2017 TERMINUS WELL REPLACEMENT PROJECT

ENVIRONMENTAL PROTECTION PLAN

Prepared By: **Union Gas Limited**
Environmental Planning
February 2017

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1.0 INTRODUCTION

This Environmental Protection Plan (EPP) has been prepared for the development of the 2017 Terminus Well Replacement Project ("the Project"), as proposed by Union Gas Limited ("Union Gas"). The Project involves work in the Terminus Storage Pool to maintain the deliverability of the pool.

This report will document a plan for the protection of the environment during the completion of the following activities: drilling of one new injection/withdrawal (I/W) well, converting an existing observation well (UT-13) to an I/W well, installation of approximately 330 m of NPS 12 inch pipeline, abandonment of approximately 340 m of NPS 10 inch pipeline, construction of roadways and a drilling pad to facilitate access to the well location, and removal of existing access roads to abandoned well locations.

Specifically this report will:

- Describe the proposed work necessary for the Project;
- Describe the procedures that will be followed during construction of the facilities;
- Identify potential environmental impacts and recommend measures to minimize those impacts; and
- Describe the public consultation opportunities.

A well drilling application will be submitted to the Ministry of Natural Resources and Forestry (MNRF) by Union Gas. As Union Gas is the operator of the Terminus Storage Pool, all aspects of the Project will be completed by Union Gas. This includes determining the locations of the new well, developing and adhering to well drilling specifications, operating and maintaining the facilities, identifying and mitigating any environmental concerns, and working with the landowners in the storage pool.

In addition to providing a formal plan for the protection of the environment, this report provides the landowners and government agencies detailed documentation of the various environmental protection measures that will be implemented by Union Gas during the

development of the Project. This report will also be included with Union Gas's evidence filed with the Ontario Energy Board.

2.0 PROJECT BACKGROUND

The Terminus Pool was discovered in 1968 with the drilling of the Ram 2 (R-2) well and was converted to natural gas storage in 1975. The Terminus Designated Storage Pool is located on Lots 22-25 of Concessions 8-10 in the Township of St. Clair. The area is primarily agricultural with scattered residential dwellings. The proposed well drilling, pipeline installations, and associated works are located on Lot 23, Concession 9 in the Township of St. Clair. A location map showing the Terminus Designated Storage Area is shown in Appendix A.

In 2016, Union Gas completed the following work in Terminus Pool:

- Abandoned observation well Ram 3 (R-3);
- Abandoned I/W well Ram 4 (R-4); and
- Converted Ram 2 (R-2) from an I/W well to an observation well

Wells R-3 and R-4 were drilled in 1968 and operated by Union Gas as I/W wells as part of pool operations. Regularly scheduled casing inspection logs were completed on each of the wells as part of the integrity management program. Although these wells were in compliance with CSA Z341.1-14 and Union Gas's integrity management program, the completion of these wells did not meet Union Gas's current design and completion practices. Therefore, wells R-3 and R-4 were abandoned in 2016. Since a Guelph observation well (R-3) was abandoned, Union Gas converted R-2 to a Guelph observation well as a replacement.

The abandonment of R-4 and the conversion of R-2 resulted in a deliverability loss of 491 $10^3m^3/d$. Therefore, the proposed well UT-15 and the conversion of UT-13 to an I/W well is required to maintain the deliverability of the pool.

3.0 PROJECT DESCRIPTION

The Project will include:

- Drilling of one new I/W well (UT-15)
- Converting an existing observation well (UT-13) to an I/W well
- Installation of approximately 330 m of NPS 12 inch gathering pipeline to connect UT-15 and UT-13 to the existing gathering system
- Abandonment of 340 m of NPS 10 inch pipeline
- Construction of access roadways and a drilling pad
- Removal of existing access roads to the abandoned well locations

Please see Appendix A for a detailed map of the proposed facilities located in the Terminus Storage Pool.

4.0 PLANNING PROCESS

4.1 Key Activities

The following is a summary of the key activities for the development of the 2017 Terminus Well Replacement Project:

Determine well location	Fall 2016
Complete EPP for the Project	Winter 2017
Submit Applications:	
MNRF	Winter 2017
Ontario Energy Board	Winter 2017
Ontario Energy Board Hearing	Summer 2017
Ontario Energy Board Decision	Summer 2017
Construction:	
Access Road Construction	Fall 2017
Drilling Pad Construction	Fall 2017
Well Drilling	Fall 2017
Pipeline Installation	Fall 2017

5.0 LANDOWNER INPUT

Union Gas has met, and will continue to meet, with the landowner who is directly affected by the Project and other landowners who are adjacent to the work area to inform them of the Project. Discussions with the directly affected landowner included compensation, new well and pipeline locations, access road and temporary drilling pad locations, and topsoil stripping. During these discussions, the landowner had the opportunity to comment on Union Gas's proposal and any concerns identified have been addressed in the mitigation section of this report. Union Gas will continue to work with the landowner regarding these items.

Both the affected and adjacent landowners will be informed of the Ontario Energy Board application and will have the opportunity to participate in the hearing process.

