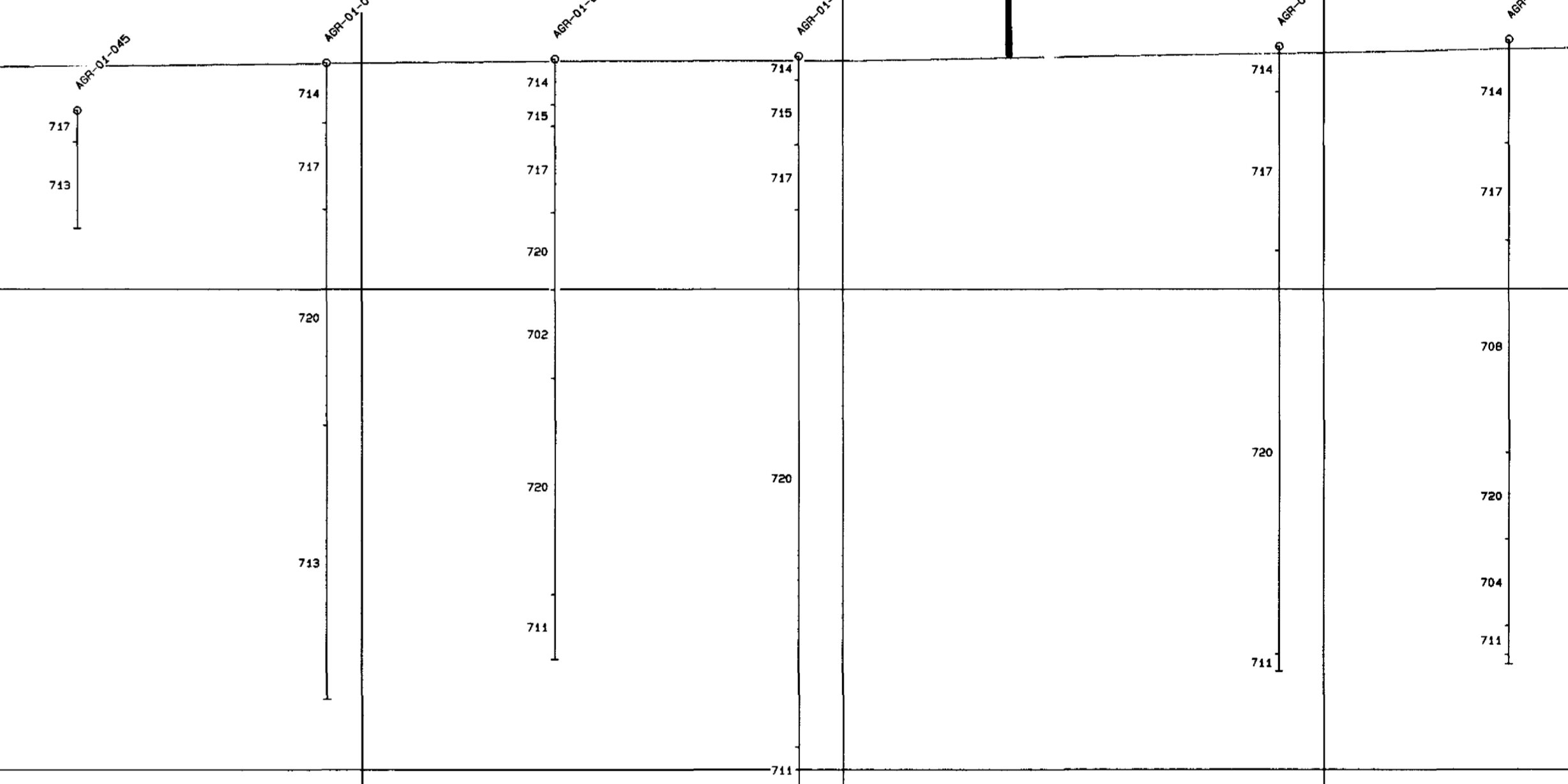
