File CG3198

Town of Strathmore

Strathmore Town Hall Project
Phase I and Phase II
Environmental Site Assessment



Clifton

Executive Summary

Clifton Engineering Group. was retained by the Town of Strathmore to conduct a Phase I and Phase II Environmental Site Assessment (ESA) for the Strathmore Town Hall Project, including Kinsmen Park and portions of Lambert Park, in Strathmore, Alberta (Site). It is our understanding that the ESAs are required as part of the due diligence process prior to construction.

Based on the historical research, database searches, and Site observations, there is evidence of actual contamination associated with the Esso Bulk Plant and Fertilizer Distribution Facility and Alberta Wheat Pool station on-Site, the potential of untested imported fill on-Site, and potential contamination from the Hi Ho Gas Bar to the north of the Site. A Phase II ESA to assess the soil and groundwater conditions on-Site was recommended. The Phase II ESA was completed in conjunction with the geotechnical drilling to minimize the disturbance to the Site.

The Phase II ESA was conducted to determine the presence and nature of any potential environmental impacts as identified in the Phase I ESA.

The investigation included advancing 12 boreholes completed as monitoring wells to depths ranging from 5.9 m to 9.6 m below ground surface (bgs). Seven boreholes were located in the northern portion of the Site in the area of the proposed Town Hall building and parking lot and five were located in the eastern portion of the Site in and near the proposed parking lot. All boreholes were completed as monitoring wells.

During the investigation, the following laboratory analyses were completed for both soil and/or groundwater:

- Benzene, toluene, ethylbenzene, xylenes (BTEX) and PHC fraction F1;
- PHC fractions F2 – F4;
- Volatile organic compounds (VOCs);
- Polycyclic aromatic hydrocarbons (PAHs);
- Salinity;
- Metals;
- Nutrients; and
- Herbicides/pesticides.

Analytical results for both soil and groundwater were compared against the Alberta Environment (AEP), 2019, *Alberta Tier 1 Soil and Groundwater Remediation Guidelines* (AEP 2019 Tier 1 Guidelines) for natural and residential/parkland land use for fine-grained soil.

Based on the findings of the Phase II ESA, we conclude the following:

- The Phase II ESA identified subsurface soil and groundwater impacts, above the appropriate regulatory guidelines, in all areas of the proposed development. These included the areas of the proposed Town

Hall building, the new parking lot to the west of the building, and the parking lot to the east of the building. Contaminates of concern included BTEX, PAHs, VOCs, nitrate and nitrites, and herbicides/pesticides.

- The depths of the impacts exceeding applicable regulatory guidelines range from surface to 3.81 m and vary in depth across the Site. It is important to note that the Phase II ESA was implemented to identify the presence and nature of potential impacts. It was not designed to delineate the areal and vertical extent of any potential impacts. As such, the extent of the identified impacts at the Site are not known and further investigation would be required to fully delineate both the horizontal and vertical extents of the impacts.

- Contaminated soil will be encountered during re-development of the Site at depths that would be involved with all phases of the proposed work, from shallow depths for grading for paving and landscaping, to intermediate depths for utility excavations, and for deep depths for the proposed basement excavation and piling. It should also be noted that although vertical delineation of the impacts has not yet been attempted, the impacts that have been identified have all shown to be in the fill and soils above the clay till.

- The concerns to be encountered during work on the Site and potentially remaining on Site after redevelopment are the potential petroleum hydrocarbon (BTEX, PHC Fractions, PAHs) and VOC exposure pathways, which include soil and groundwater ingestion, dermal contact, and vapour inhalation.

The Phase II ESA was not intended to delineate the areal and vertical extents of impacts. Further investigation would be required to fully define the VOC impacts and if they extend offsite to the north and west of the re-development, and similarly with the BTEX and PAH impacts on the east side of the Site.

Based on the conclusions of the Phase II ESA we recommend the following:

If further investigation cannot take place prior to construction activities, soil sampling should be conducted during the excavations being planned for the Site. This would provide the opportunity to define the limits of the impacts in those areas while the contractors continue their work. This will also serve to identify if VOC impacts are present at the locations and depths where the any new underground utilities are to be located. The excavations may require lining to prevent the clean backfill around the pipes from becoming impacted from soils remaining on the walls or base that are VOC impacted. This will also help protect new infrastructure from being indirect contact with impacted soil. Sampling will also serve to help segregate excavated soils that can be used elsewhere or that must be removed for offsite disposal at an approved landfill.

Information in the area of the proposed Town Hall should be collected specifically to assist in the design of a subslab depressurization system for vapours from any VOCs left beneath the building. A soil vapour monitoring program should also be considered once the building is completed in order to fully assess potential VOC vapours beneath the completed building.

Soil sampling should be conducted during excavation work planned for the abandonment/relocation of existing underground utilities. This will help to determine if there is potential risk for VOCs to migrate to Kinsman Lake.

During Site re-development, work should be conducted following the Soil and Contaminate Management Plan (Plan) that was prepared by Clifton to address the identified and potential environmental impacts at the Site. The Plan was presented in the document, *Soil and Contaminate Management Plan, Town Hall Building1, Parklane Drive, Strathmore, AB*, dated 20 June 2019. The objective of the Plan is to provide the Town and its contractors an outline of the procedures to follow when conducting excavation activities in the areas of the previously identified and potential subsurface environmental impacts at the Site.

Monitoring wells installed as part of the Phase II ESA should be properly decommissioned prior to construction work if they are located in areas to be affected by construction. If not properly decommissioned, the monitor wells can become a direct conduit from the surface to the groundwater.

A Risk Management Plan should be prepared to address any remaining soil and groundwater impacts.

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1.0 Introduction

1.1 General

Clifton Engineering Group. was retained by the Town of Strathmore to conduct a Phase I and Phase II Environmental Site Assessment (ESA) for the Strathmore Town Hall Project, including Kinsmen Park and portions of Lambert Park, in Strathmore, Alberta (Site). It is our understanding that the ESAs are required as part of the due diligence process prior to construction.

1.2 Authorization

Thomas Hansen, with the Town of Strathmore, provided authorization to acquire records and documents related to the Site on their behalf, and to access the Site for a Site visit, on 25 February 2019.

Authorization for the Phase II ESA was provided on 24 April 2019.

1.3 Purpose

The purpose of these assessments was to evaluate and assess potential environmental contamination associated with historic use of the Site and surrounding properties, prior to the construction of the new Strathmore Town Hall.

2.0 Project Components

2.1 Phase I ESA

The purpose of the Phase I ESA was to identify and evaluate potential environmental liabilities associated with the Site as a result of past and current activities on the Site or adjacent properties. The Phase I ESA was based on information gathered during site research, site reconnaissance, and a review of historical and present uses of the Site and adjacent lands.

2.2 Phase II ESA

The purpose of the Phase II ESA was to assess the environmental condition of the Site associated with the potential environmental concerns associated with the Phase I ESA.

3.0 Phase I ESA

3.1 Objective and Scope of Work

The Phase I ESA was completed in accordance with the guidelines outlined in the CSA *Phase I Environmental Site Assessment* standard Z768-01 (R2016). The scope of work included the following tasks:

- Contacting provincial and civic environmental departments, as well as other agencies, to obtain relevant file information on the Site and adjacent properties;
- Reviewing historical and current information sources, including aerial photographs, land title documents, fire insurance plans, groundwater well records, geological and topographic maps, and historical directories;
- Requesting written and online information from regulatory bodies, including: the Alberta Environment and Parks (AEP) Regulatory Approvals website, the AEP Environmental Site Assessment Repository (ESAR) website, and the Ecolog Environmental Risk Information Services (ERIS) database;
- Conducting a Site visit with specific focus on the physical features of the Site, including, but not limited to evidence of underground storage tanks (USTs), above ground storage tanks (ASTs), staining, chemical storage areas, drainage, wells and other related environmental concerns;
- Interviewing individuals knowledgeable about the Site and its history; and
- Preparing a report presenting the information collected during the database searches, historical review, interviews, and the Site reconnaissance. The report also presents Clifton's opinion as to the present environmental condition of the Site with respect to actual or potential contamination and other associated environmental liabilities.

A summary of the information sources reviewed for this report is presented in Section 10.

The Phase I ESA does not include sampling or testing of soil, groundwater, surface water, air or building materials, nor does it include a review or audit of any compliance issues or environmental management systems which may pertain to the Site. This investigation should not be considered a hazardous building materials assessment.

3.1.1 Deviations from the CSA Standard

Deviations to the CSA Phase I Environmental Site Assessment standard Z768-01 (R2016) in the Phase I ESA were a limited observation of the Site, due to overall size. The Site was walked, staying primarily to designated pathways.

3.2 Site Characterization

3.2.1 Site Property

A Site Location Map is provided for reference as Figure 1. A Land Use Map for the Site and surrounding properties is provided as Figure 2. A map of the Site with reference to surrounding properties, using a Google Earth Pro® image (©2019 Google. Image ©2019 DigitalGlobe, 2012) is provided in Figure 3.

Aerial photographs detailing important features of the Site and adjacent properties at approximately ten-year intervals are provided in Figures 4 to 14. Figures are provided in Appendix A.

3.2.2 Land Use and Surrounding Properties

The Site is located in the southern portion of the Town of Strathmore, north of Highway 1. The Alberta Township System (ATS) description of the Site is the southwestern quarter of Section 14, Township 24, Range 25, West of the 4th Meridian (SW ¼ 14-024-25 W4M).

The Site occupies approximately 12.25 hectares (30.3 acres) and is a park area. The properties surrounding the Site are:

- North: Park Lane Drive, and then Lambert Park and a building complex;
- East: Hi Ho Gas Bar (Property #1), Western Irrigation District canal, and Centre Avenue, then residential housing;
- South: Strathmore Fire Department; and
- West: Various commercial businesses and residential housing on the west side of Lakeside Boulevard.

Please refer to Figure 3 for the locations of the Site and surrounding properties.

3.2.3 Setting

Physical Setting Reports provide comprehensive information about the physical setting of a Site, and provide an overview of the topographic, geologic, hydrogeologic, and soil conditions to assess the impact of migration of contaminants and the potential impact on soil and groundwater. A Physical Setting Report was ordered for the Site. A copy of the Physical Setting Report completed on 18 March 2019 is presented in Appendix B. The results are summarized in the sections below.

3.2.3.1 Topography

The local topography is the physical configuration of the ground surface in the area of the Site, whereas regional topography is the overall expression of surface trends over a much larger area. Based upon a review of the Atlas of Canada – Toporama map (National Resources Canada; July 2013), the surface elevation of the Site is approximately 970 m above sea level. The local topography slopes towards the Site from the north- northeast.

3.2.3.2 Geology

Soil type is important in determine its permeability as well as the leachability of contaminants, clay content, acidity, mineral and organic content, oxygen levels, and other factors that influence the migration of contaminants.

3.2.3.2.1 Surficial Soils

The surficial soil of the Site and surrounding properties within 300 m of the Site consist of unclassified miscellaneous disturbed land.

3.2.3.2.2 Surficial Geology

The surficial geology of the Site and surrounding properties within 300 m consists of fluted moraine from the Pleistocene age. The sediments are primarily glacially streamlined till but may locally include stratified glaciolacustrine or glaciofluvial sediments. The resulting terrain varies from alternating furrows and ridges to smoothed hills, all parallel to the ice flow direction.

3.2.3.2.3 Bedrock Geology

The bedrock geology of the Site and surrounding properties within 300 m is representative of the Scollard Formation from the Upper Cretaceous and Paleogene age. The Scollard Formation sediments formed in alluvial environments, from moving bodies such as rivers and streams. The sediments are mainly composed of sandstone, siltstone, and mudstone.

3.2.3.3 Hydrogeology

Regional groundwater flow is the overall direction of the deeper groundwater flow in a given area. Local groundwater flow direction and movement may differ from regional groundwater flow direction and is dependent upon local topography and/or subsurface soil conditions, as well as land development and soil disturbances. Groundwater levels will fluctuate seasonally and in response to climatic conditions. The predicted local shallow groundwater flow direction for the Site would be towards the southwest, consistent with the topography on-Site.

It is unclear if the lake in Kinsmen Park is lined, and how it may impact the regional groundwater regime.

3.2.3.4 Radon

Radon is a radioactive gas produced by the decay of uranium found naturally in the environment (soil, rock, or water). Radon is invisible, odourless, and tasteless, and emits ionizing radiation. As a gas, it can move through the soil and escape to the atmosphere or enter buildings through cracks in foundation walls and floors, or gaps around pipes and cables. When radon is confined to enclosed or poorly ventilated spaces, it can accumulate to high levels. Radon levels are generally highest in basements and crawl spaces because these areas are nearest the source and are usually poorly ventilated.

As the Site is currently open to the atmosphere and the buildings on-Site are well ventilated, it is unlikely that radon, if present in the subsurface, would accumulate on-Site.

3.3 Site History and Records Review

To complete a representative review of historical records for the Site, the following sources of information were consulted:

- Historical aerial photograph review;
- Land title documents;
- Ecolog ERIS Report;
- Alberta Energy Regulator (AER) Abacus Datagraphics (Abadata) web-based mapping system;
- Alberta Energy Regulator;
- AEP Groundwater Information System;
- AEP Regulatory Approvals Centre;

- AEP – Environmental Site Assessment Repository;
- Company records including any previous environmental reports.

3.3.1 Aerial Photographs

Aerial photographs are used to determine the current and historic land uses of the Site and surrounding properties. Features which may be observable from the air, depending upon the scale of the aerial photograph, may include structures and improvements, tank farms, pits, ponds and lagoons, drainage areas, access roads, fill and disturbed areas of soil, vehicles and other items stored on a property, as well as vegetative cover.

Aerial photographs from 1950, 1963, 1967, 1974, 1977, 1983, 1988, 1994, 1997, 2004, 2008, 2012, and as well as a 2018 Google Earth Pro® image, were reviewed to determine general historic land use at the Site (Figures 3 to 15). The aerial photographs were acquired through the AEP website and Google Earth Pro®. A summary of the historic aerial photograph review is provided below.