If the Project is approved, Union Gas will implement a Landowner Relations Program. This program provides the directly affected landowner as well as the adjacent landowners with quick access to Union Gas personnel in the event there are concerns or complaints. This program also includes a complaint tracking system to ensure that complaints and commitments are documented and resolved as quickly as possible.

6.0 PROJECT DEVELOPMENT

6.1 Access Road Construction

Union Gas proposes to use existing access roads where possible. However, it will also be necessary to construct a new "all weather" access road within the storage pool to allow Union Gas access to the new wellhead. Union Gas will negotiate the location, layout, and design of the permanent all weather access road with the landowner. Permanent access roads allow Union Gas to perform routine maintenance such as dead weight testing, corrosion logging, well stimulations and pressure tests without disturbing agricultural soils and crops.

The procedure for construction of an access road is as follows:

- Location of the permanent road network is determined in consultation with the landowner
- Topsoil is stripped from the road right-of-way
- Geotextile material is laid down on the road right-of-way
- Granular material is placed on the geotextile material to a depth of approximately 35 cm

A cross section of a typical access road is shown in Appendix B and the locations of the existing and proposed access roads are shown in Appendix A.

The stripped topsoil for the permanent access road will be hauled to another location on the landowner's property or will be taken to an approved site mutually agreed on by the landowner and Union Gas if the landowner refuses the topsoil.

6.2 Drilling Pad Construction and Well Drilling

The new well locations were determined by Union Gas's Underground Storage Department using existing well data, geophysical logs and operational data.

A cable tool drilling rig will be used for drilling which will take place on a temporary granular drilling pad approximately 75 m by 75 m in size. Topsoil from this area will be stripped and stockpiled adjacent to the drilling pad and geotextile material will be overlain by crushed granular. Once the drilling pad is removed the topsoil will be replaced.

Tanks will be placed adjacent to the rig to collect drilling fluids and cuttings. The tanks will be monitored and emptied as required. Fluids will be recirculated during the drilling process and the drilling fluids/cuttings will be disposed of at an approved location after drilling has been completed.

Drilling will proceed on a 12 or 24 hour basis throughout the drilling process, and is expected to take two to three months to complete, per well.

The following is a summary of the activities associated with well drilling:

- Establishing the well site location is generally the first activity associated with well drilling. Locations are selected based on interpretation of the geological information, a review of the surface features associated with that location and landowner input.
- Once the location of the well is determined, access roads and drilling pads centred on the well location are topsoil stripped. Following topsoil stripping, the entire work area is overlain with geotextile and granular material to ensure the site has adequate equipment bearing capabilities.
- A typical well site layout for cable tool drilling rigs is shown in Appendix B.
- During drilling, a number of vehicles must service the rig including cement trucks, water trucks and other service vehicles.
- When drilling has been completed, the rig is moved off the site, the granular drilling pad is reduced to approximately 12 m by 12 m surrounding the wellhead, and the topsoil is replaced. Areas disturbed by drilling are restored by chisel ploughing, discing or subsoiling during dry conditions.

As there will be roads to the new well location, there will be no limitations to accessing the wells during wet soil conditions.

6.3 Pipeline Construction

Once the UT-15 has been drilled and UT-13 has been converted to an I/W well, they will be connected to the existing gathering system by a NPS 12 inch gathering pipeline. The proposed route of the new pipeline was determined by Union Gas in consultation with the landowner.

The following is a summary of activities associated with pipeline construction:

Clearing and Grading
This prepares the right-of-way to allow the construction of the pipeline. Brush, trees and grass are cut or removed and the ground levelled.

Stringing
The pipe is strung next to the proposed pipeline location. The sections of pipe are laid end to end and set on supports that keep the pipe off the ground and prevent damage to the coating.

Trenching
To install the pipeline a trench will be dug. The trench is usually dug using an excavator. The width of the trench is approximately 0.6 m and the depth will be a minimum of 1.5 m. The excavator will dig the trench and place the spoil in a pile beside the trench. Once the trench is excavated, the pipeline will be installed and if the spoil is suitable, it will be placed back in the trench. Any unsuitable spoil will be removed from the site and disposed of in an appropriate manner.

Cleaning and Testing
To complete construction, the pipeline is cleaned and pressure tested in accordance with the Energy Act.

Restoration
It is Union Gas's policy to restore the affected areas to "as close to original" condition as practicable. To ensure the quality of the restoration, pictures of the construction area will be taken before the work commences.

6.4 Operation and Maintenance Practices

Like any system, once the storage pools are operational they have to be maintained and serviced on a regular basis. The following paragraphs will describe the most common work to be performed by Union Gas personnel after storage pools are in operation.

Locates

Union Gas provides a free locate service to any person or business who may be working near a pipeline. The pipeline locator is comprised of two parts, a transmitter and a receiver. To perform a locate, the transmitter is connected to the gas facility. The transmitter sends a small current through the facility, which is picked up by the receiver. The location of the pipeline is then marked using stakes or yellow paint. No excavation is required.