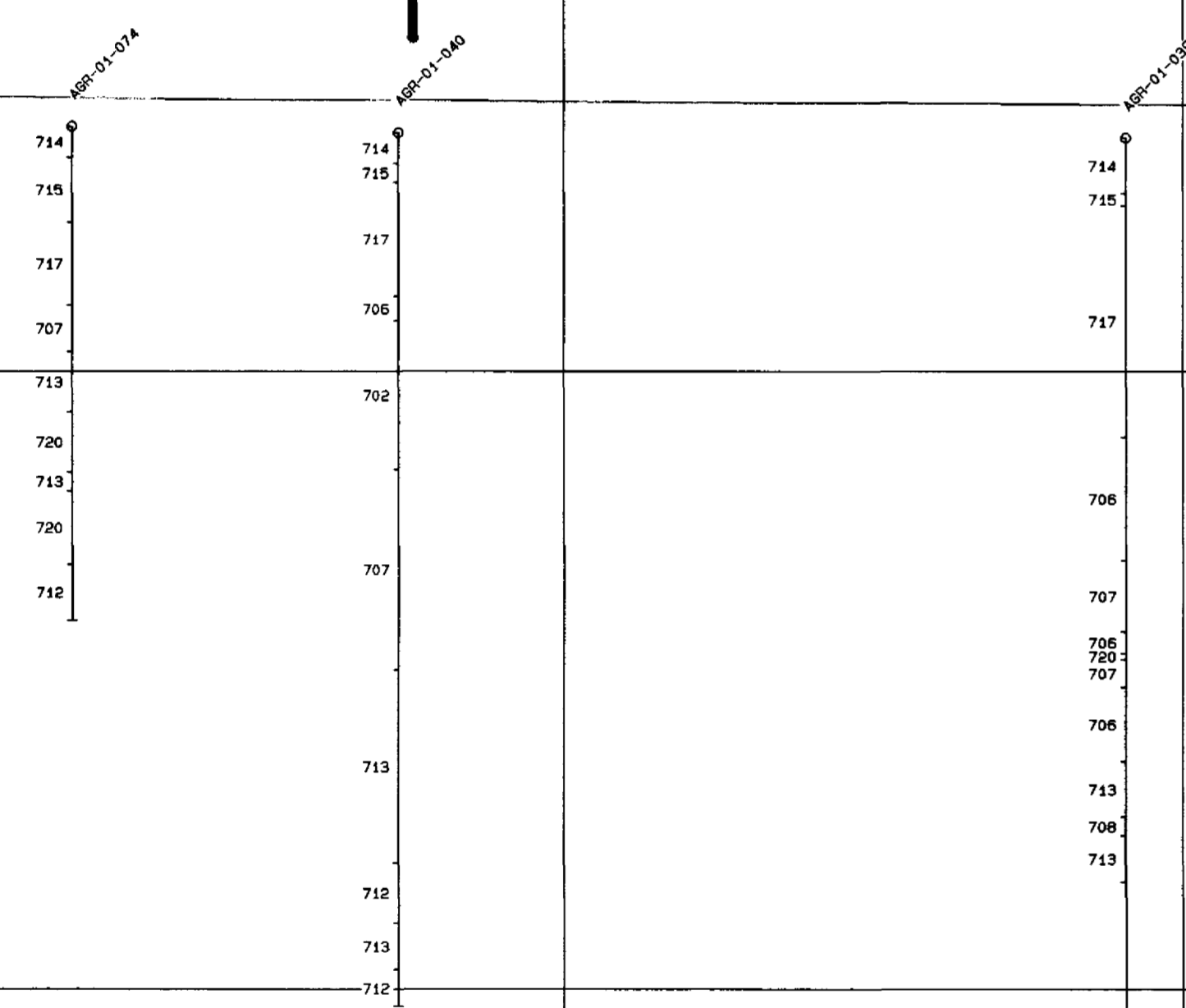
East