Summary of Historic Aerial Photographs

Year	Figure	Description
1950	Figure 4	• There is some development on the east side of the Site, east of the CP rail line that runs through the eastern portion of the Site. There are at least two structures visible. Kinsmen Lake is present on the west side of the Site. • There is some development to the north of the Site. The scale of the aerial photograph makes it difficult to determine what the nature of the development is. • There is some country residential development to the southwest of the Site. The remainder of the property to the south is natural land. • To the south of the Site is some development along Highway 1. It is difficult to determine the nature of the development from the aerial photograph. • To the west of the Site is the Town of Strathmore, with notable grid development.
1963	Figure 5	• There has been additional development to the east of the CP rail line, consistent with the former Esso bulk station facilities and Alberta Wheat Pool (AWP) Strathmore Station fertilizer storage facility. There is some ground disturbance to the south of Kinsmen Lake.

Summary of Historic Aerial Photographs		
Year	**Figure**	**Description**
		• There has been additional development to the north of the Site. The property associated with the Lawrence Anderson Property (Property #2) discussed later in this report has been developed. • There has been further development to the south of the Site, the nature of which cannot be determined from the aerial photograph. • There has been continued development and expansion of the Town of Strathmore to the west.
1967	Figure 6	• The Site remains largely unchanged from the 1963 aerial photograph. There is a structure in the northwestern corner of the Site. • The Town of Strathmore has continued to grow relative to the 1963 aerial photograph. • The remainder of the surrounding properties appear largely unchanged from the 1963 aerial photograph.
1974	Figure 7	• Park Lane Drive has been constructed, and runs through the northern portion of the Site, separating the current Lambert and Kinsmen parks. The portion of the Site south of Kinsmen Lake has been graded into a track. • The current alignment of Centre Street has been constructed as a through road to the east of the Site. • There has been development to the east of the Site, extending north from Highway 1. • To the south of the Site, there has been development of what appears to be a storage facility. • The remainder of the surrounding properties appear largely unchanged from the 1967 aerial photograph.
1977	Figure 8	• The Site appears to be largely unchanged from the 1974 aerial photograph. There appears to be a small building on the northern portion of the Site in Lambert Park. There appears to be material piled to the west of the CP rail line. • There has been substantial residential construction to the north of the Site. • The remainder of the surrounding properties appear largely unchanged from the 1974 aerial photograph.

Summary of Historic Aerial Photographs		
Year	**Figure**	**Description**
1983	Figure 9	• The parking lot at the north portion of Kinsmen Park has been constructed. There is also a visible walking path loop to the east of Kinsmen Lake, and two docks have been constructed along the south shore of the Lake. • A building has been constructed to the north of the Site, on a lot which is currently empty and not related to any known business in the vicinity. • There has been additional residential development to the northeast of the Site. • The remainder of the surrounding properties appear largely unchanged from the 1977 aerial photograph.
1988	Figure 10	• The parking lot on-Site has been completed. There have been trees planted around the walking path on-Site. Two additional docks were added to the north side of Kinsmen Lake. The former Esso bulk station facilities have been removed to the east of the CP rail line. There are no buildings associated with that property. • The Hi Ho Gas Bar has been constructed to the north of the Site. The structure that was previously north of the Site has been removed. • The remainder of the surrounding properties appear largely unchanged from the 1983 aerial photograph.
1994	Figure 11	• The Site appears largely unchanged from the 1988 aerial photograph. • The Lambert Village community has been constructed north of the Hi Ho Gas Bar. • Residential development has continued to the northeast of the Site. • The remainder of the surrounding properties appear largely unchanged from the 1988 aerial photograph.
1997	Figure 12	• All infrastructure on-Site east of the CP rail line, associated with the Esso bulk station and AWP Strathmore Station, has been removed. The CP rail line also appears to have been removed. • The remainder of the Site appears largely unchanged from the 1994 aerial photograph.

Summary of Historic Aerial Photographs		
Year	**Figure**	**Description**
		• There has been some development to the east of the Site, south of the Western Irrigation District Cannel. • The remainder of the surrounding properties appear largely unchanged from the 1994 aerial photograph.
2004	Figure 13	• The Site appears to be highly vegetated with mature trees. The area east of the former CP rail line appears to have been reclaimed. • The remainder of the Site appears largely unchanged from the 1997 aerial photograph. • There has been continued development to the east of the Site. The development appears to be storage. There is residential development further to the east. • There has been further commercial development to the south of the Site, across Highway 1. • The remainder of the surrounding properties appear largely unchanged from the 1997 aerial photograph.
2008	Figure 14	• The Site appears to be largely unchanged from the 2004 aerial photograph. The current splash park is visible at the southern end of Kinsmen Lake. • There has been significant commercial and residential development to the east of the Site. • The remainder of the surrounding properties appear largely unchanged from the 2004 aerial photograph.
2012	Figure 15	•
2018	Figure 3	•

3.3.2 Land Title Documents

There were only three land titles available for the Site, indicating that the Site has been owned by the Town of Strathmore since 1970. No additional land titles were retrieved for the Site. A copy of the land title documents is provided in Appendix C.

3.3.3 Fire Insurance Plans

Fire Insurance Plans (FIPs) are large-scale urban maps that may provide construction details of buildings, the location and contents of above ground storage tanks (ASTs) and underground storage tanks (USTs),

and occupancy or use of individual buildings or groups of buildings. FIPs are generally available for various years from 1908 to 1972 in major cities. As the Site is in a rural area, no FIPs were available.

3.3.4 Historical Directories

Historical (Henderson) directories can be consulted for information regarding occupancy and land use on a yearly basis up to 1991 in major cities. As the Site is a rural township, Henderson Directories were not available.

3.3.5 ERIS Report

ERIS reports are a compilation of the searches of numerous federal, provincial, local, and private databases based around a central point or area of search. The results identify potential source areas of information that are then discussed based upon a certain distance from the Site. Searches are completed for an area within 300 m of the Site boundary. The searches also return records of reports that did not show locations, such as municipal addresses, legal descriptions, etc. As such, the locations of these "unplottable" records, other than distance from the Site, are unknown.

The ERIS report was completed on 18 March 2019 and can be found in Appendix D. The results for the Site and the surrounding properties are described in detail below.

3.3.5.1 Site Records

Records were returned for the Site for the following databases:

- Well Licenses, which provides well license locations from the AER;
- Alberta Oil and Gas Wells, which contains details on oil and gas wells such as well name, depth, and licensee;
- Waste Generators Summary, which provides information on any party consigning waste for storage, transport, treatment, or disposal; and
- Oil and Gas Wells, which is the current database to the Alberta Oil and Gas Wells database.

All three well records are for the same well (Licence No. 0267711), a gas development well drilled in 2002. The well is owned by Pancanadian Energy Corporation and was listed as abandoned in 2014.

The waste generator records apply to the adjacent Town of Strathmore Fire Hall to the south and include flammable and corrosive gases and liquids.

3.3.5.2 Surrounding Property Records

Records were returned from the following databases for surrounding properties within 300 m of the Site:

- ERIS Historical Searches, which provides a list of other ERIS searches;
- Environmental Site Assessment Repository, which provides reports regarding assessed or reclaimed properties;
- Petroleum Tank Management Association of Alberta (PTMAA) Fuel Storage Tanks, which includes active and historic fuel storage tank summaries;

- Waste Generators Summary, as above;
- Retail Fuel Storage Tanks, which is a list of retail properties with fuel storage tanks on their property;
- Scott's Manufacturing Directory, which includes voluntary listings of manufacturers; and
- Alberta Water Well Information Database, which is a list of water wells maintained by AEP, accurate to the quarter section.

Of interest from these results are the ESAR, PTMAA Fuel Storage Tanks, and Retail Fuel Storage Tanks databases, which are discussed below.

3.3.5.2.1 ESAR

The ESAR database included reports on the following properties:

- A former Esso Service Station located approximately 17 m to the east of the Site across the historic Canadian Pacific Rail (CPR) tracks. Records include reports for excavation of impacted soils, monitoring and sampling activities, and supplemental investigations. This property is known to be on the Site;
- The Hi Ho Gas and Food Bar located approximately 35 m north of the Site along Parklane Drive. Available records include a Phase II ESA;
- Lar-Don Rentals former Service Station located approximately 40 m west of the Site along Lakeside Blvd. Records include a remedial plan, Phase II and Phase III ESAs, and a UST remediation;
- The Strathmore Auto Spa located approximately 80 m south of the Site along Lakeside Blvd. Records include assorted email correspondence regarding analytical testing;
- Strathmore Antique Auto Parts located approximately 120 m west of the Site. The available records indicate that it was formerly a PetroCanada Service Station, with records for Phase II ESAs, Record of Site Condition (ROSC) forms, and risk management activities;
- A property owned by Lawrence Anderson located approximately 170 m north of the Site, with a record for a Phase II ESA;
- A PetroCanada Bulk Keylock located approximately 170 m south of the Site. Records include a UST removal, an off-site subsurface investigation, and various monitoring reports;
- Leroy's Race Trac Gas located approximately 175 m southeast of the Site. There is one record for an ESA on the property;
- The Strathmore Esso and General Store located approximately 215 m southwest of the Site. Records include a PTMAA report;
- The Strathmore Co-op Grocery Store located approximately 225 m west of the Site. Records include a Phase II ESA and ROSC; and
- The AGT Switching Station located approximately 235 m west of the Site. Records include a Phase II ESA and a report summarizing the installation of a passive ventilation system.

Relevant records returned from ESAR are discussed in greater detail in Section 3.10.

3.3.5.2.2 PTMAA Fuel Storage Tanks

Records regarding fuel storage tanks within 300 m of the Site were as follows:

- Three USTs associated with the Strathmore Gas Plus located along Lakeside Blvd, approximately 95 m south of the Site. The records are for two gasoline and one diesel UST, all with overfill protection;
- Five USTs associated with the Hi Ho Gas and Food Bar located approximately 35 m north of the Site along Parklane Drive. The records are for five gasoline USTs with overfill protection;
- Four ASTs associated with the Strathmore Petro-Pass located approximately 185 m south of the Site. The records are for three gasoline and one diesel AST, and one tank replacement;
- One tank associated with the Telus – Strathmore Telephone Exchange, located approximately 185 m west of the Site, which was reportedly removed;
- Four USTs associated with the Strathmore Esso and General Store, approximately 225 m southwest of the Site, all of which were reportedly removed as they were no longer required. There was on diesel UST and three gasoline USTs; and
- Three USTs associated with D.C.'s Mohawk, approximately 225 m south of the Site, which were reportedly removed as they were no longer required. There were two gasoline USTs and one diesel UST.

Only the Hi Ho Gas and Food Bar is located hydraulically and topographically upgradient of the Site. This property is discussed further in Section 3.10.

3.3.5.2.3 Retail Fuel Storage Tanks

There were records for retail fuel storage at two locations: Calgary Co-operative Association Ltd. (approximately 200 m west of the Site), and the Strathmore Esso and General Store (approximately 225 m southwest of the Site).

3.3.5.3 Unplottable Entries

Unplottable entries are records that are missing key pieces of information that prevent and accurate location identification as part of the ERIS search, but are related to properties within the 300 m buffer. Four unplottable entries were returned as part of the ERIS search.

None of the provided descriptions allow for the records to be more accurately located. There is one fuel storage tank listing, which is located along Highway 1. Highway 1 is south of the Site, making this property hydraulically and topographically downgradient of the Site. Other records were for pesticide supply for the Wheatland County, and the Scott's Manufacturing Directory for a drilling company.

3.3.6 Alberta Energy Regulator

The Abadata web-based oilfield mapping program provides AER information regarding gas and oil pipelines, plants, spills, releases and historic or current wells in the vicinity of the Site. A search of this database is performed through ERIS within 300 m from the boundary of the Site. Clifton personnel have also conducted a search of the Abadata web-based oilfield mapping program for the Site and surrounding properties within 300 m from the Site boundary.

The search was completed on 29 April 2019 and can be found in Appendix E

The search indicated that there is one well on-Site. The EMBER ENTICE 6-14-24-25 well (License #0267711) is an abandoned natural gas well located in the northwestern corner of Kinsmen Park. The well head is in the adjacent section (SW ¼ 13-024-25 W4M). Records of spills or complaints were not returned by the Abadata search.

3.3.7 AEP – Groundwater Information System

The AEP Groundwater Information System (GIS) website provides information regarding current water well locations within the province of Alberta. A search of this database is completed within 300 m of the boundary of the Site.

There are 37 water wells located either on-Site or within 300 m of the Site. Based on the reconnaissance report, four of the wells have been decommissioned. The active wells are primarily for domestic or municipal use. Two wells are listed for domestic and stock use, one well is for industrial use, and three wells have unknown listed for the intended use. A copy of the search results can be found in Appendix F.

3.3.8 AEP – Regulatory Approvals Centre

Approvals, licenses, registrations, and permits are issued by AEP under the *Provincial Water Act* and *Environmental Protection and Enhancement Act*.

A search of the Regulatory Approvals Centre website was conducted using the legal land description for the Site. The search returned 101 records for active and inactive approvals for the legal land description SW ¼ 14-024-25 W4M. None of the records appear to pertain directly to the Site but may be related to services that pass beneath the Site. The results of the Regulatory Approvals Centre can be found in Appendix G.

3.3.9 AEP – Environmental Site Assessment Repository

AEP ESAR provides scientific/technical information, which may include:

- Reports documenting the nature and extent of soil, ground, and surface water contamination;
- Remedial measures taken to clean up the Site, or status of the Site; and
- External correspondence between the submitter and the Department of Environment pertaining to the reports.

A map search of the ESAR database was conducted for the Site and surrounding areas within 300 m of the Site boundary. The results of the AEP – Environmental Site Assessment Repository can be found using the meridian, range, township, and section for the Site at http://esar.alberta.ca/esarmain.aspx.