Leak Surveys

To ensure that there are no leaks in the system, a company representative or agent will "leak survey" the pipeline. The leak surveyor will walk along the gas main and carry a small machine that can detect natural gas. No excavation is required to complete the leak survey. However, if leaks are detected, excavations will be required to repair the pipeline. These repairs will be completed as soon as possible after they are detected.

7.0 ENVIRONMENTAL FEATURES AND PROPOSED MITIGATION

This Environmental Protection Plan for the Project, as prepared by Union Gas, describes the environmental features that can be found in the area of the storage pool. This report also discusses the net and cumulative effects that can be expected from this type of project.

Union Gas believes that due to the limited impact the Project will have on the surrounding environment, the implementation of Union Gas's standard mitigation measures combined with the landowner compensation package for temporary crop loss and disturbances will result in no significant cumulative impacts.

Table 1 summarizes the general environmental impacts and proposed mitigation measures associated with well drilling and pipeline construction in the storage pool. These impacts and mitigation measures have been identified by Union Gas to address concerns relating to well drilling and pipeline construction.

In addition to, and to provide greater detail than that summarized in Table 1, the following are the more significant environmental features that may be impacted, and the mitigation measures proposed to protect these features during the Project.

Agricultural Areas

Well drilling, pipeline installation, and well pad and access road construction will all occur on or adjacent to agricultural lands and therefore have the potential to impact them. Potential impacts to agricultural lands include: compaction, topsoil/subsoil mixing, and reduction of crop yields.

To mitigate potential compaction, Union Gas will implement appropriate compaction relief using an agricultural subsoiler prior to replacing topsoil if soils have been compacted by heavy equipment. Union Gas will also strip topsoil separately from subsoil to ensure there is adequate separation between the stockpiles. Topsoil stripping and soil compaction will be monitored during construction. Union Gas will also follow a wet soils shut down practice when working directly on agricultural lands to ensure there are no adverse effects due to equipment working on wet soils. Additionally, the Landowner will be compensated for any crop losses as a result of the Project.

Soybean Cyst Nematode

Prior to the construction of the access road and well pad, Union Gas will conduct soil sampling in the agricultural field associated with the Project. The samples will be tested and analyzed for the presence of Soybean Cyst Nematode (SCN). SCN is a microscopic worm-like organism found in soils that obtain their nutrients by feeding on the roots systems of soybeans. Once a field has been infested, there is significant potential for soybean crop loss.

If the property is found to contain SCN, a construction protocol developed by Union Gas to deal with SCN will be implemented. The protocol involves complete topsoil stripping and washing of all construction equipment involved before leaving the site.

Water Well Monitoring

Water wells may be impacted by well drilling and pipeline construction. These activities

could impact on the groundwater in the area if they are not completed properly.

Union Gas will retain a consultant hydrogeologist to review the proposed well drilling locations and conduct a standard water well monitoring program. Water well monitoring will establish existing groundwater conditions for comparative purposes should groundwater interference complaints arise as a result of well drilling activities. The monitoring program will include the collection of groundwater samples and the samples will be submitted for general chemistry, metal, anions and methane analysis. Individual results will be presented in a letter to each resident.

Drilling Fluids

Drilling fluids will be used during well drilling operations. These fluids, fresh water and brine, if not contained, could impact agricultural areas and the surrounding environment. The drilling fluids will be stored in steel tanks adjacent to the drilling rigs. The fluids will be recycled and disposed of at approved locations. The tanks will be monitored on a regular basis to ensure the fluids remain contained at a safe level.

Cultural Heritage and Archaeological Resources

Union Gas will retain the services of a Cultural Heritage Consultant to determine if the Project will have any impacts to cultural heritage landscapes and/or built heritage resources and to develop appropriate mitigation measures if required.

Union Gas will retain the services of an Archaeological Consultant to initiate a Stage I and Stage II Archaeological Assessment prior to construction in accordance with the Ministry of Tourism, Culture and Sport (MTCS) guidelines to identify known or potential archaeological planning constraints within the Project study area. The survey will serve to confirm the presence of significant archaeological resources subject to potential impact from the proposed Project activities.

If deeply buried cultural remains are encountered during construction, all activities will be suspended and the archaeological consultant as well as the MTCS will be contacted to determine the appropriated course of action.

Noise

Noise will occur during well drilling. Well drilling will take place during daylight hours for the initial portion of the Project and will take place 24 hours a day for the remaining drilling period.

To minimize inconveniences brought on by excessive noise, all engines associated with the Project should be equipped with mufflers. Landowners will also be notified of the drilling schedule.

Tree Clearing

Tree clearing is not anticipated for this project.

Should tree clearing become necessary, it will be restricted from occurring between April 1 to August 31 in accordance with the Migratory Bird Convention Act and Migratory Bird Regulations, to avoid bird nests and eggs. If project scheduling requires the removal of trees or shrubs during the nesting period, a qualified ornithologist will be required to assess the area of removal for evidence of nesting activity prior to removal to avoid any potential loss of active nests.

Species at Risk

Union will retain an independent third party consultant to review the Project study area for potential species at risk (SAR) and determine if any species will be impacted by construction activities. If SAR are identified, Union Gas will work with the consultant and the appropriate governing agency to develop a mitigation plan; however, it is unlikely that SAR or SAR habitat will be present as the Project is located on actively farmed crop land.