Claim 413075

Claim 413074

Claim 78658

Claim 78657



50 m



2. 21969

LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	B1 (GREY) ORE
703	B2 ORE / GREEN MICA CLAY
704	WASTE (SILICA SANDS)
705	WASTE (PEAT & ORGANICS)
706	WASTE (ALL CLAYS)
707	WASTE (UNDIFFERENTIATED / OTHER)
720	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
708	ROCK - GNEISS
710	ROCK - RAUMAUIGITE
711	ROCK - SCHISTE
712	ROCK - PHYRENITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN VARVED CLAY
715	GREY PUMPO BLEDDA CLAY
716	GLAUF-CLAY SANDS
717	BROWN BOULDER TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
L99	LOST CORE / NO RECOVERY / NO SAMPLE

West

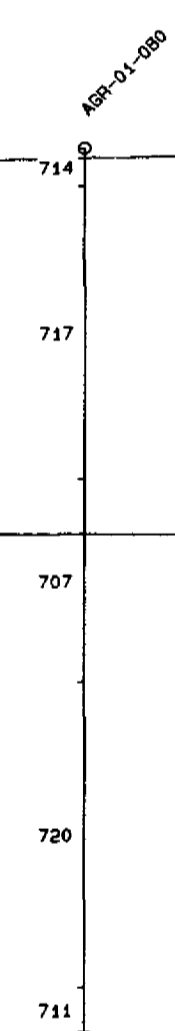
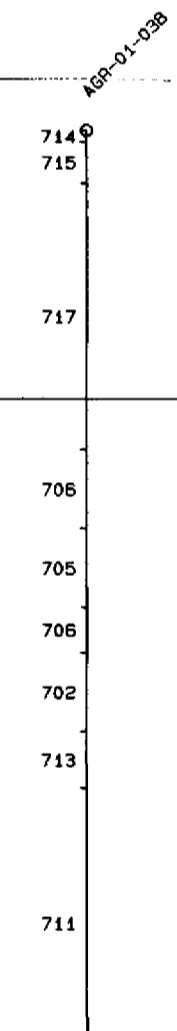
East