3.3.9.1 Site

A map search of the ESAR database was conducted for the Site. The former Esso Service Station was located on the east side of the Site, east of the former CP rail line. There were five reports returned for the property, as follows:

- EBA Engineering Consultants Ltd., August 1991. *Site Investigation and Evaluation of Subsurface Conditions, Parklane Sewer*. (EBA 1991 Investigation);
- EBA, February 1994. Review of Previous Environmental Site Assessments for the Proposed Parklane Development, Strathmore, Alberta. (EBA 1994 Historic Review);
- O'Connor Associates Environmental Inc., April 1994. *Former Esso Bulk Fuel and Fertilizer Plant, Strathmore, Alberta* (O'Connor 1994 Investigation);
- O'Connor, November 1995. *Excavation of Petroleum Impacted Soils, Former Esso Bulk Plant and Fertilizer Distribution Facility, Strathmore, Alberta, Location No. 88542* (O'Connor 1995 Excavation); and
- O'Connor, July 1996. *Former Esso Bulk Plant and Fertilizer Distribution Facility, Strathmore, Alberta, Location No. 88542* (O'Connor 1996 Monitoring).

EBA 1991 Investigation

At the time of the EBA 1991 Investigation, the CPR right-of-way (ROW) was still in place. The Imperial Oil (Esso) bulk station facilities had been removed. It was the understanding of EBA that the Town intended to acquire the abandoned ROW. There was evidence of soil and groundwater contamination identified by EBA along the CP ROW. The Management of Underground Storage Tanks (MUST) guidelines were exceeded for benzene in soil (composite sample), and toluene and total petroleum hydrocarbons (PHCs) in groundwater for the Level I, or most sensitive, criteria.

EBA 1994 Historic Review

EBA completed a review of multiple reports for the Esso bulk fuel station and AWP Strathmore station, both located east of the CP ROW, and collected groundwater samples from available standpipes for analysis. Based on the review done by EBA, the Esso bulk fuel storage facility was decommissioned in the 1970s. According to EBA, facilities remaining on the property at the time of the 1994 Historic Review were to be decommissioned as part of the redevelopment plan for the property.

There were reported exceedances of the Level III MUST guidelines on the Esso property adjacent to historic ASTs. At the AWP Strathmore Station Grounds, there were elevated concentrations of metals (arsenic, boron, cadmium, lead, selenium, and zinc) in composite soil samples. One discrete soil sample was below the Level I MUST guidelines for hydrocarbon constituents. The presence of metals at the AWP Grounds was not considered by EBA to adversely impact proposed development.

During a site monitoring visit in February 1994, EBA encountered approximately 8 mm of phase-separated petroleum product in a piezometer on the former IOL property. It was recommended that IOL address this contamination, and that the site would otherwise be appropriate for commercial and residential development.

O'Connor 1994 Investigation

O'Connor monitored and sampled the existing Stanley piezometers on the former Esso property, and advanced 12 additional boreholes. There was approximately 1 mm of phase-separated product encountered in the same piezometer where EBA had originally encountered it. There was no free product noted in other piezometers.

Concentrations of benzene, toluene, ethylbenzene, and total xylene (BTEX) parameters exceeded the MUST Level II Guidelines in two soil samples of the four submitted based on headspace vapour screening. The MUST Level II guidelines were exceeded for total petroleum hydrocarbons (TPH) in three soil samples. Groundwater samples collected surrounding the former AST area exceeded the MUST Level I criteria for PHCs, and the Level II criteria for benzene. According to O'Connor, the monitoring results suggest that dissolved PHCs in the groundwater may extend off-site to the southwest.

O'Connor 1995 Excavation

O'Connor supervised the excavation and treatment of PHC-impacted soils on the former Esso property. An above-ground treatment cell, lined with polyethylene, was used to treat soil via aeration and enhanced biodegradation. The soils within the treatment cell were tilled twice weekly to promote aeration. Approximately 1,100 m^3 of soil was excavated; the excavation was left open pending the results of the remediated soil. The limits of the excavation were found to have concentrations of PHCs below the Draft Remediation Guidelines for Petroleum Storage Tank Sites (Alberta Environmental Protection, 1994). O'Connor recommended continuing to promote aeration and biodegradation within the treatment cell until the soils satisfy Level I risk management criteria, due to proposed future use of the property for residential development.

O'Connor 1996 Monitoring

The remediation excavation at the former Esso property was backfilled with soil from the treatment cell following shallow probe vapour measurements to confirm the *in-situ* vapour concentrations did not exceed 50 parts per million (ppm). Following excavation, nine test pits were advanced in the backfilled excavation to obtain confirmatory soil samples from the backfilled soil. The soil sample results from the test pits indicated that the concentrations were below the governing criteria. O'Connor indicated that the property met the criteria for residential use following treatment.

3.3.9.2 Surrounding Properties

The ESAR search returned records for nine properties within 300 m of the Site. Only records for properties located hydraulically upgradient of the Site, or within 100 m downgradient, were reviewed. A review of these files is provided below.

3.3.9.2.1 Hi Ho Gas and Food Bar

The Hi Ho Gas and Food Bar (Property #1) is located approximately 35 m north of the Site. There was one Phase II ESA returned for the property, completed by Troy Environmental Consulting. Seven boreholes were advanced on the property. There were existing monitoring wells to the west and east of the tank nest; only one borehole was completed as a groundwater monitoring well. All groundwater and soil samples met the applicable guidelines. Additional investigation was not required.

3.3.9.2.2 Lawrence Anderson

The Lawrence Anderson property (Property #3) is located approximately 150 m northeast of the Site. There was one Phase II ESA returned for the property, completed by Curtis Environmental Engineering Inc. The ESA was requested to determine if there were PHC impacts on the property from a former UST. Six boreholes were advanced on the property; three were completed as monitoring wells. Two soil samples and one groundwater sample exceeded the AEP *Risk Management Guidelines for Petroleum Storage*

Tanks (2001). Curtis Environmental recommended removing impacted soil during construction and utility installation of the proposed multi-family housing development. The installation of groundwater monitoring wells to assess the groundwater conditions in the future was also recommended.

3.3.10 AEP – Freedom of Information and Protection of Privacy Request

Based on information obtained from the land titles, ERIS report, AER Abadata search, and the ESAR search it was determined that an additional FOIP search was not necessary at this time.

3.3.11 Environmental Law Center

The Environmental Law Centre (ELC) maintains information on the environmental enforcement history of companies and individuals, specifically any enforcement action taken by AEP under the *Alberta Environmental Protection and Enhancement Act and the Water Act*. Based on information available about the Site at this time, there is no reason to suspect any enforcement issues; therefore, the ELC database was not accessed.

3.3.12 Petroleum Tank Management Association of Alberta

The *Alberta Fire Code* (1997) requires that ASTs with volumes greater than 2,500 L and all USTs be registered with the PTMAA. Tanks used for agricultural purposes, tanks located on federal lands, and tanks associated with upstream oil and gas production are exempt from PTMAA registration. A search of this database is conducted through the ERIS report. Sufficient information was returned through ERIS for PTMAA registered tanks within 300 m of the Site; therefore, it was not considered necessary to conduct a separate search of the PTMAA database.

3.3.13 Agreement of Purchase or Sale

Previous agreements of purchase or sale can be utilized in order to obtain information regarding vendor warranties or special conditions placed on the sale, which relate to contamination. Neither a previous, nor a current agreement of purchase or sale was procured for use in this report.

3.3.14 Land Use Documents

Environmental constraint maps and official plans may identify known or potentially contaminated lands. Other land use documents such as permits for subdivision, building, additions, and demolition can provide insight into previous Site uses.

The Site is located within Wheatland County and is currently zoned as Public Service District. Land use for the surrounding properties is as follows:

- North: Central Business District and mixed residential zoning;
- East: Manufactured Home Park District and other mixed residential zoning;
- South: Highway Commercial District; and
- West: Central Business District, Public Service District, and Medium Density Attached Housing District.

The relevant portions of the Strathmore Land Use Map have been incorporated into Figure 2. Further documents regarding land use were not retrieved.

3.3.15 Public Health Concerns
Occupational Health and Safety maintains information regarding all Health Services infractions, both active, and inactive. A search was not conducted. There was no reason to expect an infraction, as no concerns were identified, and there were no complaints.

3.3.16 Utility Company Records
Utility company records were not consulted.

3.3.17 Local Information Sources
Municipal archives, public libraries, and other public information sources may be consulted for historical information regarding a site such as, photos, maps, and newspaper clippings. No archives where consulted as the information came from ERIS.

3.3.18 Company Records

3.3.18.1 Site Plans
The Gibbs Gage Architects provided a copy of the proposed Site development on behalf of the Town of Strathmore. A copy of the Proposed Site Plan can be found in Appendix H.

3.3.18.2 Building Plans
Building plans for existing facilities were not provided for the Site.

3.3.18.3 Previous Reports
Previous documents were not provided for the Site.

3.4 Site Visit
The observations reported herein are applicable for the date of the Site visit only and should not be relied upon to represent conditions at other times. Ms. Raelene Nagy of Clifton conducted the Site visit on 27 February 2019 and obtained the information reported below. Ms. Nagy obtained permission to access the Site from Gloria Kunn of the Town of Strathmore. Ms. Terryn Kuzyk of Clifton visited the Site on 22 April 2019; observations from this visit have been incorporated into the Phase I ESA.

Representative photographs taken during the Site visit are included in Appendix I.

3.4.1 Limitations to Observations
The Site was observed and walked as part of the Site visit but, given the size of the Site, the entirety of the Site was not observed and photographed. The locations observed are thought to be representative of the general condition of the Site. Due to amount of snow that accumulated over the Site, some potential concerns may have not been observed.

3.4.2 Site Description and General Observations
The Site is composed of Lambert Park, north of Park Lane Drive, and Kinsmen Park (Photograph 1) to the south. There is a parking lot at the northern portion of Kinsmen Park; the remainder of the Site is park area.

Kinsmen Park includes walking paths, a playground (Photograph 2), a splash park (Photograph 3), and Kinsmen Lake (Photograph 4). There are garbage and recycling bins located throughout both Parks. There are two covered structures with open sides (Photographs 5 and 6), an amphitheatre (Photograph 7), a pump house (Photograph 8), and public restroom facilities (Photograph 9) in Kinsmen Park.

3.4.3 Interior Observations

The interior of the picnic shelter and pump house were not inspected during the Site visit, as they were locked.

3.4.4 Exterior Observations

3.4.4.1 General

Park Lane Drive bisects the Site into Lambert Park, to the north, and Kinsmen Park, to the south. Lambert Park was observed to be at a much lower elevation than Park Lane Drive or Kinsmen Park; there was a drop of approximately 1.5 m from the Park Lane Drive right-of-way into Lambert Park. Kinsmen Lake occupies the majority of Kinsmen Park and is surrounded by walking paths and mature trees. There are three docks along the path to access the lake for recreation.

3.4.4.2 Observations of Neighboring Properties

Observations of the neighboring properties were made from the Site, publicly accessible points, and from historical aerial photographs. The surrounding properties are as follows:

- To the north of the Site is residential housing;
- To the east is the Hi-Ho Gas Station “Property #1” (Photograph 10) and the Western Irrigation District Canal (Photograph 11). Central Avenue borders the southeastern corner of the Site;
- To the south is Strathmore Fire Department; and
- To the west of the Site are businesses, residential housing, and a strip mall area.

3.4.4.3 Topographic, Geologic, and Hydrogeologic Conditions

Lambert Park slopes from north to south. It appears to be a local low for the surrounding area, located approximately 1.5 m lower than the Park Lane Drive right-of-way that bisects the Site, at its lowest point. Kinsmen Park is mostly flat, with gentle overland grades towards the lake.

3.4.4.4 Solid Waste Management

Given the Site’s current use as public park areas, there are established waste management practices. There are designated garbage bins for waste throughout the park.

3.4.4.5 Wells

There were no groundwater wells observed during the Site visit. Two historic wells were noted on Site plans provided by the Town; however, they could not be located during the Site visit on 22 April 2019.

3.4.4.6 Sewage Disposal

As the Site is currently used as public park space, sewage disposal practices were established. The Site has a public washroom located on the south portion of Kinsmen Park, where the facility is connected to the Town of Strathmore wastewater treatment system.

3.4.4.7 Pits and Lagoons
There were no pits or lagoons observed on-Site.

3.4.4.8 Surficial Staining
No stains were observed during the Site visit on 27 February 2019; however, due to the snow cover, it is hard to determine any staining on the surface. During the visit on 22 April 2019, when the surface was exposed, no surficial staining was noted.

3.4.4.9 Stressed Vegetation
There was no stressed vegetation observed during the Site visit that might be attributed to adverse soil or groundwater conditions on-Site.

3.4.4.10 Fill
There was no fill observed during the Site visit. However, there is anecdotal evidence of fill on the Site.

3.4.4.11 Wastewater
As the Site is currently used as public park space, sewage disposal practices were established. The Site is connected to the Town of Strathmore's wastewater treatment system.

3.4.4.12 Watercourses, Ditches, or Standing Water
Kinsmen Lake occupies the majority of Kinsmen Park. There were several docks observed during the Site visit.

3.4.4.13 Roads, Parking Lots, and Right-of-Way
There is a parking lot in the northwestern corner of Kinsmen Park, at the intersection of Park Lane Drive and Lakeside Boulevard (Photograph 12). There is a second parking lot to the south of Kinsmen Park, off of Lakeside Boulevard.

3.4.4.14 Waste Generation, Storage and Disposal
There are garbage and recycling bins throughout the Site for disposal and temporary storage of waste.

3.4.4.15 Public Access
There is unimpeded public access to the Site from all directions.

3.4.4.16 Utilities
The Site is currently serviced by power.

3.4.5 Special Attention Items
These substances and other conditions require special attention because of heightened public concern or specific environmental legislation. The presence of these substances does not necessarily lead to an outcome of actual or potential contamination; rather their presence, in some cases, may be regarded as environmental management issues.