8.0 CUMULATIVE IMPACTS

The following section considers the cumulative effects of construction on the lands due to the Project. The definition of cumulative effects used in this report is: "changes to the environment that are likely to result from a particular project in combination with other projects or activities that have been or will be carried out".

It is expected that the Project will result in both minor positive and negative cumulative effects. There may be cumulative impacts between this project and other projects in the area, although Union Gas is unaware of any projects that would interact with this proposal.

Additional noise, dust, and traffic could be an issue should construction occur concurrently with a separate project; however, the benefits of the new well and pipeline will be a positive impact in the long term as it is being constructed to maintain the deliverability in the Terminus Storage Pool.

9.0 SUMMARY AND RECOMMENDATIONS

This Environmental Protection Plan (EPP) provides a strategy for the protection of the environment during the 2017 Terminus Well Replacement Project. This EPP has been developed by identifying environmental features in the area and the potential impacts of construction. The EPP also recommends mitigation measures to minimize the environmental impacts of the proposed Project.

Union Gas's complaint tracking system will also be implemented for this Project. This process ensures that landowners and tenants have access to Union Gas personnel to address any concerns that may arise during construction.

With the implementation of the recommended mitigation measures, and ongoing landowner communication, the 2017 Terminus Well Replacement Project is not anticipated to have any significant adverse environmental or socio-economic effects.

TABLE 1

MITIGATION SUMMARY - WELL DRILLING AND PIPELINE CONSTRUCTION

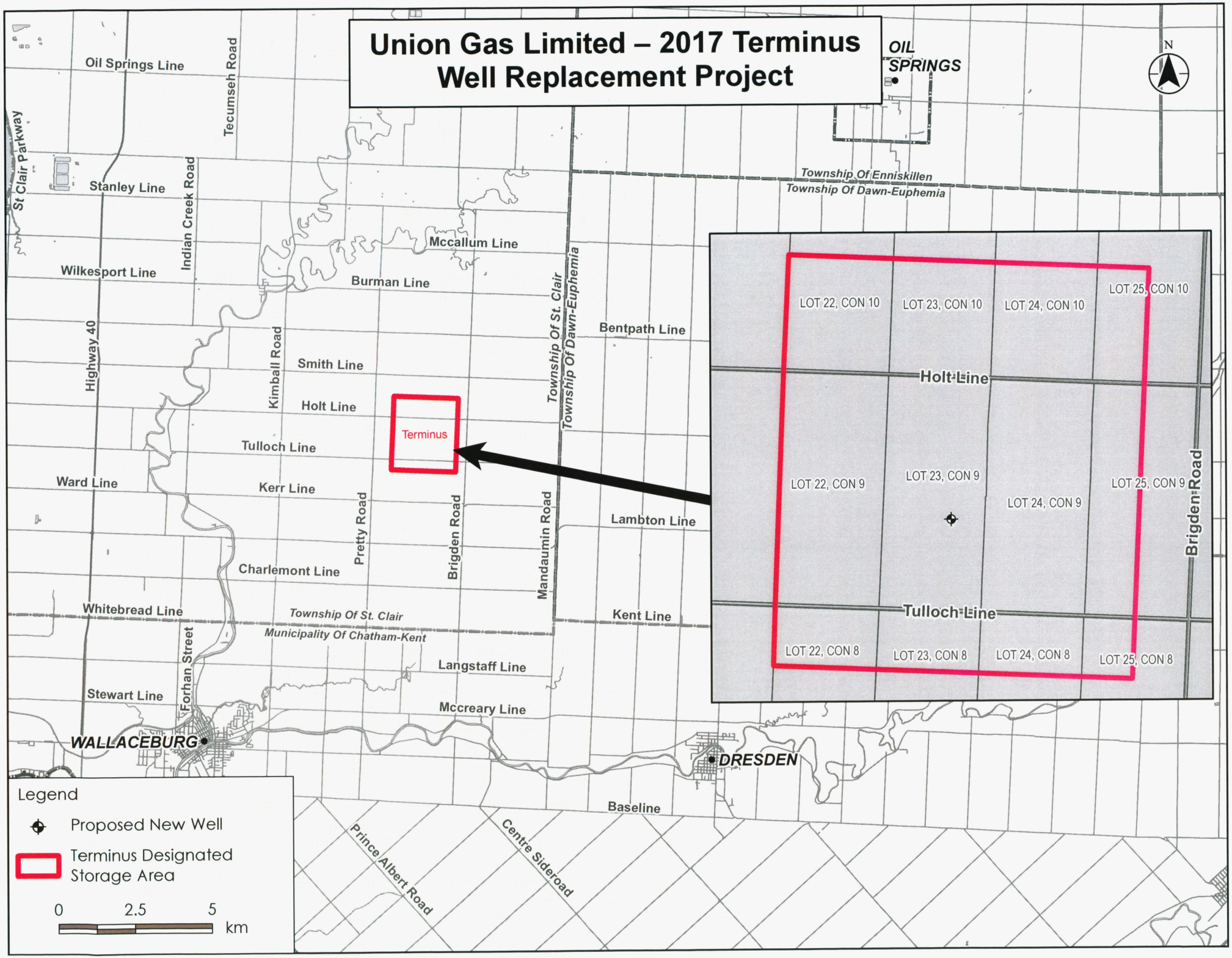
TABLE 1: MITIGATION SUMMARY WELL DRILLING AND PIPELINE CONSTRUCTION		
Activity	**Potential Impact**	**Mitigation**
a) Pre-Construction	Ancillary facilities such as wellheads and access roads may be an inconvenience to landowners and farming operations.	• Prior to any activity associated with the development, the Lands Agent will meet with the directly affected landowners and review items such as the drilling schedule, as well as the location of the wellheads, pipelines and the permanent access roads. The facilities will be located so as to minimize any inconvenience to the farming operation.
b) Surveying	Surveying may be disruptive to the landowner.	• The landowners will be notified of intent to enter the property.
c) Access Roads	Vehicular traffic during and after drilling and pipeline installation (i.e. Well operations and maintenance vehicles) may cause soil rutting, compaction or mixing, particularly if soils are wet.	• The location of the access roads will be reviewed with the landowners. Roads will be constructed in such a way as to minimize disruption to farm operations. • Existing laneways will be utilized where possible. • Access roads and granular work areas will be limited in size to the greatest extent possible. • All traffic will be limited to the access roads or granular work area to the greatest extent possible. • Culverts may be used in the construction of access roads to ensure existing drainage patterns are maintained. • Geotextile fabric will be used for access roads and work areas to provide additional stability, minimize compaction and eliminate soil mixing with granular material.
d) Grading	Grading will be necessary for the construction of access roads, drilling pads and pipeline work areas. On agricultural land, grading has the potential to impact soil productivity by disrupting tile drains and causing soil mixing, rutting and compaction, particularly during wet soil conditions.	• Pre-construction tiling will be undertaken prior to the start of any operations, if necessary. • Disrupted or broken tile will be repaired following the Company's documented procedures for tile repair. • Grading will not be conducted on wet soils. Wet soils shutdown practices will be adhered to. • In drilling and pipeline work areas where land will be returned to its former use (agricultural), topsoil will be stripped and stockpiled along the edges of the work area following documented Company procedures. • An Environmental Inspector will be on site at a regular basis to observe operations such as topsoil stripping, trenching, dewatering and any other procedures that may have an impact to the environment.
e) Noise	Noise from the drilling rig, pipeline equipment and/or service vehicles may disrupt nearby residents.	• Noise will be controlled to the greatest extent possible to minimize the disruption to nearby residents. • Will ensure all equipment is properly muffled.