Claim 413075

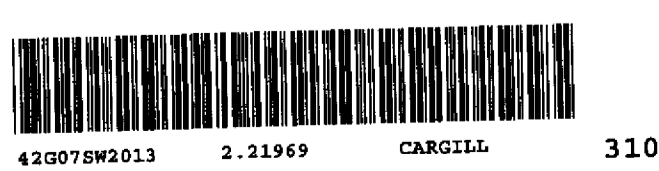
Claim 413074

Claim 78658

Claim 78657

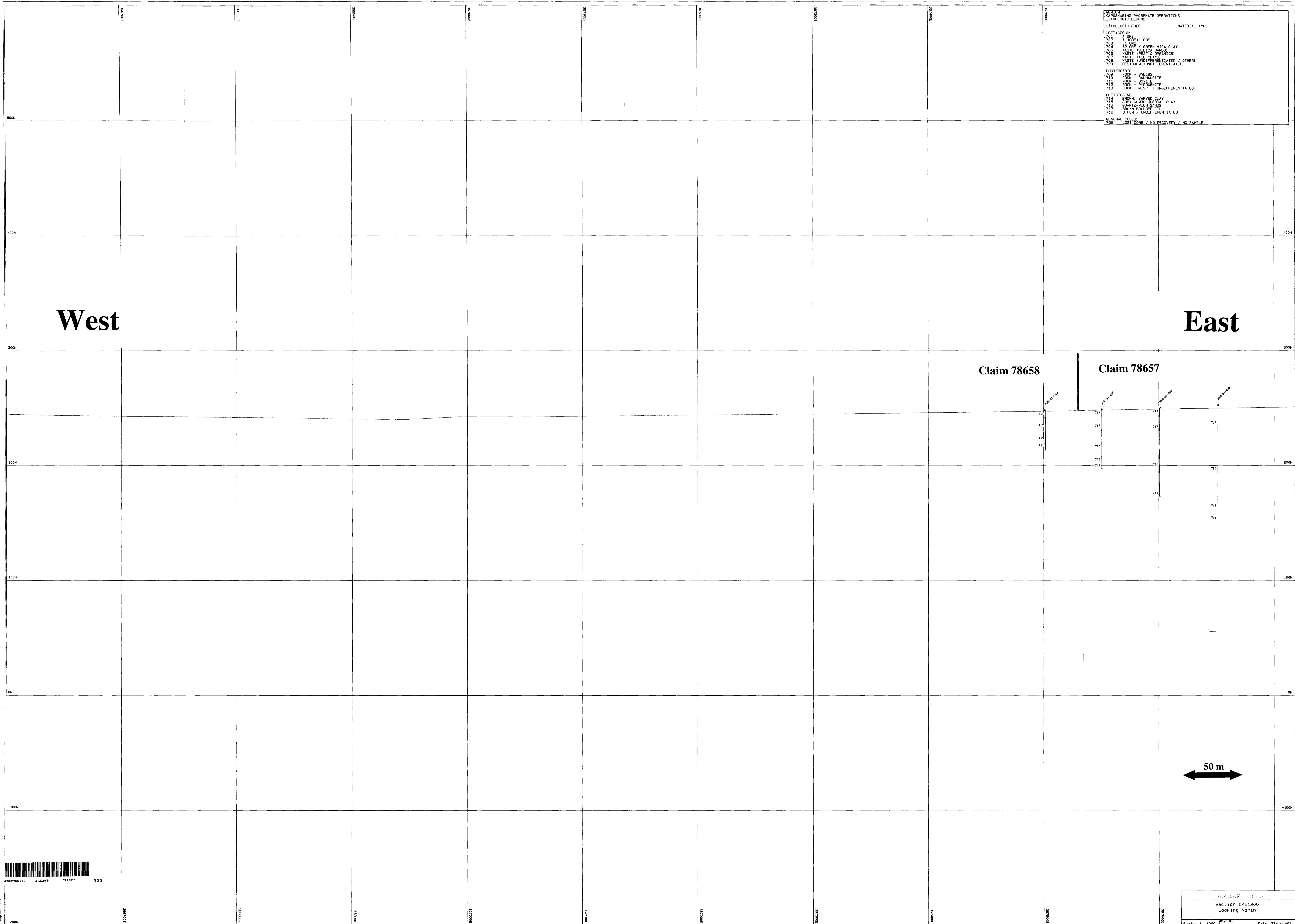


50 m



AGRIUM - KPO  
 Cross Section 548150  
 Looking North  
 Scale: 1:1000 Plan No. Date: 22-Jun-01

2.21969



KAPUSKASING PHOSPHATE OPERATIONS  
LITHOLOGIC LEGEND

LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	A (GREY) ORE
703	B1 ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUAL (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
709	ROCK - GNEISS
710	ROCK - GARNETITE
711	ROCK - SOVITE
712	ROCK - PYROXENITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN MARLED CLAY
715	GREY SUMMO (LE) CLAY
716	GRAY-FINE SANDS
717	BROWN BOUNDER TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LOST CORE / NO RECOVERY / NO SAMPLE

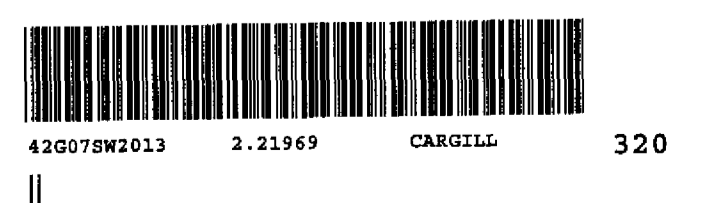
West

East

Claim 78658

Claim 78657

50 m



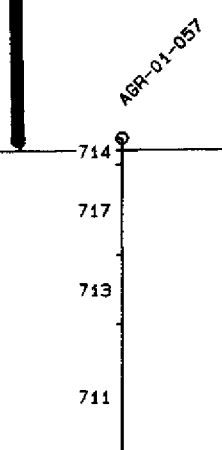
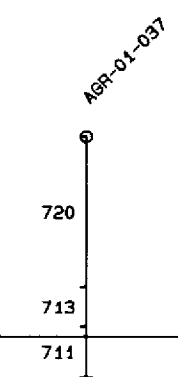
KAPUSKASING PHOSPHATE OPERATIONS LITHOLOGIC LEGEND		MATERIAL TYPE
CRETACEOUS:		
701	A ORE	
702	A (GREY) ORE	
703	B1 ORE	
704	B2 ORE / GREEN MICA CLAY	
705	WASTE (SILICA SANDS)	
706	WASTE (PEAT & ORGANICS)	
707	WASTE (ALL CLAYS)	
708	WASTE (UNDIFFERENTIATED / OTHER)	
709	RESTRIUM (UNDIFFERENTIATED)	
PROTEROZOIC:		
710	ROCK - ONEISS	
711	ROCK - DALMANITE	
712	ROCK - SODITE	
713	ROCK - PYREXENITE	
715	ROCK - MISC. / UNDIFFERENTIATED	
PLEISTOCENE:		
714	BROWN VARVED CLAY	
716	GREY BROWN LEONIAN CLAY	
717	SMITZ-BOLN SAND	
718	BROWN BOLN FILL	
719	OTHER / UNDIFFERENTIATED	
GENERAL CODES:		
Z89	LOST CORE / NO RECOVERY / NO SAMPLE	