3.4.5.1 Asbestos-Containing Materials (ACMs)
The use of ACMs in building construction generally ceased in the 1980s. Asbestos is considered a health hazard if it is friable, airborne, and exposed to humans. Asbestos can be a concern during renovations and

demolitions. Some common asbestos containing materials (ACMs) include pipe insulation, vinyl floor tiles, ceiling tiles and panels, corrugated duct insulation, floor tiles, canvas-wrapped insulation, stipple, plaster, and paint. Chimney piping may contain cementitious duct material that can have asbestos fibers.

Items suspected to contain ACMs were not observed during the Site visit.

3.4.5.2 Polychlorinated Biphenyls

Historically, the use of polychlorinated biphenyls (PCBs) in electrical equipment such as transformers, fluorescent lamp ballasts, and capacitors was common. The Federal *Environmental Contaminants Act* (1976) prohibited the use of PCBs in heat transfer and electrical equipment installed after 01 July 1980. In addition, the storage and disposal of PCB waste materials are regulated. Transformers may contain PCBs as dielectric and coolant fluids, and PCBs are an environmental contaminant.

There was no pole- or pad-mounted transformers observed during the Site visit that might indicate the presence of PCBs.

3.4.5.3 Lead

Lead is a heavy metal which has been used in industrial applications. The three forms of lead typically encountered are:

- Metallic Lead - Used to make pipes, electrical batteries, lead solder, and electric cable sheaths;
- Inorganic Compounds - Usually occurring as constituents of products such as pigments, paints, insecticides, glass; and
- Organic Lead Compounds - The most commonly of which are tetramethyl lead and tetraethyl lead which may be used as antiknock additives to gasoline.

In 1976, the lead content in interior paint was limited to 0.5% by weight under the Federal *Hazardous Products Act.* Lead-based paint is not a direct health risk when sealed beneath layers of non-lead-based paint but should be considered when planning future renovations when lead-based paint could be inhaled in the course of work.

Items suspected to contain lead were not observed during the Site visit.

3.4.5.4 Ozone Depleting Substances (ODS)

ODS are often the refrigerants such as freon found in air conditioners or refrigerators. ODS are not considered to be a health concern for people in buildings, but rather more of a global environmental concern related to the destruction of the ozone layer. Preventing or limiting the release of ODS becomes a maintenance issue for the mechanics servicing ODS-containing equipment.

Items suspect to contain ODS were not observed during the Site visit.

3.4.5.5 Urea Formaldehyde Foam Insulation (UFFI)

UFFI was developed in Europe in the 1950s but utilized to improve the energy-efficiency of homes in the USA and Canada from 1977 until 1980 when it was banned in Canada.

Items suspected to contain UFFI were not observed during the Site visit.

3.4.5.6 Mould

The term mould applies to a group of fungi that includes mildews and may be toxic to humans. Moulds generally require an organic food source or substrate, relatively warm temperatures, and a moisture source to propagate. Moulds reproduce via spores that may then lay dormant until the environmental conditions are appropriate for growth. No obvious mould contamination was observed during the Site visit.

3.4.5.7 Mercury

Mercury is a naturally occurring element that exists in multiple forms. While it naturally occurs in nature, humans have used mercury in many products due to its liquid and metallic properties. While found most commonly in various forms of gravity switches, it is also found in mining applications, fluorescent lights, and in mercury-vapor lighting. Mercury is highly toxic to humans and may cause nervous system damage and mutations in the unborn.

Items suspected to contain mercury were not observed during the Site visit.

3.4.5.8 Electromagnetic Frequencies (EMFs)

Electrical currents induce electromagnetic fields; however, the scientific data is inconclusive about the existence or non-existence of health risks related to electromagnetic fields. There were no high-voltage transmission lines identified on-Site.

3.4.5.9 Noise and Vibration

Human health effects from noise and vibration vary on the susceptibility of the individual exposed as well as the type of noise or vibration itself. Intermittent noise is generated by traffic on the adjacent roadways; other sources of noise or vibrations were not identified during the Site visit.

3.4.6 Personnel Interviews

Mrs. Gloria Hunn was on-Site during the Site on 27 February 2019 visit to answer any questions. Relevant information has been incorporated above.

3.5 Summary of Results

3.5.1 General

In general terms, there are two distinct types of contamination related to any property. First, there is the possibility of contamination from on-Site land use. This would include accidental spills or Site practices that may contaminate the property directly. The second type of contamination is caused by releases from neighboring properties, which might then migrate through the soils and groundwater (or other media) to the Site. These two types of contamination are discussed separately in the following sections.

3.5.2 Contamination from On-Site Sources

3.5.2.1 Actual Contamination from On-Site Sources

3.5.2.1.1 Former Esso Bulk Plant and Fertilizer Distribution Facility

There is the potential for contamination associated with the former Esso Bulk Plant and Fertilizer Distribution Facility located on the eastern side of the Site. Historical reports indicate that there was soil contamination on the property, which was treated with a treatment cell. PHC impacts were observed in the groundwater; however, the groundwater contamination plume was never investigated off the property. An investigation completed by O'Connor indicated that the plume had likely migrated off-site.

3.5.2.1.2 Former Alberta Wheat Pool Station

There was historically an Alberta Wheat Pool station located adjacent to the former Esso Bulk Plant and Fertilizer Distribution Facility. There was never an extensive investigation into the storage of herbicides and pesticides on the Alberta Wheat Pool portion of the Site. There is the potential for shallow impacts to exist associated with the storage of large quantities of fertilizer.

3.5.2.2 Potential Contamination from On-Site Sources

As noted previously, there was no fill observed during the Site visits. However, there was anecdotal evidence of fill being used at the Site. Fill imported to a site can be a potential source of contamination if the source of the fill is not known. If fill is not being tested prior to import, contaminates can potentially be brought to a site.

The presence of imported fill must be considered a potential source of contamination from an on-site source.

3.5.3 Contamination from Off-Site Sources

3.5.3.1 Actual Contamination from Off-Site Sources

Areas of actual contamination from off-Site sources were not identified.

3.5.3.2 Potential Contamination from Off-Site Sources

There is the potential for contamination associated with the adjacent Hi Ho Gas Bar (Property #1) to the northeast of the Site. There have been no historic releases reported to regulatory agencies; however, a release from the property immediately upgradient of the Site would result in impacts.

3.6 Recommendations

Based on the historical research, database searches, and Site observations, there is evidence of actual contamination associated with the Esso Bulk Plant and Fertilizer Distribution Facility and Alberta Wheat Pool station on-Site, the potential of untested imported fill on-Site, and potential contamination from the Hi Ho Gas Bar to the north of the Site. A Phase II ESA to assess the soil and groundwater condition on-Site, completed concurrently with the geotechnical assessment of the Site for development, was recommended.

4.0 Phase II ESA

4.1 Objective and Scope of Work

The Phase II ESA was completed in conjunction with the geotechnical drilling to minimize the disturbance to the Site and to limit the number of Site visits. To assess the environmental condition of the Site associated with the potential environmental concerns identified in the Phase I ESA, the following scope of work was carried out:

- Advanced five boreholes to total depths ranging from 6.1 m to 6.4 m below ground surface (m bgs), completed as groundwater monitoring wells with protective casings at approximately 40 m spacing in the vicinity of the proposed employee parking lot in the eastern portion of the Site to address concerns associated with the former facilities;
- Collected two samples per borehole for laboratory analysis of BTEX, PHC fractions F1 to F4, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), metals, pesticides and herbicides, and nutrients;
- Advanced five boreholes within the footprint of the proposed building to total depths ranging from 6.6 m to 9.6 m bgs. Advanced two boreholes in the adjacent parking lot to total depths ranging from 5.9 m to 6.1 m bgs, all completed as groundwater monitoring wells with protective casings;
- Collected two samples per borehole within the footprint of the proposed building and in the adjacent parking lot for laboratory analysis of BTEX, PHC fractions F1 to F4, VOCs, metals, and soil salinity;
- Developed the new groundwater monitoring wells, and monitored the depth to water table and total depth;
- Collected one groundwater sample from each of the groundwater monitoring wells in the employee parking lot for laboratory analysis of BTEX, PHC fractions F1 and F2, PAHs, VOCs, dissolved metals, pesticides and herbicides, nitrogen, and Total Kjeldahl Nitrogen (TKN);
- Collected one groundwater sample from each of the groundwater monitoring wells in the building footprint and adjacent parking lot for laboratory analysis of BTEX, PHC fractions F1 and F2, VOCs, dissolved metals, and salinity;
- Collected one groundwater sample from each of the two pre-existing groundwater monitoring wells for laboratory analysis of BTEX, PHC fractions F1 and F2, VOCs, dissolved metals, and salinity; and
- Prepared a report combining the Phase I ESA with the Phase II soil and groundwater investigation.

4.2 Regulatory Framework

4.2.1 AEP 2019 Tier 1 Guidelines

The primary guidance document used to compare the soil and groundwater analytical data were the AEP, 2019, Tier 1 Soil and Groundwater Remediation Guidelines (AEP 2019 Tier 1 Guidelines). The AEP 2019 Tier 1 Guidelines specify a land use and a receptor pathway approach that formulates a specific standard for each different parameter.

4.2.2 Land Use and Buffer Zones

As indicated in Section 3.3.14, the Site is currently zoned as Public Service District. The surrounding properties include Central Business District, Public Service District, Highway Commercial District, and mixed residential zoning. The Site has the most conservative land use for the area, and a land use buffer is not required.

4.2.3 Grain Size

The soil texture based on the soil logs are classified as fine-grained.

4.2.4 Guideline Selection

The applicable guidelines for the Site are the AEP 2019 Tier 1 Guidelines for natural and residential/parkland land use and fine-grained soil.

4.3 Quality Assurance / Quality Control

4.3.1 Field Duplicate Samples

Field duplicate samples are separate samples collected as close together in space and time as possible. Variability introduced through sampling procedures, analytical procedures, or the heterogeneity of the sampled matrix may influence the resulting concentration. Duplicate samples help to quantify the confidence of the analytical result.

4.3.2 Trip Blanks

Trip blank samples help assess any volatile contamination introduced during shipping and field handling. A trip blank consists of 40 mL glass vials filled by the laboratory with organic-free deionized water, kept in the cooler while samples are collected, transported, and submitted to the laboratory for each day of soil sampling.

4.3.3 Laboratory and Chain of Custody

The samples were submitted to Maxxam Analytics of Calgary, Alberta for analyses under Chain of Custody (COC) control within ice-filled coolers. Samples were submitted within the required holding time for the analytes selected and temperatures were checked and recorded on the COC upon arriving at the laboratory. The completed COC documentation includes the name of the sampler, date/time relinquished, date/time sampled, and temperature of the samples.

4.4 Field Investigation

4.4.1 Soil Investigation

The following sections discuss the field activities that occurred on 17 and 22 April 2019.

4.4.1.1 Safety and Utility Locates

Before ground disturbance activities began, underground utilities were located through the services of Alberta One-Call and a private utility locating company. A health and safety briefing was completed by Mr. Menuka Dassanayake of Clifton for the contractors on-Site, prior to the commencement of the field work to identify all potential hazards and controls to mitigate the hazards.

4.4.1.2 Soil Sampling Methodologies

The investigation was completed by advancing twelve boreholes with a drilling rig on 17 and 22 April 2019. Clifton personnel supervised the advancement of twelve boreholes (MW101 to MW112) with a track-mounted 8040 Geoprobe direct push rig. The drilling rig was supplied and operated by All Service Drilling of Airdrie, Alberta. Borehole locations are presented in Figure 15.

4.4.1.2.1 Drilling Rig Selection

The drilling rig selected was a hollow stem auger to allow for the collection of undisturbed soil samples. This drilling method was chosen to accommodate the potential for assorted fill material on-Site, which may have proven challenging for a direct push rig.

4.4.1.2.2 Soil Sample Collection

During completion of the boreholes, soil samples were collected by pushing a clear, acetate sampling core tube into the subsurface. The core tube was then extracted from the borehole and opened by the drilling crew. The 1.5 m sample cores were split into a top and bottom interval with a sample collected from each interval.

Clifton personnel described the recovered soil interval in the field for composition, texture, colour, hardness, moisture content, and any other identifying features observed, including inclusions or alteration of the original material. Soil was removed from the core tube with a stainless-steel putty knife, or by using a gloved hand.

All remaining soil cuttings from the drilling were placed in a lined soil bag and later disposed of off-Site.

4.4.1.2.3 Sample Containers and Preservation

For each sample collected, a portion of the soil sample (approximately 5 grams) was collected with a TerraCore® soil sampler and placed into two laboratory-supplied, pre-weighed, methanol-preserved 40 mL vials. The samples collected with the TerraCore® soil samplers were submitted for analyses of volatile compounds including BTEX, PHC fraction F1, and VOCs. Another portion of the soil sample interval was placed into one laboratory-supplied, 125 mL glass sampling container with a Teflon®-lined lid. The sample collected in the glass sampling jar is used for analyses of moisture content, PAHs, and PHC fractions F2-F4. The last portion was placed into a resealable plastic bag used for analyses of metals and salinity. The laboratory sample containers were labelled, and the vial and jar samples were stored on ice to minimize volatilization or degradation. The bag sample was set aside to warm up in the cab of the vehicle for field screening of organic vapours.

4.4.1.2.4 Decontamination Procedures

Decontamination procedures between sample locations included cleaning the putty knives with a solution of deionized water and Alconox Liquinox ™, and then rinsing with deionized water. A new pair of nitrile gloves was worn for each sample during collection to prevent cross-contamination.

4.4.1.3 Field Vapour Screening

Field screening for headspace vapours was conducted on each sampled interval using an RKI Eagle 2 combustible gas monitor (Eagle 2) with a photo ionization detector (PID). The Eagle 2 was calibrated prior to use at the Site by field personnel.