TABLE 1: MITIGATION SUMMARY WELL DRILLING AND PIPELINE CONSTRUCTION		
Activity	**Potential Impact**	**Mitigation**
f) Site Restoration	Improper site restoration may permanently affect soil productivity.	• Areas disrupted by drilling and pipeline construction will be restored by re-grading followed by chisel ploughing and disking. • The Lands Agent will review and discuss site restoration measures with the landowner prior to implementation to obtain any concerns or suggestions with regard to these measures. • Upon completion, the Lands Agent will review the area with the landowner to ensure restoration has been completed to the landowner's satisfaction.
g) Fuel Storage and Handling	Improper fuel storage and handling may cause spillage and possible contamination of soil.	• Fuel will not be stored near watercourses (i.e. within 50 metres). • Fuel storage areas will be clearly marked. • Containment dykes and protective plastic ground matting will be used in fuel storage areas to protect against spillage and leakage. • Spill clean-up materials will be stored on site and available in the event of a spill. Spills or leakage will be reported to the appropriate authority immediately (Ministry of the Environment and Climate Change (MOECC) Spills Action Centre at 1-800-268-6060), if necessary.
h) Liquid and Solid Waste	Drilling fluids, solid wastes and lubricants must be properly handled, stored and disposed of to avoid the possible contamination of surrounding soil or water.	• Liquid and solid wastes will be properly stored, handled and disposed of in an approved location. • Work areas will remain clear of debris and litter during and after construction. • Drilling fluids will be properly contained in waste tanks and disposed of after drilling in an appropriate location. • The level of drilling fluids will be frequently monitored to avoid possible overflow of the tank.
i) Landowner Concerns	Disruption to landowners and tenants.	• Union Gas will provide the landowners with the telephone numbers of Company personnel. • A Landowner Relations Program will be established to track complaints during construction.
j) Road Side Ditches	Water quality concerns.	• Will ensure ditches are returned to pre-construction conditions or better, as quickly as possible.
k) Nuisance Dust	Disruption to landowners and tenants.	• Control dust as required.
l) Fences	Disruption to landowners and tenants. Loss of control of animals inside fenced areas.	• Landowners and tenants will be contacted before any fences are disturbed. • Temporary fencing will be erected if requested by landowner or tenant. • Fences will be replaced as soon as possible.
m) Underground	Disruption of services	• Obtain "locates" from all utilities.