West

East

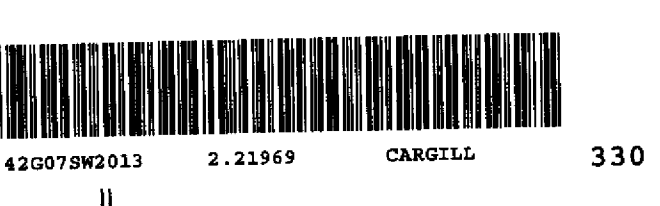
Claim 78658

Claim 78657



50 m

2 010 69



KARUKASING PHOSPHATE OPERATIONS	
LITHOLOGIC LEGEND	
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	A (GREY) ORE
703	B1 ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (SILT CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUAL (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
710	ROCK - GNEISS
711	ROCK - GABBRO
712	ROCK - QUARTZITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN VARVED CLAY
715	GREY SAND / SILT CLAY
716	QUARTZ-RIICH SANDS
717	BROWN BOUNDER TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LOST CORE / NO RECOVERY / NO SAMPLE

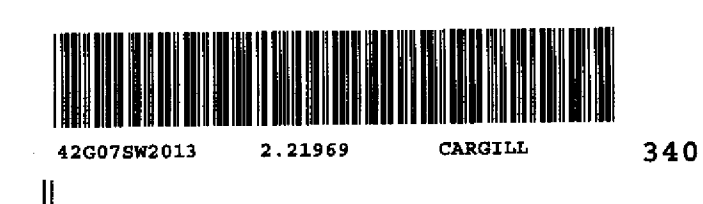
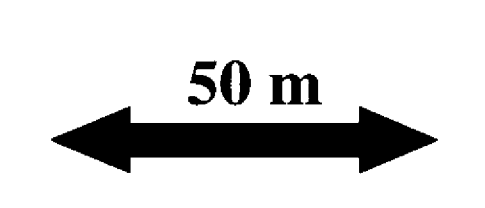
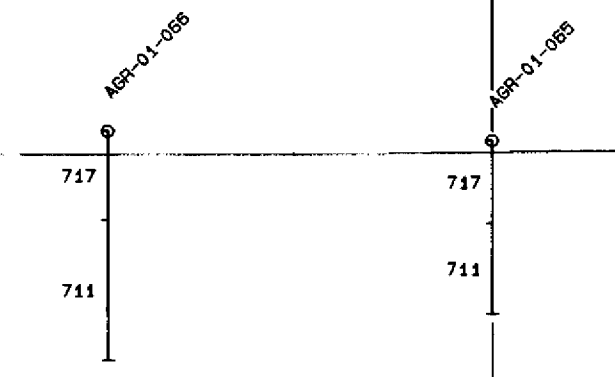
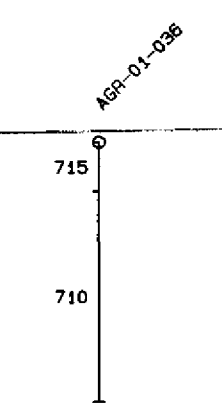
West