The calibration procedure includes the introduction of known concentrations of isobutylene and hexane gases into the instrument. The calibration of the instrument is completed by adjusting the span until the indicator exhibits the appropriate meter units for each gas. The calibrated Eagle 2 is then used to detect organic vapours in comparison to the appropriate standard. The Eagle 2 displays units that are comparable to vapour concentrations in parts per million (ppm).

Due to the inexact volume of the headspace and varying soil conditions, detector readings should only be considered a relative indication of vapour concentrations. Soil moisture and humid atmospheric conditions have been known to produce falsely elevated organic ionizable vapour readings, due to condensation on the lamp.

Each soil bag sample was allowed to warm up for a minimum period of fifteen minutes; the bags were then punctured with the Eagle 2 probe to secure a reading of the gasses inside of the bags. This was completed for each of the sample intervals, with the results recorded into a field log. After the probe was removed from the sample bag, the Eagle 2 was allowed to record the ambient air in the area where the sample readings were taken until the levels had dropped to 0 ppm, prior to recording the readings of the next sample.

4.4.1.4 Analytical Selection

One soil sample was selected from each borehole for analyses based on the presence of fill, odours, elevated vapour readings or approximate groundwater interval. A second soil sample was selected from each of the boreholes, selected from an interval below the first selected sample, to determine the vertical extent of potential contamination.

Table 1 shows the respective analytical suite for each submitted sample.

The tables summarizing the laboratory test results are presented in Appendix J. The laboratory certificates of analyses are provided in Appendix K.

4.4.1.5 QA/QC

Clifton has included the following QA/QC as part of the soil sampling program.

4.4.1.5.1 Trip Blanks

Two trip blank samples were submitted for laboratory analyses of VOCs with the soil samples.

4.4.1.5.2 Field Duplicate Samples

One duplicate sample was collected: 102-14 (duplicate of 102-4). The samples were submitted for laboratory analysis of BTEX, PHC fractions F1 – F4, VOCs, and salinity.

4.4.2 Groundwater Investigation

As part of the investigation, all twelve boreholes (MW101 to MW112) were completed as monitoring wells. One existing monitoring well (MW9) was also included in the groundwater investigation. See Figure 15 for the monitoring well locations.

4.4.2.1 Monitoring Well Construction Methods

The monitoring wells were constructed using 50 mm inner diameter (ID), schedule 40 PVC. The well screen was comprised of 0.25 mm (0.010”) slotted screen and capped at the base. Solid PVC risers of corresponding diameter were attached to the screens up to the ground surface. The riser was capped with a J-Plug locking well cap. The annulus around the screen was backfilled with well-sorted, washed 10/20 filter sand placed to 0.3 m above the screen.

The well was sealed above the sand with a hydrated, bentonite clay plug of at least 0.3 m in thickness. The annular space around the riser was filled with bentonite chips to just below the ground surface. A metal flush-mounted road box was installed to protect the riser pipe of the monitoring wells in the existing parking lot (MW101 – MW107). The remaining monitoring wells (MW108 – MW112) were left as exposed PVC stick ups, as the wells were only semi-permanent. Quick-setting concrete was used to secure the road box in place. The well screen intervals were generally placed in high permeability units of sand or silt. Screens of up to three metres were installed for the greatest amount of recharge.

4.4.2.2 Groundwater Sampling Methods

On 06 May 2019, the twelve new monitoring wells and one existing monitoring well (MW9) were monitored and developed. On 07 May 2019, water level measurements and groundwater samples were collected from the twelve new monitoring wells and one existing monitoring well.

4.4.2.2.1 Standpipe Vapour Screening

The ambient headspace vapour readings in all the monitoring well standpipes were measured using the Eagle 2. The J-plug on the monitoring well was quickly removed and the probe of the Eagle 2 was placed into the standpipe with the cap or the sampling technicians hand placed over the top of the standpipe. The probe was able to record PID readings from any accumulation of vapours in the standpipe and was removed after the highest reading was recorded.

4.4.2.2.2 Fluid Level Measurements

Fluid levels, including groundwater and any potential light, non-aqueous phase liquid (LNAPL), and total well depth were measured using a Heron oil/water interface meter. The oil/water interface meter was cleaned between monitoring wells using a solution of deionized water and Alconox Liquinox ™, and then rinsed with deionized water.

4.4.2.2.3 Monitoring Well Development

After the initial well monitoring and standpipe vapour measurements were taken, the newly installed monitoring wells were developed. The well development involved using Waterra tubing with a foot valve to extract up to three well volumes of groundwater or until the well went dry and was no longer able to recover. The monitoring wells were developed by surging the tubing up and down within the well standpipe

in front of the well screen to dislodge clay and silt particles that may have collected either within the well itself, or in the sand pack that was placed around the well screen.

There were low volumes of water in MW106 and MW110, limiting the amount of water available for collection.

4.4.2.2.4 Groundwater Sample Collection

After well development and purging, the wells were allowed to recover, the fluid levels were again monitored, and the groundwater was sampled on 07 May 2019. The groundwater was sampled from the monitoring wells using dedicated disposable bailers. On 17 May 2019, MW102 was re-sampled using a low flow peristaltic pump attached to ¼" outer diameter polyurethane tubing. There was limited sample quantity available for MW106 and MW110.

4.4.2.3 QA / QC

Clifton has included the following QA/QC as part of the groundwater sampling program.

4.4.2.3.1 Trip Blanks

One trip blank sample was submitted for laboratory analyses of VOCs with the groundwater samples.

4.4.2.3.2 Field Duplicate Samples

Two duplicate samples were collected: MW195 (duplicate of MW105) and MW191 (duplicate of MW111). Sample MW195 was submitted for laboratory analysis of BTEX, PHC fractions F1 and F2, VOCs, metals, and routine chemistry. Sample MW191 was submitted for laboratory analysis of BTEX, PHC fractions F1 and F2, PAHs, VOCs, metals, and nutrients.

4.5 Investigative Findings

4.5.1 Soil

4.5.1.1 Stratigraphy

The stratigraphy on-Site generally consisted of sand and silt overlying clay. There was some indication of fill in the existing parking lot, which is considered to be consistent with anecdotal data, as well as local conditions where material was imported to level sites for use.

Borehole logs summarizing soil stratigraphy and field observations are provided in Appendix L. A legend of Clifton's symbols and terms is provided with the logs for reference. Detailed discussions of the geotechnical classification of the encountered stratigraphy is provided in the Clifton, May 2019, *Geotechnical Investigation, Town Hall Building, 1 Parkland Drive, Strathmore, AB.*

4.5.1.2 Field Screening Results

Field measurements of soil vapour concentrations were performed with the Eagle 2. The organic vapour analyzer (OVA) readings from the collected soil samples ranged from 0 ppm to 2,150 ppm. The maximum reading (2,150 ppm) was measured from a soil sample collected from MW105 at a depth of 6.10 to 6.86 m bgs. The PID readings from the collected soil samples ranged from 0 ppm to 18 ppm. The

maximum reading (18 ppm) was measured from a soil sample collected from MW110 at a depth of 1.52 to 2.29 m bgs.

Soil vapour concentration readings are presented on the boreholes located in Appendix L.

4.5.1.3 QA / QC

The soil laboratory analytical reports and associated Certificates of Analyses have been attached in Appendix L. Analytical results for QA/QC samples are discussed below.

4.5.1.4 Field Duplicate Samples

Comparing the sample results to duplicate results is usually done by calculating the relative percent difference (RPD) between the two results. RPD is calculated using the following formula:

$$\text{RPD}\ (\%) = \ \text{ABS}\left(\frac{C_1 - C_2}{\frac{C_1 + C_2}{2}}\right) * 100$$

C_1 – original sample, C_2 – duplicate sample.

One field duplicate sample was collected and compared to the original sample. The RPD could not be calculated for some constituents, as the analytical results were less than five times the reportable detection limit (RDL). The remaining RPDs were within the acceptable range. The soil field duplicate sample results are presented in Table 2.

4.5.1.5 Trip Blank Samples

The trip blank sample results were below the laboratory detection limits for all parameters but trichloroethene (TCE). Concentrations of TCE were measured at 0.019 mg/l in Trip Blank #1 and at 0.019 mg/l in Trip Blank #2. Based on communication with Maxxam, the concentration of trichloroethene in the method blank for the trip blank analysis was below the laboratory detection limit, precluding contamination from the laboratory. No sample handling or storage procedures have been identified that can be directly attributable to the potential source of TCE in the blanks. However, as the trip blanks were transported in the same cooler as the soil samples and were stored in the same refrigerator prior to transport to Maxxam, it is possible that the trip blanks were contaminated by TCE from the soil samples.

However, TCE has also been detected in the groundwater (MW102), and therefore it is unlikely that the trip blank results indicate potential false positive results for the soil. In our opinion, the TCE concentrations in the soil samples are considered reliable but should be confirmed during further investigation. The soil trip blank results are presented in Table 3.

4.5.1.6 Laboratory QA/QC

Samples arrived at the laboratory within the designated hold times and within the required temperature range. No sample integrity flags were identified by the laboratory. The laboratory completed internal QA/QC procedures including but not limited to laboratory blanks, matrix spike, surrogate recovery, and laboratory duplicates. The laboratory did not identify data quality waivers with respect to their QA/QC procedures or methods variances, except for several matrix spike blanks results that was outside of the

control limits. Maxxam reported “Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.” Therefore, the laboratory results are considered reliable.

4.5.1.7 Soil Analytical Results

A summary of the soil analytical results is presented in Tables 4 to 9. Figure 16 shows the soil sample locations that yielded results with concentrations of individual parameters above the applicable AEP 2019 Tier 1 Guidelines.

4.5.1.7.1 BTEX and PHC Fractions

Twenty-four samples were submitted for laboratory analysis of BTEX and PHC fractions F1-F4 and compared to the AEP 2019 Tier 1 Guidelines. Sample 110-2 (0.76 to 1.52 m bgs) exceeded the applicable guidelines for all BTEX parameters. There were detectable concentrations of the following:

- Benzene (Sample 112-2);
- Toluene (Samples 101-3 and 112-2);
- Total xylenes (Sample 112-2);
- PHC fraction F2 (Samples 102-1, 106-2, 109-5, and 110-2);
- PHC fraction F3 (Samples 102-1, 106-2, and 110-2); and
- PHC fraction F4 (Samples 102-1, 106-2, and 110-2).

The laboratory results for BTEX and PHC fractions are presented in Table 4.

4.5.1.7.2 VOCs

Twenty-four samples were submitted for laboratory analysis of VOCs and compared to the AEP 2019 Tier 1 Guidelines. There were exceedances of the AEP 2019 Tier 1 Guideline for trichloroethene (TCE) in the following samples: 101-3, 101-5, 103-1, 103-5, 106-5, 107-3, and 107-5. There were detectable concentrations of the following parameters:

- 1,1,2,2-tetrachloroethane (Samples 103-1 and 110-2);
- 1,2,4-trimethylbenzene (Sample 110-2);
- 1,2-dichloroethane (Sample 110-2); and
- Trichloroethene (Samples 104-3, 106-2, 111-2, and 112-40.

The laboratory results for VOCs are presented in Table 5.

4.5.1.7.3 PAHs

Ten samples were submitted for laboratory analysis of PAHs and compared to the AEP 2019 Tier 1 Guidelines. There were exceedances noted in two samples, as follows:

- Sample 109-2: Naphthalene; and
- Sample 110-2: Naphthalene and phenanthrene.

There were detectable concentrations of PAHs, including those without AEP 2019 Tier 1 Guidelines, in the following samples: 109-2, 110-2, and 112-2.

The laboratory results for PAHs are presented in Table 6.

4.5.1.7.4 Salinity

Fourteen samples were submitted for laboratory analysis of soil salinity and compared to the AEP 2019 Tier 1 Guidelines. There was one exceedance for SAR in Sample 101-3. The remainder of the samples had detectable values or concentrations of other salinity parameters; however, they were less than the AEP 2019 Tier 1 Guidelines where applicable.

The laboratory results for salinity are presented in Table 7.

4.5.1.7.5 Metals

Ten samples were submitted for laboratory analysis of metals and compared to the AEP 2019 Tier 1 Guidelines. All ten soil samples had at least one detectable parameter, though all the results were below the AEP 2019 Tier 1 Guidelines.

The laboratory results for metals are presented in Table 8.

4.5.1.7.6 Pesticides and Herbicides

Ten samples were submitted for laboratory analysis of pesticides and herbicides and compared to the AEP 2019 Tier 1 Guidelines. Eight of the ten soil samples yielded concentrations less than the analytical detection limit. Two samples had detectable concentrations of the following parameters:

- p.p'-DDT (Sample 109-2); and
- g-Chlordane, Diallate (E/Z), and Triallate (Sample 110-2).

The concentration of Triallate from 110-2 exceeded the AEP 2019 Tier 1 Guidelines.

The laboratory results for pesticides and herbicides are presented in Table 9.

4.5.2 Groundwater

4.5.2.1 Well Monitoring

A summary of groundwater field measurements, including depth to groundwater, total well depths, and soil vapour readings within the well headspace are provided in Table 10 (Appendix J).

4.5.2.1.1 Hydrogeology

When monitored on 07 May, all of the newly installed monitoring wells contained groundwater. Depth below ground surface ranged from 2.67 m bgs in BH101, located in the northwest area of the Site, to 8.68 m bgs in BH105, located in the northeast portion of the Site. Based on topography and the location of Kinsman Lake, the groundwater flow direction suspected to the southwest.

4.5.2.1.2 Light Non-Aqueous Phase Liquid (LNAPL) Measurements

No LNAPL was measured in any of the monitoring wells during the groundwater monitoring event.