TABLE 1: MITIGATION SUMMARY WELL DRILLING AND PIPELINE CONSTRUCTION		
Activity	**Potential Impact**	**Mitigation**
Utilities		• If utilities are damaged, repair as soon as possible.
n) Archaeology, Cultural Heritage Landscapes and Built Heritage Resources	Disturbance of heritage resources	• An archaeological assessment will be completed prior to construction • Stop construction if artifacts are encountered and notify Ontario Ministry of Tourism, Culture and Sport\ • A Cultural Heritage consultant will determine if impacts to cultural heritage landscapes and/or built heritage resources are anticipated and will develop a mitigation plan if required.
o) Water Wells	Disruption to water supply	• If water quality/quantity problems occur as a result of construction activities, the Company will supply potable water until the situation has been corrected. • Union Gas will implement its standard well monitoring program.
p) Trees	Damage to Trees Disturbance to wildlife	• Minimal tree removal is anticipated. • Trees to be removed outside of avian nesting window. • Discuss restoration plans with landowner.
q) Natural Areas	Sedimentation run-off	• Ensure sediment barriers such as straw bales/sediment fencing are used where there is a potential for run-off.
r) Vegetative Cover	Loss of vegetative cover leading to soil erosion	• Restore cover by means of seeding or hydro-seeding as soon as possible.
s) Soils: Erosion	Introduction of sediment/silt to adjacent lands	• Restore disturbed soils as soon as possible after construction.
t) Contaminated Soils	Dealing with contaminated materials Public safety issue	• No contaminated soil sites are anticipated, however; if suspect soils are uncovered, work should stop immediately and the Union Gas Environmental Department should be contacted. • Clean up contaminated material following Company and MOECC procedures.