East

Claim 413076

Claim 78658

Claim 78657



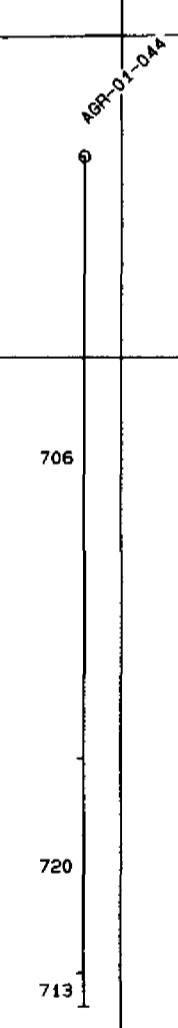
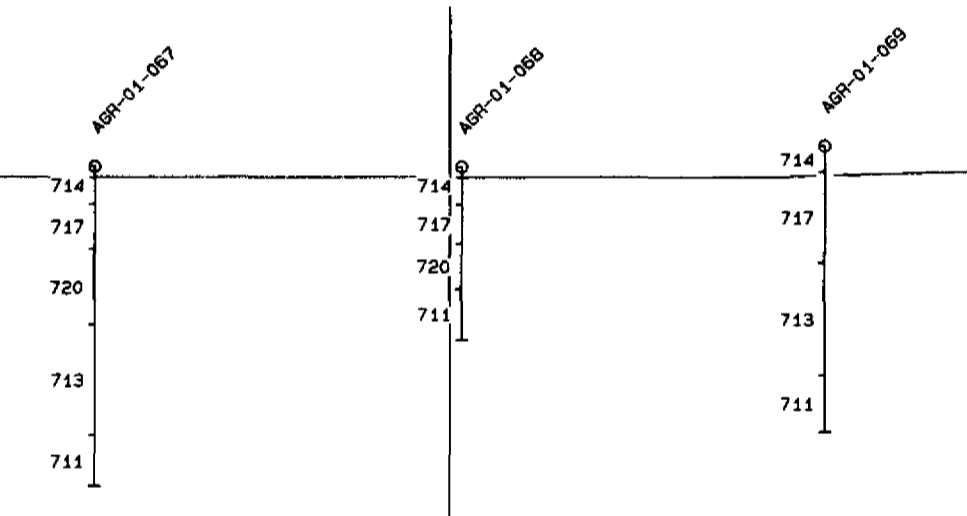
LITHOLOGIC CODE	MATERIAL TYPE
<b>CRETACEOUS:</b>	
701	A ORE
702	B1 (GREY) ORE
703	B2 ORE / GREEN MICA CLAY
704	WASTE (SILICA SAND)
705	WASTE (PEAT & ORGANICS)
706	WASTE (ALL CLAYS)
707	WASTE (UNDIFFERENTIATED / OTHER)
708	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
709	ROCK - GNEISS
710	ROCK - AMPHIBOLITE
711	ROCK - SCHIST
712	ROCK - PHYLLENITE
713	ROCK - MISC / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN VARVED CLAY
715	GREY BUNDED / LEADEN CLAY
716	QUARTZ-RICH SAND
717	BROWN BOULDER TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LOST CODE / NO RECOVERY / NO SAMPLE

West

East

Claim 78658

Claim 78657



50 m



ABRILUM  
FERTILISING PHOSPHATE OPERATIONS  
LITHOLOGIC LEGEND

LITHOLOGIC CODE	MATERIAL TYPE
<b>CHERTACEOUS</b>	
701	A (ORE)
702	B (ORE)
703	B1 (ORE)
704	B2 (ORE)
705	B3 (ORE)
706	WASTE (SILICA SANDS)
707	WASTE (HEAVY & ORGANICS)
708	WASTE (ALL CLAYS)
709	WASTE (UNDIFFERENTIATED / OTHER)
710	RESIDUAL (UNDIFFERENTIATED)
<b>PROTEROZOIC</b>	
711	ROCK - GNEISS
712	ROCK - GABBRO
713	ROCK - DIORITE
714	ROCK - GRANITE
715	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE</b>	
716	BROWN / VARVED CLAY
717	GREY / SANDY / LEONAL CLAY
718	BROWN / SANDY / LEONAL CLAY
719	BROWN / SANDY / LEONAL CLAY
720	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES</b>	
799	LOST CORE / NO RECOVERY / NO SAMPLE