4.5.2.1.3 Standpipe Vapour Monitoring

Field measurements of the soil vapour standpipe concentrations were performed with the Eagle 2. The organic vapour analyzer readings ranged from 0 ppm (MW106) to >11,100 ppm (MW103 and MW105). The PID readings ranged from 0 ppm to 6 ppm (MW105). Standpipe vapour concentration readings are presented in Table 10.

4.5.2.2 QA / QC

The groundwater laboratory analytical report and associated Certificates of Analyses have been attached in Appendix K. Analytical results for QA/QC samples are discussed below.

4.5.2.2.1 Field Duplicate Samples

Comparing the sample results to duplicate results is usually done by calculating the RPD between the two results. RPD is calculated using the formula noted in Section 4.5.1.4.

Two field duplicate samples were collected and compared to the original samples: MW195 (duplicate of MW105), and MW191 (duplicate of MW191). The RPD could not be calculated for some constituents as the results were less than five times the RDL. The remaining RPDs were within the acceptable range, with the exception of MW191 for boron. Boron is not considered to be a constituent of potential concern (COPC). This result will be treated as qualitative, and not used to make decisions regarding the management of the Site. The groundwater duplicate sample results are presented in Table 11.

4.5.2.2.2 Trip Blank Sample

Trip blank sample results for VOCs were all below the laboratory detection limits, which are considered acceptable. The groundwater trip blank results are presented in Table 12.

4.5.2.3 Groundwater Analytical Results

4.5.2.3.1 BTEX and PHC Fractions

Thirteen samples were submitted for laboratory analysis of BTEX and PHC fractions F1 and F2 and compared to the AEP 2019 Tier 1 Guidelines. All samples were below the AEP 2019 Tier 1 Guidelines and laboratory detection limits. The laboratory results for BTEX and PHC fractions are presented in Table 13.

4.5.2.3.2 VOCs

Fourteen samples were submitted for laboratory analysis of VOCs and compared to the AEP 2019 Tier 1 Guidelines. With the exception of two samples, the concentrations of all VOC parameters were non-detectable. Sample MW102 yielded a tetrachloroethene concentration of 0.0012 mg/l and a trichloroethene (TCE) concentration of 0.00054 mg/l. As part of the QA/QC process to check possible false positive bias in the soil sample trip blanks, Clifton re-sampled MW102 on 17 May 2019. The concentration of tetrachloroethene in the 17 May sample was 0.0012 mg/l and trichloroethene (TCE) was non-detectable.

The laboratory results for VOCs are presented in Table 14.

4.5.2.3.3 PAHs

Four samples were submitted for laboratory analysis of PAHs and compared to the AEP 2019 Tier 1 Guidelines. All samples were below the AEP 2019 Tier 1 Guidelines and laboratory detection limits. The laboratory results for PAHs are presented in Table 15.

4.5.2.3.4 Routine

Seven samples were submitted for laboratory analysis of routine groundwater chemistry and compared to the AEP 2019 Tier 1 Guidelines. There were exceedances of the applicable guideline for total dissolved solids (TDS) in all seven samples. There were also exceedances of the applicable guideline for chloride in two samples (MW101 and MW102), and one exceedance of the guideline for sulphate (MW105). All other concentrations were either below the applicable guideline or the laboratory detection limit. The laboratory results for routine chemistry are presented in Table 16.

4.5.2.3.5 Nutrients

Four samples were submitted for laboratory analysis of nutrients and compared to the AEP 2019 Tier 1 Guidelines. There were exceedances of nitrate and nitrite in one sample (MW108). The remainder of the samples were below the applicable guideline or the laboratory detection limit. The laboratory results for nutrients are presented in Table 17.

4.5.2.3.6 Metals

Eleven samples were submitted for laboratory analysis of dissolved metals and compared to the AEP 2019 Tier 1 Guidelines. All eleven groundwater samples had at least one detectable parameter. Guideline exceedances were as follows:

- Arsenic – MW103 and MW9;
- Boron – MW102;
- Iron – MW103 and MW9;
- Manganese – MW101 – MW105, MW107 – MW109, MW111, MW112, and MW9;
- Sodium – MW101 – MW103, MW105, MW107, and MW108; and
- Uranium – MW101, MW102, MW105, MW107, MW108, MW111, MW112, and MW9.

The laboratory results for metals are presented in Table 18.

4.5.2.3.7 Pesticides and Herbicides

Five samples were submitted for laboratory analysis of Pesticides and Herbicides and compared to the AEP 2019 Tier 1 Guidelines. All parameters were non-detectable in four of the five groundwater samples. The sample from MW108 yielded a detectable concentration of Triallate that was less than the Guide. The same sample yielded a concentration of Heptachlor Epoxide that exceeded the Guideline.

4.5.3 Material Management

4.5.3.1 Soil Cuttings

All soil cuttings were collected and left on-Site in a lined soil bag. The soil bag was collected and transported by EnviroCore to a Class II Landfill. The results of the Class II Landfill analysis are presented in Table 20.

4.5.3.2 Purge Water

One 205-L drum, partially filled with purge water, was collected and left on-Site. The drum was collected and transported by EnviroCore to Terrapure Environmental in Calgary for disposal.

5.0 Discussion

5.1 Soil

5.1.1 Stratigraphy and Fill

Fill was present underneath the asphalt pavement and topsoil throughout the Site. The fill consisted of a mixture of gravel and sand layers. Based on our observations, fill thicknesses varied from 2.4 m to 4.0 m across the area of the proposed building footprint. The presence of the fill is consistent with anecdotal data, as well as local conditions where material was imported to level areas of the Site. Below the fill were organic soils which were between 1.5 m and 2.8 m in thickness.

In the northern portion of the Site, in the parking lot and proposed building footprint, the subsurface geological profile encountered in the boreholes generally consisted of fill, organic soil, sand, and then stiff to hard clay till. A summary of the stratigraphy encountered in the northern portion of the Site is as follows:

- Fill was observed below the existing asphalt parking lot and topsoil in all boreholes. The fill consisted of gravel and sand in BH102 to BH107 and fine sand with silt in BH101. The soil colour was brown to dark olive brown. Moisture contents in the fill varied from 2.9% to 20.6%.
- Organic soil was present below the fill in all boreholes which consisted of organics, silt, trace clay, and rootlets.
- Sand was observed below the organics in boreholes BH102 and BH103. The sand was medium grained, trace silt, trace clay, greyish to brown and compact. Moisture conditions in sand varied from 18.6% to 21.1%.
- Clay till was observed in all boreholes except BH102 and consisted of silty clay with trace gravel and low to medium plasticity. The soil colour was dark brown to brown. Moisture conditions in the clay till varied from 15.1% to 24.8%. The clay till varied from firm to very hard.

In the eastern portion of the Site, east of the lake, the subsurface geological profile encountered in the boreholes generally consisted of fill and firm to stiff clay till. Sand till was observed underneath clay till in BH108. A summary of the stratigraphy encountered in the eastern portion of the Site is as follows:

- Fill was observed below the existing topsoil in all boreholes. In general, the fill consisted of silt and clay. The soil was brown to dark olive brown. Moisture conditions in the fill varied from 16.3% to 16.8%.
- Clay till was observed in all boreholes except BH102 and consisted of silty clay with trace gravel and low to medium plasticity. The soil colour was dark brown to brown. Moisture conditions in the clay till varied from 13.1% to 17.1%. The clay till varied from firm to stiff.

5.1.2 Soil Impacts

The locations of identified soil impacts are shown in Figure 16. A discussion of these follows below.

Concentrations of one or more BETX and PHC Fractions F2-F4 were detected in samples from three of the seven boreholes located in the northern portion of the Site, including one located within the proposed building footprint. Where detected, the depths of the samples were all less that 1.5 m to 2.0 m below the surface. All detectable concentrations met the AEP 2019 Tier 1 Guidelines.

In the eastern portion of the Site, concentrations of one or more BETX and PHC Fractions F2-F4 were detected in samples from three of the five boreholes, one of which, MW110, had concentrations of BTEX that exceeded the applicable AEP 2019 Tier 1 Guidelines. The eastern portion of the Site is the location of former bulk petroleum and fertilizer facilities, the former Esso Bulk Plant and Fertilizer Distribution Facility and the Alberta Wheat Pool station. Petroleum hydrocarbons had been identified in this area in earlier investigations conducted by others. The depth of the exceedances in BH110 was between 0.76 and 1.52 m below the surface

Detectable concentrations of PAHs were found in three of the five boreholes located in the eastern portion of the Site, the location of the former bulk petroleum and fertilizer facilities. The concentrations were found at depths between 0.76 m and 1.52 m below the surface. Of the three, samples from boreholes MW109 and MW110 had concentrations that exceeded the AEP 2016 Tier 1 Guidelines for one or more PAH. Boreholes MW109 and MW110 are located in the middle of the eastern portion of the Site.

VOC analyses of samples from all 12 boreholes yielded detectable concentrations of one or more VOC from eight boreholes, including those located in the northern and eastern areas of the Site. Of those, four boreholes had samples with concentrations that exceeded the AEP 2019 Tier 1 Guidelines for trichloroethene (TCE). Those four were all located in the northern area and three of those were beneath the proposed building footprint. The depths of those impacts ranged from 0.0 m to as deep as 3.8 m below the surface. There was no potential on site or offsite source for VOCs identified in the Phase I ESA. It is possible that the VOCs came to the Site in the fill that was imported.

The one exceedance of salinity parameters was the sodium absorption ratio of 13 from a depth of 1.52 m to 2.29 m in borehole MW103 located within parking lot in the northern area. The applicable AEP 2019 Tier 1 Guideline is 12. It should be noted that all other salinity parameters from that one sample were, in general, higher than those from all the other samples. Given the location and potential sources, such a road salts, this is not of concern.

Soil samples from the five boreholes located in the eastern portion of the Site and the location of the former bulk petroleum and fertilizer facilities were tested for metals. All results met the AEP Tier 1 Guidelines.

Samples from the same boreholes were also tested for concentrations of pesticides and herbicides. Detectible concentrations were found in the samples from BH109 and BH110, at a depth of between 0.76 m and 1.52 m. Boreholes MW109 and MW110 are located in the middle of the eastern portion of the Site. The concentration of Triallate from MW110 was 0.29 mg/kg exceeding the AEP 2019 Tier 1 Guideline of 0.22 mg/kg. The eastern portion of the Site is the location of former bulk petroleum and fertilizer facilities, an Esso Bulk Plant and Fertilizer Distribution Facility and Alberta Wheat Pool station.

5.2 Groundwater

5.2.1 Hydrogeology

The groundwater on Site was present at a depth of 2.7 m to 8.9 m bgs and with an anticipated flow direction to the southwest.

5.2.2 Groundwater Impacts

In addition to the 12 monitoring wells installed by Clifton, the existing monitoring well MW9 was included in the groundwater sampling program. MW9 is located between MW105 and MW 106 within the footprint of the proposed building.

The groundwater samples did not yield detectable concentrations of BTEX, PHCs, or PAHs. There were detectable concentrations of tetrachloroethene and trichloroethene (TCE) from MW102 when sampled on 07 May. When sampled again on 17 May, only tetrachloroethene was detected, and all concentrations were below the AEP 2019 Tier 1 Guidelines. MW102 is located in the middle of the northern portion of the Site. The location of the groundwater VOC exceedance is shown in Figure 17.

The groundwater on-Site did contain elevated concentrations of TDS, sulphate, sodium, chloride, dissolved arsenic aluminum, dissolved boron, dissolved iron, dissolved manganese, and dissolved uranium.

The elevated concentrations of TDS, sulphate, sodium, dissolved iron, dissolved manganese, dissolved selenium, and dissolved uranium in the groundwater are likely naturally occurring. These concentrations were generally found across the Site with no notable spatial distribution attributed to a source. Based on our experience in the region, these parameters are often found at elevated concentrations in the shallow groundwater.

The source of the chloride in monitoring wells the parking lot in the northern area may be attributed to runoff from the neighbouring roads.

Nitrite and nitrate concentrations were found exceeding the AEP 2019 Tier 1 Guidelines in groundwater from monitor well MW108, located in the northern part of the eastern portion of the Site. In addition, Heptachlor Epoxide was also found in the sample from MW108 at concentrations exceeding the AEP 2019 Tier 1 Guidelines.

Heptachlor Epoxide is an oxidation product of Heptachlor, which is a manufactured chemical used extensively in the past for killing insects in homes, buildings, and on food crops, especially corn. These uses stopped in 1988. Currently it can only be used for fire ant control in power transformers. Bacteria and animals break down Heptachlor to form heptachlor epoxide.

The locations of the nutrient and pesticide/herbicide exceedances are shown in Figure 18.

Former facilities for the storage and handling of fertilizers and pesticides and herbicides, the Esso Bulk Plant and Fertilizer Distribution Facility and Alberta Wheat Pool station, were once located on the eastern portion of the Site and may be the source of the nitrites and nitrates.