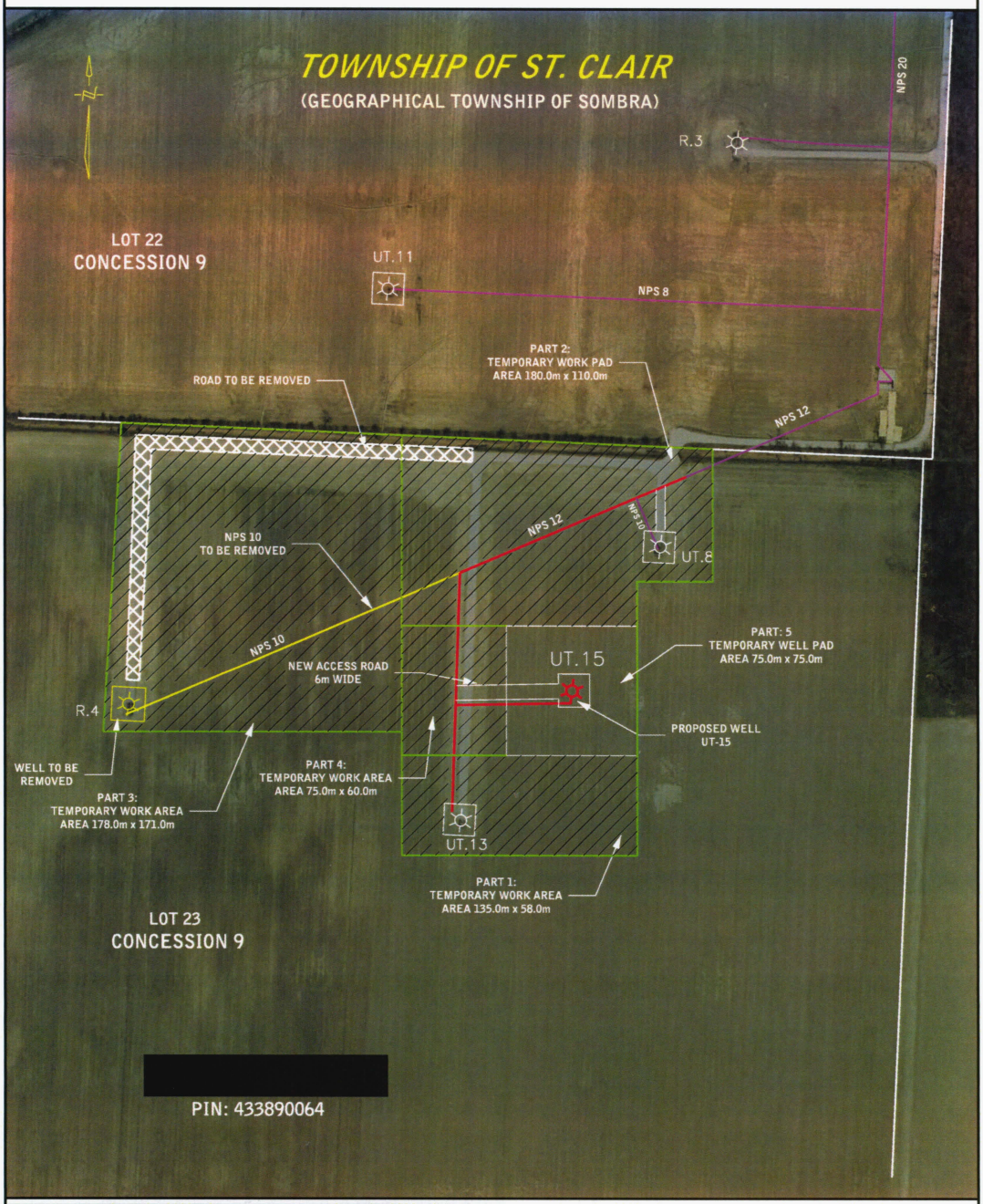
APPENDIX A

PROJECT MAPPING


Union Gas Limited – 2017 Terminus Well Replacement Project
OIL SPRINGS
N
Oil Springs Line
Tecumseh Road
St Clair Parkway
Stanley Line
Indian Creek Road
Township Of Enniskillen
Township Of Dawn-Euphemia
Mccallum Line
Wilkesport Line
Burman Line
Highway 40
Kimball Road
Township Of St. Clair
Township Of Dawn-Euphemia
Bentpath Line
Smith Line
Holt Line
Terminus
Tulloch Line
Ward Line
Kerr Line
Pretty Road
Brigden Road
Mandaumin Road
Lambton Line
Charlemont Line
Whitebread Line
Township Of St. Clair
Municipality Of Chatham-Kent
Kent Line
Forhan Street
Langstaff Line
Stewart Line
Mccreary Line
WALLACEBURG
DRESDEN
Baseline
Prince Albert Road
Centre Sideroad
LOT 22, CON 10
LOT 23, CON 10
LOT 24, CON 10
LOT 25, CON 10
Holt Line
LOT 22, CON 9
LOT 23, CON 9
LOT 24, CON 9
LOT 25, CON 9
Brigden Road
Tulloch Line
LOT 22, CON 8
LOT 23, CON 8
LOT 24, CON 8
LOT 25, CON 8
Legend
Proposed New Well
Terminus Designated Storage Area
0
2.5
5
km

PROPOSED WELL EXPANSION - TERMINUS PAD

PROPERTY SKETCH
SHOWING APPROXIMATE LOCATION OF
PROPOSED TEMPORARY LAND USE RIGHTS FOR
S 1/2 LT 23 CON 9 SOMBRA; ST. CLAIR
TOWNSHIP OF ST. CLAIR
PIN: 433890064



[redacted]

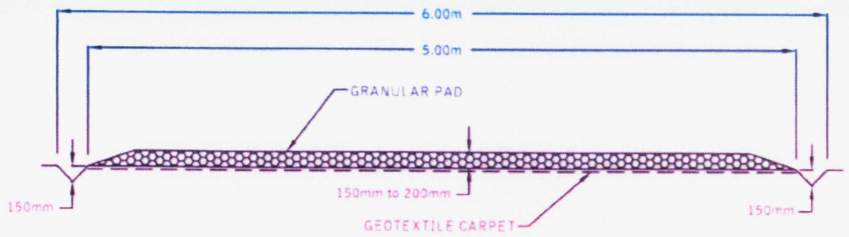
10 0 20 40 60 METRES
20 0 20 40 60 80 100 200 FEET

PART	APPROX. SIZE (metres)		APPROX. AREA		PART	APPROX. SIZE (metres)		APPROX. AREA	
	(width)	(length)	(hectares)	(acres)		(width)	(length)	(hectares)	(acres)
PART 1:	135.0	58.0	0.78	1.93	ACCESS ROAD	10.0	70.0	0.07	0.17
PART 2:	180.0	110.0	1.98	4.89					
PART 3:	178.0	171.0	3.04	7.51					
PART 4:	75.0	60.0	0.45	1.11					
PART 5:	75.0	75.0	0.56	1.38					

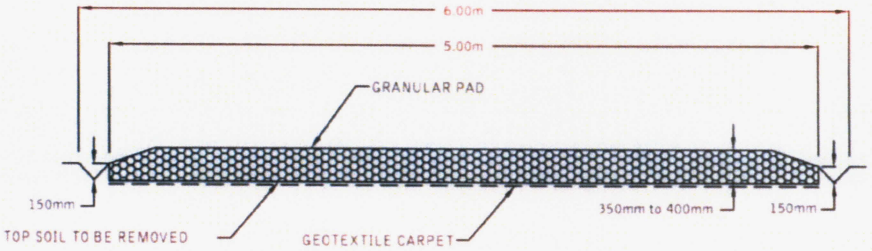
PIN # 433890064	SCALE: 1:2000	*ALL DISTANCES ARE APPROXIMATE.	DATE: 2017/02/15
			CAD NUMBER: PL1720