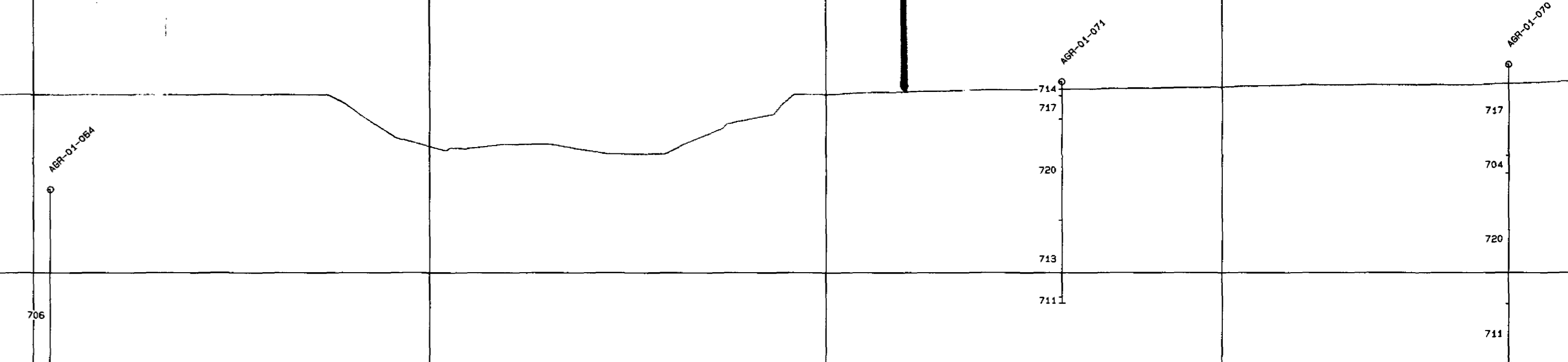
West

East

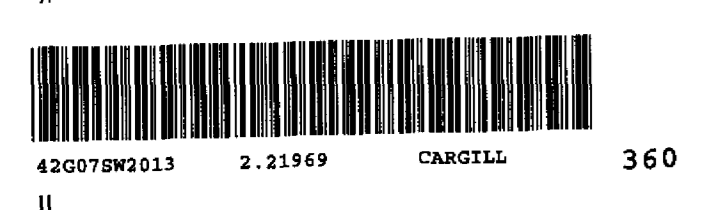
Claim 413076

Claim 89923

Claim 78657



50 m



ABRILUM - FPO  
Cross Section 5461400  
Looking North  
Scale: 1:1000 Plan No. Date: 22-Jun-01

2. 21969

AGRIUM  
KARIBUASING PHOSPHATE OPERATIONS  
LITHOLOGIC LEGEND

LITHOLOGIC CODE	MATERIAL TYPE
001	ORE
701	A ORE
702	B1 ORE
703	B2 ORE / GREEN MICA CLAY
704	WASTE (SILICA SANDS)
705	WASTE (PEAT & ORGANICS)
706	WASTE (ALL CLAYS)
707	WASTE (UNDIFFERENTIATED / OTHER)
708	RESIDUUM (UNDIFFERENTIATED)
709	RESIDUUM (UNDIFFERENTIATED)
710	RESIDUUM (UNDIFFERENTIATED)
711	ROCK - GNEISS
712	ROCK - GRANULITE
713	ROCK - SOVITE
714	ROCK - PYROCLASTIC
715	ROCK - MISC. / UNDIFFERENTIATED
716	PLEISTOCENE - VARIED CLAY
717	BROWN - VARIED CLAY
718	GREY BUNDO (LESDA) CLAY
719	QUARTZ-RICH SANDS
720	BROWN BOULDER TILL
721	OTHER / UNDIFFERENTIATED