5.3 Conceptual Site Model

Former Land Use	The Site was formerly native undeveloped land with a CP rail line, Esso Bulk Plant and Fertilizer Distribution Facility and Alberta Wheat Pool station located on the eastern portion of the Site.
Current Land Use	The Site is composed of Lambert Park, north of Park Lane Drive, and Kinsmen Park to the south. There is a parking lot at the northern portion of Kinsmen Park; the remainder of the Site is park area. Kinsmen Park includes walking paths, a playground, a splash park and Kinsmen Lake.
Future Land Use	The Town plans to build a new, one-storey, Town Hall building. A new parking lot will be constructed west of the building for public parking. Another parking lot for Town staff will be constructed east of the building. The deep utilities currently crossing the proposed building envelope and west parking lot will be removed and relocated
Vegetation	The Site is a park and vegetation on-Site include grasses and mature trees.
Buildings	Located on the Site are two covered structures with open sides, an amphitheatre, a pump house, and public restroom facilities
Utilities	There are deep services that cut across the northern portion of the Site as well as electrical, water, and sanitary lines for the park.
Topography	Lambert Park slopes from north to south. It is low from the surrounding area, approximately 1.5 m lower than the Park Lane Drive right-of-way that bisects the Site, at its lowest point. Kinsmen Park is mostly flat, with gentle overland grades towards the lake

Surficial Geology	The surficial geology consists primarily of glacially streamlined till. Specifically, the surficial soils at the Site consist of fill, organic soil, sand, and then stiff to hard clay till
Bedrock Geology	The bedrock geology is mainly composed of sandstone, siltstone, and mudstone of the Scollard Formation.
Groundwater Conditions	The groundwater is approximately 3 m to 9 m below ground surface, with an anticipated flow direction to the southwest.
Contaminant Source	Potential contaminant sources include the former Esso bulk station facilities and Alberta Wheat Pool (AWP) Strathmore Station fertilizer storage facility located on the eastern portion of the Site, and fill imported to the Site of unknown origin located throughout the Site.
CoPCs	Given the potential contaminant sources, the CoPCs consisted of a full scan for BTEX, PHC fractions F1-F4, PAHs, VOCs, salinity, nutrients, metals, and pesticides/herbicides. After interpretation of the analytical results, exceedances of the AEP 2019 Tier 1 Guidelines were as follows: Soil: BTEX, PAH, VOC, sodium, pesticide/herbicide Groundwater: VOC, chloride, nitrite, nitrate, pesticide/herbicide
Soil Contamination	Sodium in the soil is likely attributed to runoff from an adjacent road. The presence of BTEX, PAH, and pesticide/herbicide are consistent with the locations of the former Esso bulk station facilities and Alberta Wheat Pool (AWP) Strathmore Station fertilizer storage facility located on the eastern portion of the Site. The source of the VOCs is unknown but may be associated with fill imported from an unknown source.

Groundwater Contamination	Chloride in the groundwater likely attributed to runoff from an adjacent road. The presence of nitrite, nitrate, and pesticide/herbicide are consistent with the locations of the Esso Bulk Plant and Fertilizer Distribution Facility and Alberta Wheat Pool station located on the eastern portion of the Site. The source of the VOCs in groundwater is unknown but may be related to the fill.
Contaminant Migration	The groundwater may impacts have likely infiltrated from the former facilities located on the eastern portion of the Site and from percolation through fill.
Applicable Exposure Pathways	Human Heath: direct contact; drinking water; and, inhalation. Ecological: direct contact, domestic use aquifer, and freshwater aquatic life.
Receptors	The nearest receptor is growth of grasses and trees on-Site. Kinsman Lake lies within the central portion of the Site. There are potentially 37 water wells located either on-Site or within 300 m of the Site. The Town of Strathmore water main network provides service within 300 m of the Site and they are unlikely to be used as a potable water source. The Site is covered with grass, asphalt parking, or pathways, which act as barriers for the exposure pathways of direct contact and inhalation. However, during the construction phase direct contact (dermal, inhalation, ingestion of dust, etc.) and vapour inhalation become potential risks. Once the Town Hall is occupied inhalation of vapours migrating into the working space become a potential risk

6.0 Conclusions

The Phase II ESA was conducted to determine the presence and nature of any potential environmental impacts as identified in the Phase I ESA.

Based on the findings of the Phase II ESA, we conclude the following:

- The Phase II ESA identified subsurface soil and groundwater impacts, above the appropriate regulatory guidelines, in all areas of the proposed development. These included the areas of the proposed Town Hall building, the new parking lot to the west of the building, and the parking lot to the east of the building. Contaminates of concern included BTEX, PAHs, VOCs, nitrate and nitrites, and herbicides/pesticides.

- The depths of the impacts exceeding applicable regulatory guidelines range from surface to 3.81 m and vary in depth across the Site. It is important to note that the Phase II ESA was implemented to identify the presence and nature of potential impacts. It was not designed to delineate the areal and vertical extent of any potential impacts. As such, the extent of the identified impacts at the Site are not known and further investigation would be required to fully delineate both the horizontal and vertical extents of the impacts.

- Contaminated soil will be encountered during re-development of the Site at depths that would be involved with all phases of the proposed work, from shallow depths for grading for paving and landscaping, to intermediate depths for utility excavations, and for deep depths for the proposed foundation pilings. It should also be noted that although vertical delineation of the impacts has not yet been attempted, the identified impacts have all shown to be in the fill and soils above the clay till.

- Concerns to be encountered during work on the Site and potentially remaining on Site after redevelopment are the potential petroleum hydrocarbon (BTEX, PHC Fractions, PAHs) and VOC exposure pathways, which include soil and groundwater ingestion, dermal contact, and vapour inhalation.

7.0 Recommendations

The Phase II ESA was not intended to delineate the areal and vertical extents of impacts. Further investigation would be required to fully define the VOC impacts and if they extend offsite to the north and west of the re-development, and similarly with the BTEX and PAH impacts on the east side of the Site.

If further investigation cannot take place prior to construction activities, soil sampling should be conducted during the excavations being planned for the Site. This would provide the opportunity to define the limits of the impacts in those areas while the contractors continue their work. This will also serve to identify if VOC impacts are present at the locations and depths where the any new underground utilities are to be located.

The excavations may require lining to prevent the clean backfill around the pipes from becoming impacted from soils remaining on the walls or base that are VOC impacted. This will also help protect new infrastructure from being indirect contact with impacted soil. Sampling will also serve to help segregate excavated soils that can be used elsewhere or that must be removed for offsite disposal at an approved landfill.

Information in the area of the proposed Town Hall should be collected specifically to assist in the design of a subslab depressurization system for vapours from any VOCs left beneath the building. A soil vapour monitoring program should also be considered once the building is completed in order to fully assess potential VOC vapours beneath the completed building.

Soil sampling should be conducted during excavation work planned for the abandonment/relocation of existing underground utilities. This will help to determine if there is potential risk for VOCs to migrate to Kinsman Lake.

During Site re-development, work should be conducted following the Soil and Contaminate Management Plan (Plan) that was prepared by Clifton to address the identified and potential environmental impacts at the Site. The Plan was presented in the document, *Soil and Contaminate Management Plan, Town Hall Building1, Parklane Drive, Strathmore, AB*, dated 20 June 2019. The objective of the Plan is to provide the Town and its contractors an outline of the procedures to follow when conducting excavation activities in the areas of the previously identified and potential subsurface environmental impacts at the Site.

Monitoring wells installed as part of the Phase II ESA should be properly decommissioned prior to construction work if they are located in areas to be affected by construction. If not properly decommissioned, the monitor wells can become a direct conduit from the surface to the groundwater.

A Risk Management Plan should be prepared to address any remaining soil and groundwater impacts.

8.0 Qualifications of the Assessors

Ms. Raelene Nagy, E.I.T., completed the Site visit. Ms. Nagy is an Environmental Engineer with Clifton.

Ms. Terryn Kuzyk, P.Eng, prepared the report. Ms. Kuzyk is an Environmental Engineer with Clifton.

Mr. William R. Morgan, P.Geol., completed a senior review of the report. Mr. Morgan is a Senior Environmental Geologist with Clifton.

Copies of the resumes of the assessors may be found in Appendix M.

9.0 Closure

This report has been prepared and the work referred to in this report has been undertaken by Clifton Engineering Group for the Town of Strathmore. It is intended for the sole and exclusive use of the Town of Strathmore and their respective insurers, agents, employees, advisors, and client. Any use, reliance on or decision made by any person other than the Town of Strathmore based on this report is the sole responsibility of such other person. Clifton Engineering Group makes no representation or warranty to any other person with regard to this report and the work referred to in this report and they accept no duty of care to any other person or any liability or responsibility whatsoever for any losses, expenses, damages, fines, penalties or other harm that may be suffered or incurred by any other person as a result of the use of, reliance on, any decision made or any action taken based on this report or the work referred to in this report.

The investigation undertaken by Clifton Engineering Group with respect to this report and any conclusions or recommendations made in this report reflect Clifton Engineering Group judgment based on the Site conditions observed at the time of the Site inspection on the date(s) set out in this report and on information available at the time of preparation of this report. This report has been prepared for specific application to this Site and it is based, in part, upon visual observation of the Site, and a review of available records documented in this report. No environmental site assessment can wholly eliminate uncertainty regarding the potential for recognized environmental conditions in connection with a property. Performance of a standardized environmental site assessment protocol is intended to reduce, but not eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the property, given reasonable limits of time and costs. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions.

If Site conditions or applicable standards change, or if any additional information becomes available at a future date, modifications to the findings, conclusions, and recommendations in this report may be necessary.

Other than by the Town of Strathmore, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted without the express written permission of Clifton Engineering Group. Nothing in this report is intended to constitute or provide a legal opinion.

Site information was obtained from the sources listed in the report and from interviews with individuals. Clifton Engineering Group accepts no responsibility for any deficiencies or inaccuracies in the information provided in this report that are the direct results of intentional or unintentional misrepresentations, errors or omissions of the persons interviewed, or information reviewed. Our conclusions regarding the Site are based on observations of existing site conditions and our interpretations of available site history. Conclusions regarding the condition of the Site will not represent a warranty that all areas within the Site are of the same quality as may be inferred from observable site conditions and readily available site history. The scope executed for this project is not an audit for regulatory compliance or a detailed condition survey for the presence of asbestos, lead paint, PCBs, radon, or other naturally occurring materials.

Hall building, the new parking lot to the west of the building, and the parking lot to the east of the building. Contaminates of concern included BTEX, PAHs, VOCs, nitrate and nitrites, and herbicides/pesticides.

- The depths of the impacts exceeding applicable regulatory guidelines range from surface to 3.81 m and vary in depth across the Site. It is important to note that the Phase II ESA was implemented to identify the presence and nature of potential impacts. It was not designed to delineate the areal and vertical extent of any potential impacts. As such, the extent of the identified impacts at the Site are not known and further investigation would be required to fully delineate both the horizontal and vertical extents of the impacts.

- Contaminated soil will be encountered during re-development of the Site at depths that would be involved with all phases of the proposed work, from shallow depths for grading for paving and landscaping, to intermediate depths for utility excavations, and for deep depths for the proposed basement excavation and piling. It should also be noted that although vertical delineation of the impacts has not yet been attempted, the impacts that have been identified have all shown to be in the fill and soils above the clay till.

- The concerns to be encountered during work on the Site and potentially remaining on Site after redevelopment are the potential petroleum hydrocarbon (BTEX, PHC Fractions, PAHs) and VOC exposure pathways, which include soil and groundwater ingestion, dermal contact, and vapour inhalation.

The Phase II ESA was not intended to delineate the areal and vertical extents of impacts. Further investigation would be required to fully define the VOC impacts and if they extend offsite to the north and west of the re-development, and similarly with the BTEX and PAH impacts on the east side of the Site.

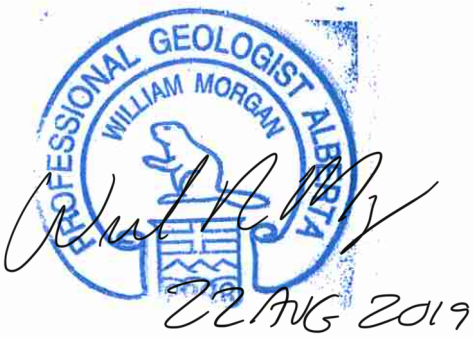
Based on the conclusions of the Phase II ESA we recommend the following:

If further investigation cannot take place prior to construction activities, soil sampling should be conducted during the excavations being planned for the Site. This would provide the opportunity to define the limits of the impacts in those areas while the contractors continue their work. This will also serve to identify if VOC impacts are present at the locations and depths where the any new underground utilities are to be located. The excavations may require lining to prevent the clean backfill around the pipes from becoming impacted from soils remaining on the walls or base that are VOC impacted. This will also help protect new infrastructure from being indirect contact with impacted soil. Sampling will also serve to help segregate excavated soils that can be used elsewhere or that must be removed for offsite disposal at an approved landfill.

Information in the area of the proposed Town Hall should be collected specifically to assist in the design of a subslab depressurization system for vapours from any VOCs left beneath the building. A soil vapour monitoring program should also be considered once the building is completed in order to fully assess potential VOC vapours beneath the completed building.

No environmental site investigation or remediation can wholly eliminate uncertainty regarding environmental conditions in connection with a property. This investigation is intended to reduce, but not eliminate, the uncertainty regarding environmental conditions. The work was based, in part, upon the environmental quality guidelines and regulations in effect when the work was conducted. Future regulatory changes may require re-assessment of the findings of this investigation.

Clifton



William R. Morgan P.Geol.
Senior Environmental Geologist

Association of Professional Engineers
and Geoscientists of Alberta
Permit to Practice P4823

10.0 References

Sources of Information	
Historical Records	
Land Title Documents	Registrar of Land Titles accessed through the Alberta Government's Spin II Spatial Information System at: https://alta.registries.gov.ab.ca/spinii/logon.aspx
Aerial Photographs (Roll Number, Photo Number, Year @ Scale)	AS0168, 179, 1950 @ 1:40,000 AS0875, 08, 1963 @ 1:31,680 AS0985, 38, 1967 @ 1:31,680 AS1453, 169, 1974 @ 1:24,000 AS3464, 32, 1977 @ 1:10,000 AS2808, 178, 1983 @ 1:25,000 AS3805, 122, 1988 @ 1:20,000 AS4543, 196, 1994 @ 1:20,000 AS4752, 124, 1997@ 1:20,000 AS5294-B, 72, 2004 @ 1:20,000 AS5437B, 129, 2008 @ 1:20,000 2012 Google Earth Pro® ©2018 Google Image © 2018 DigitalGlobe 2018 Google Earth Pro® ©2018 Google Image © 2018 DigitalGlobe
Federal, Provincial, and Private Historical Records	
Alberta Energy Regulator	http://www.abacusdatagraphics.com/ A search was conducted within a 300 m radius of the Site.
Alberta Environment and Sustainable Resource Development – Regulatory Approvals Centre	https://avw.alberta.ca/ApprovalViewer.aspx A search was conducted with the following descriptions: SW¼ 14-024-25 W4M.
Alberta Environment and Sustainable Resource Development – Groundwater Information System	http://groundwater.alberta.ca/WaterWells/d/ A search was conducted within 300 m radius of the Site.
Environmental Site Assessment Repository	http://www.environment.alberta.ca/01520.html A search was conducted within a 300 m radius of the Site.