APPENDIX B

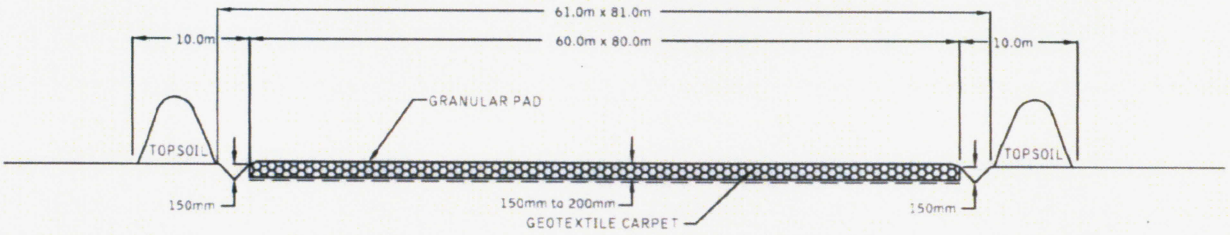
TYPICAL DRAWINGS



TYPICAL TEMPORARY ACCESS ROAD



TYPICAL PERMANENT ACCESS ROAD



TYPICAL WELL DRILLING WORK AREA

uniongas
A Spectra Energy Company

TYPICAL ACCESS ROAD AND WORK AREA DETAIL

UNION GAS PIPELINE CONSTRUCTION TYPICAL

DRAWN BY	DATE	SCALE	SIZE	FILE REVISION DATE
Gary Hanuszak	2013-03-23	N.T.S.	A	2013-00-00
APPROVED BY	DATE			
George Adams	2013-03-23			
AC/DRAW CODE		DRAWING NUMBER		REVISION
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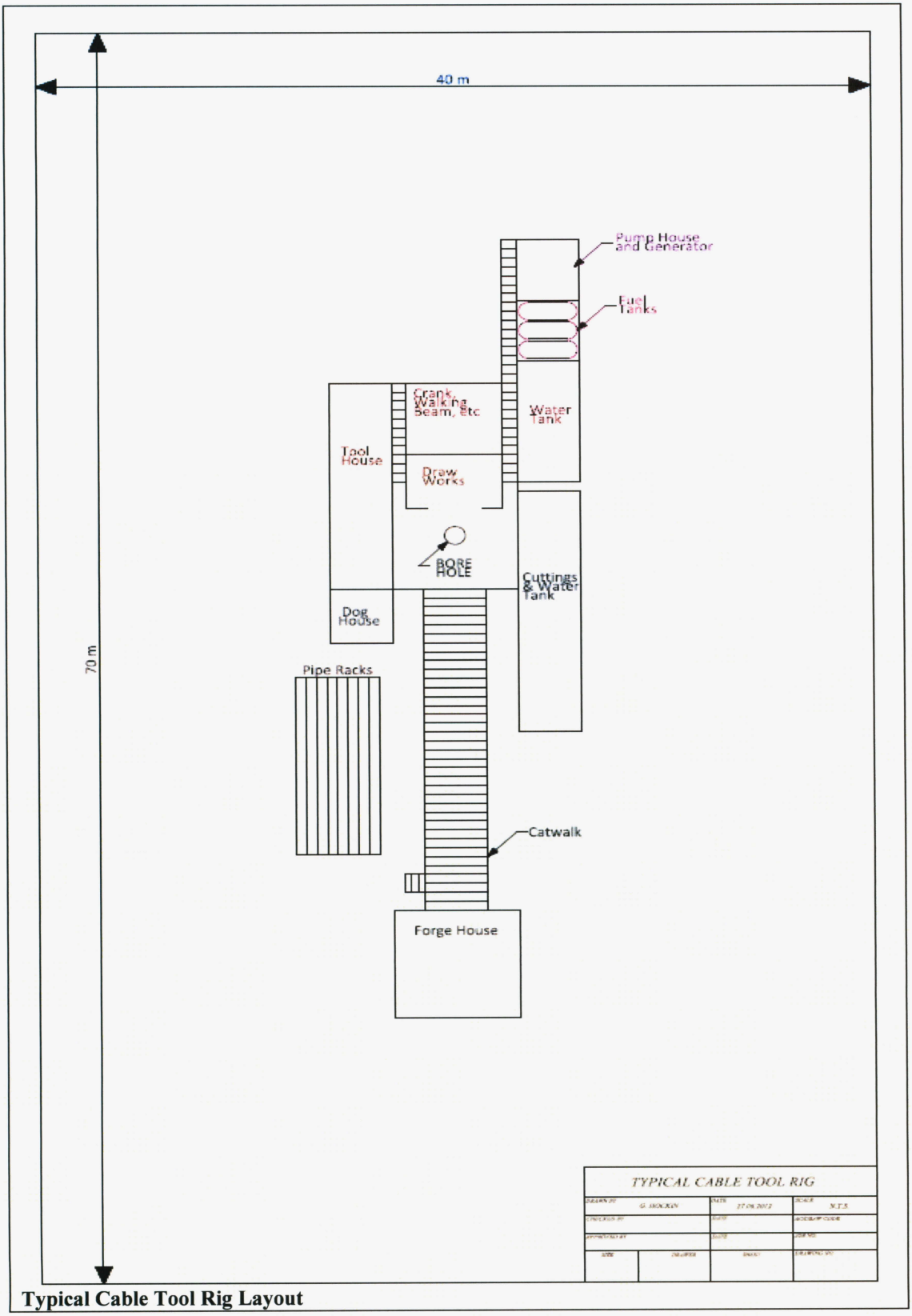

Typical Cable Tool Rig Layout