GENERAL CODES:  
799 LOST CORE / NO RECOVERY / NO SAMPLE

West

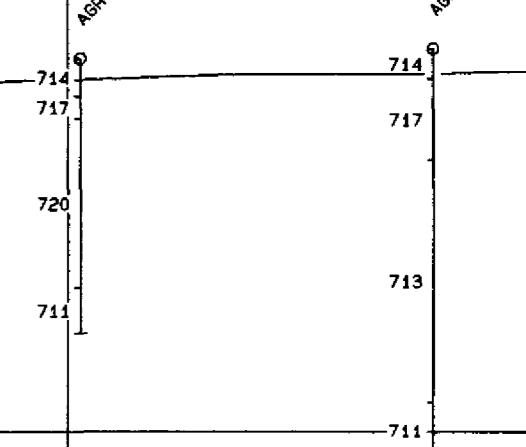
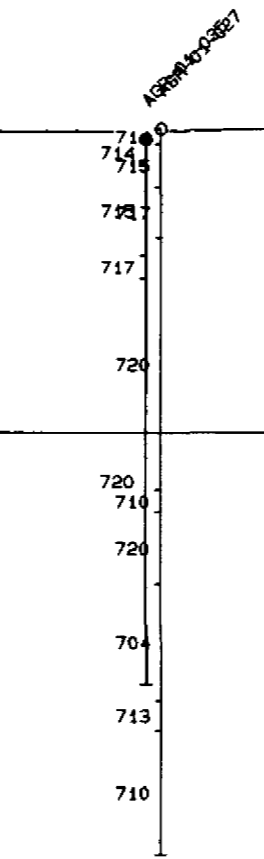
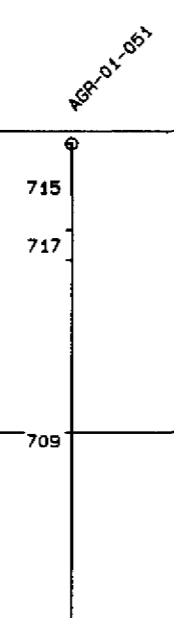
East

Claim 413077

Claim 413076

Claim 89923

Claim 78657



50 m





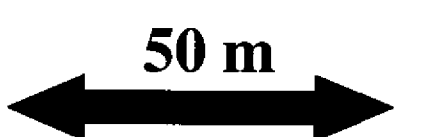
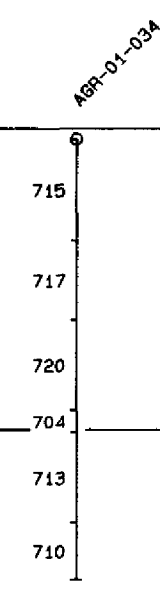
LITHOLOGIC CODE	MATERIAL TYPE
CRETACEOUS:	
701	A ORE
702	A (GREY) ORE
703	B1 ORE
704	B2 ORE / GREEN MICA CLAY
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (SILT CLAY)
708	WASTE (UNDIFFERENTIATED / OTHER)
709	RESIDUUM (UNDIFFERENTIATED)
PROTEROZOIC:	
710	ROCK - GNEISS
711	ROCK - GRANULITE
712	ROCK - SOVITE
713	ROCK - PYROXENITE
714	ROCK - MISC. / UNDIFFERENTIATED
PLASTICENE:	
715	BROWN VARVED CLAY
716	GREY SAND (SODIA) CLAY
717	QUARTZ-RICH SANDS
718	BROWN BULKY FILL
719	OTHER / UNDIFFERENTIATED
GENERAL CODES:	
720	LOST CORE / NO RECOVERY / NO SAMPLE

West

East

Claim 413076

Claim 89923



4200720013 2.21349 CARTELL 380

AGRIUM - FPP  
Cross Section 5461500  
Looking North  
Scale: 1:1000 Plot No. Date: 22-Jun-01

2. 219 69

AGRIUM KARIBOOSTING PHOSPHATE OPERATIONS LITHOLOGIC LEGEND	
LITHOLOGIC CODE	MATERIAL TYPE
<b>DIETAGEOUS:</b>	
701	A ORE
702	A (GREY) ORE
703	B1 ORE / GREEN MICA CLAY
704	B2 ORE
705	WASTE (SILICA SANDS)
706	WASTE (PEAT & ORGANICS)
707	WASTE (ALL CLAYS)
708	WASTE (UNDIFFERENTIATED / OTHER)
720	RESIDUUM (UNDIFFERENTIATED)
<b>PROTEROZOIC:</b>	
709	ROCK - GNEISS
710	ROCK - AMPHIBOLITE
711	ROCK - SOULITE
712	ROCK - PYROXENITE
713	ROCK - MISC. / UNDIFFERENTIATED
<b>PLEISTOCENE:</b>	
714	BROWN / VARVED CLAY
715	GREY / BROWN / REDDISH CLAY
716	QUARTZ-PECH / SAND
717	BROWN / BOLLER / TILL
718	OTHER / UNDIFFERENTIATED
<b>GENERAL CODES:</b>	
799	LAST CORE / NO RECOVERY / NO SAMPLE

West

East

Claim 89923

Claim 78657