Sources of Information	
Historical Records	
EcoLog Environmental Risk Information System (ERIS)	http://www.eris.ca/ A search was conducted within a 300 m radius of the Site.
Referenced Reports	
Clifton, May 2019, *Geotechnical Investigation, Town Hall Building, 1 Parkland Drive, Strathmore, AB*	

Appendix A
Figures

Clifton

STRATHMORE TOWN HALL PHASE I/PHASE II ESA

STRATHMORE, ALBERTA

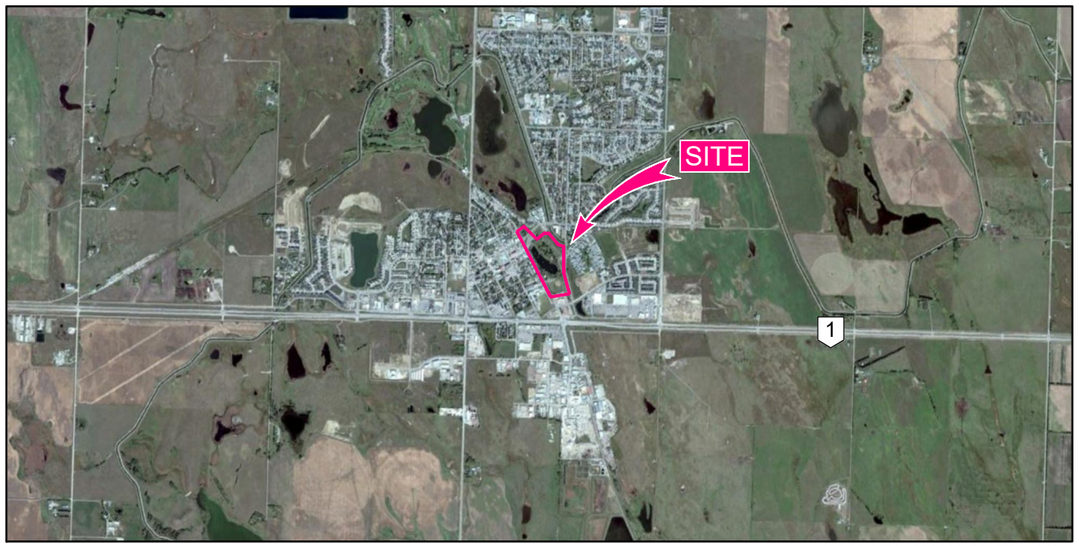


KEY PLAN - NOT TO SCALE



LOCATION PLAN
SCALE 1: 200,000

IMAGE COURTESY OF GOOGLE DATED AUG 2015



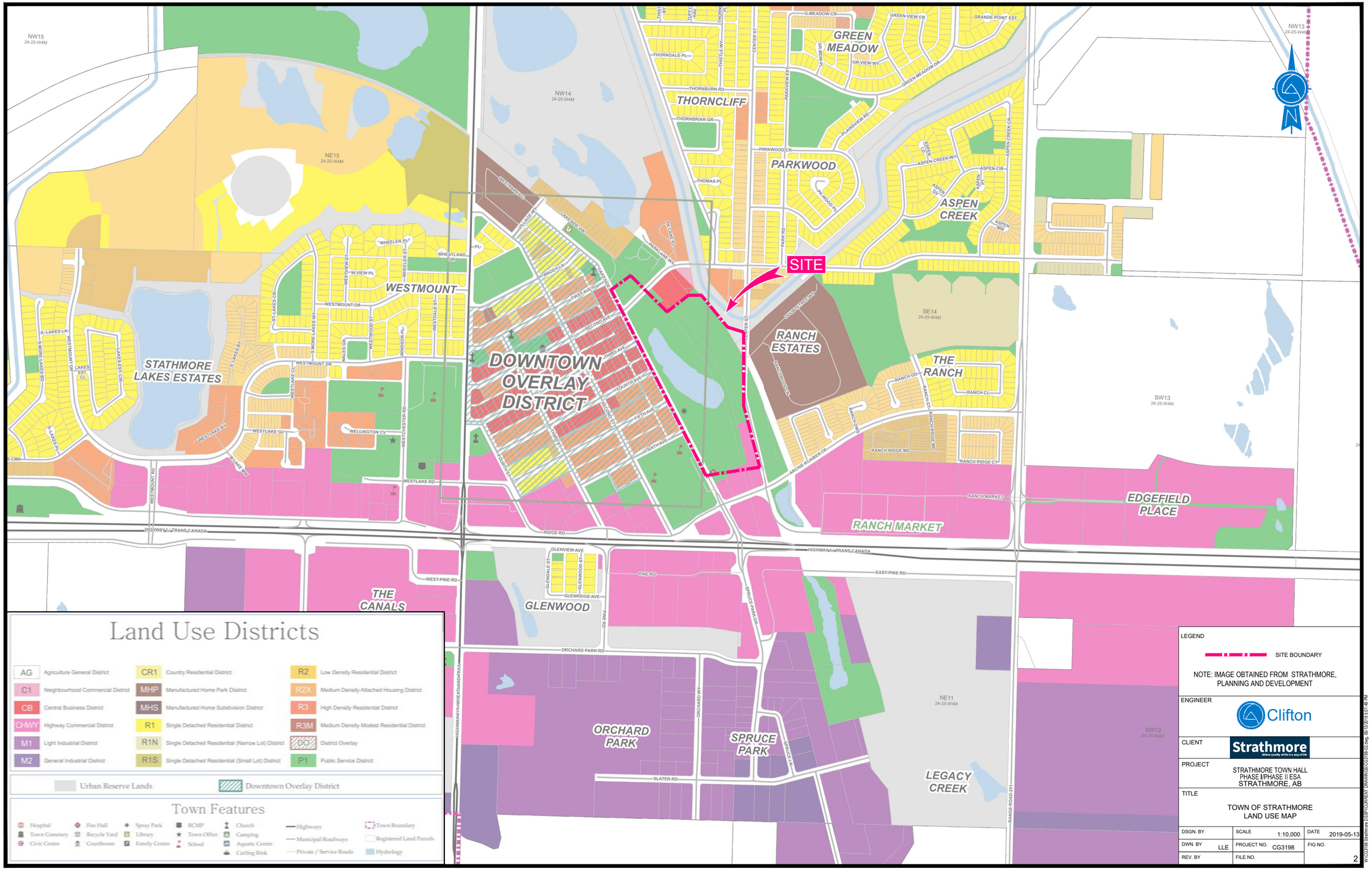
SITE PLAN
SCALE 1: 50,000

IMAGE COURTESY OF GOOGLE DATED AUG 2015

FIGURES LIST	
FIG No.	DESCRIPTION
1	SITE LOCATION MAP
2	TOWN OF STRATHMORE LAND USE MAP
3	SITE AND SURROUNDING PROPERTIES
4	AERIAL PHOTOGRAPH 1950
5	AERIAL PHOTOGRAPH 1963
6	AERIAL PHOTOGRAPH 1967
7	AERIAL PHOTOGRAPH 1974
8	AERIAL PHOTOGRAPH 1977
9	AERIAL PHOTOGRAPH 1983
10	AERIAL PHOTOGRAPH 1988
11	AERIAL PHOTOGRAPH 1994
12	AERIAL PHOTOGRAPH 1997
13	AERIAL PHOTOGRAPH 2004
14	AERIAL PHOTOGRAPH 2008
15	BOREHOLE AND MONITORING WELL LOCATION PLAN
16	SOIL EXCEEDANCES AEP 2019 TIER 1 GUIDELINES
17	GROUNDWATER VOCs EXCEEDANCES AEP 2019 TIER 1 GUIDELINES
18	GROUNDWATER HERBICIDE/NUTRIENT EXCEEDANCES AEP 2019 TIER 1 GUIDELINES

ENGINEER: Clifton	CLIENT: Strathmore (Where quality of life is a way of life)	FIGURE NAME: SITE LOCATION MAP	FIGURE NO.: 1
		ISSUED DATE: 2019-05-13	PROJECT NO.: CG3198

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Land Use Districts

AG	Agriculture General District	CR1	Country Residential District	R2	Low Density Residential District
C1	Neighbourhood Commercial District	MHP	Manufactured Home Park District	R2X	Medium Density Attached Housing District
CB	Central Business District	MHS	Manufactured Home Subdivision District	R3	High Density Residential District
CHWY	Highway Commercial District	R1	Single Detached Residential District	R3M	Medium Density Modest Residential District
M1	Light Industrial District	R1N	Single Detached Residential (Narrow Lot) District	DO	District Overlay
M2	General Industrial District	R1S	Single Detached Residential (Small Lot) District	P1	Public Service District

Urban Reserve Lands

Downtown Overlay District

Town Features

Hospital	Fire Hall	Spray Park	RCMP	Church	Highways	Town Boundary
Town Cemetary	Recycle Yard	Library	Town Office	Camping	Municipal Roadways	Registered Land Parcels
Civic Centre	Courthouse	Family Centre	School	Aquatic Centre	Private / Service Roads	Hydrology
				Curling Rink		

LEGEND

SITE BOUNDARY

NOTE: IMAGE OBTAINED FROM STRATHMORE, PLANNING AND DEVELOPMENT

ENGINEER Clifton

CLIENT Strathmore

PROJECT
STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

TITLE
TOWN OF STRATHMORE
LAND USE MAP

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DWN. BY LLE	PROJECT NO. CG3198	FIG NO.	
REV. BY	FILE NO.		2

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LEGEND

SITE BOUNDARY

AWP - ALBERTA WHEAT POOL
IOL - IMPERIAL OIL LTD.

BAR SCALE

100 METERS 0 1:5000 100

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

Clifton

FIGURE NAME

SITE AND SURROUNDING PROPERTIES

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

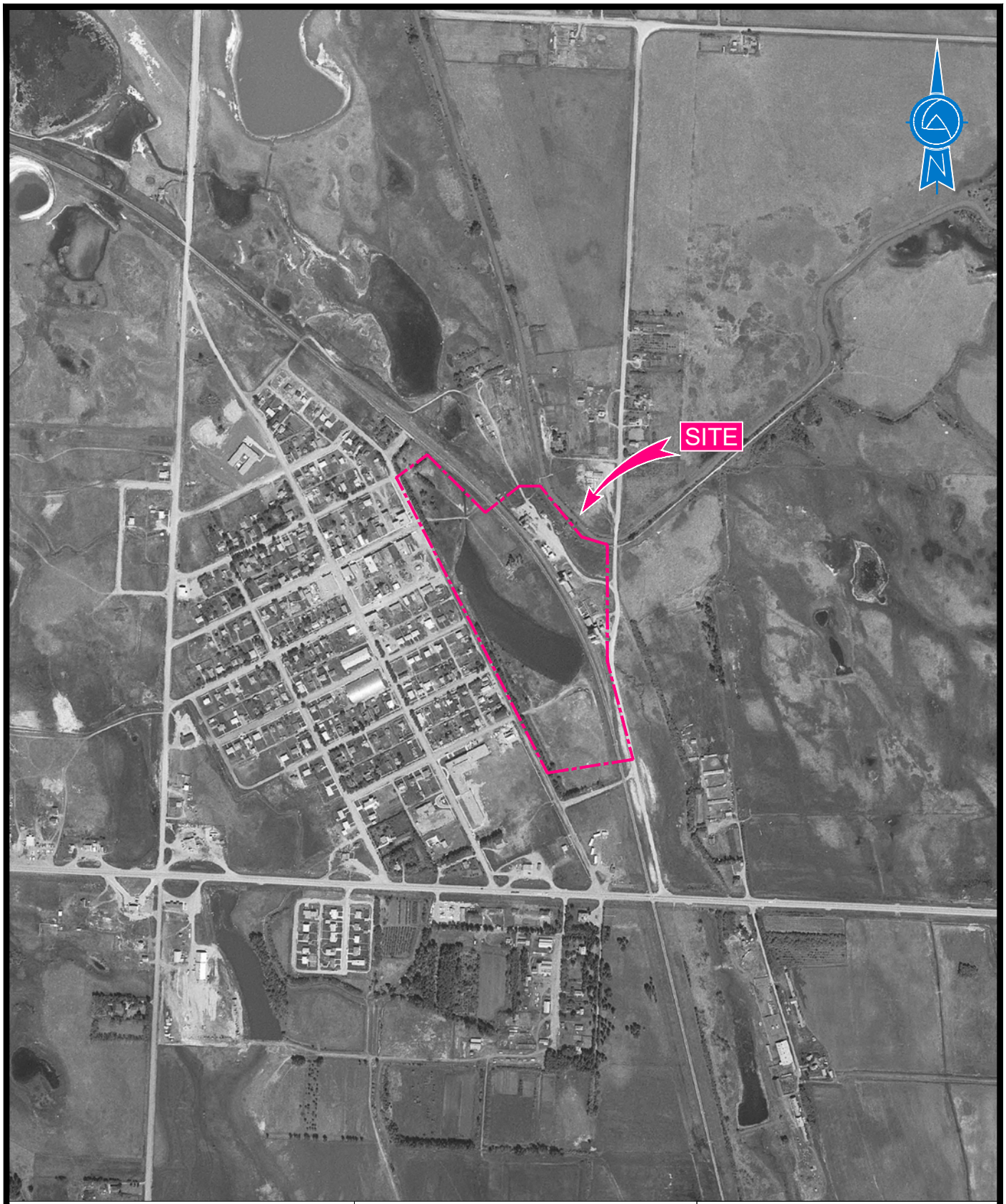
Clifton

FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

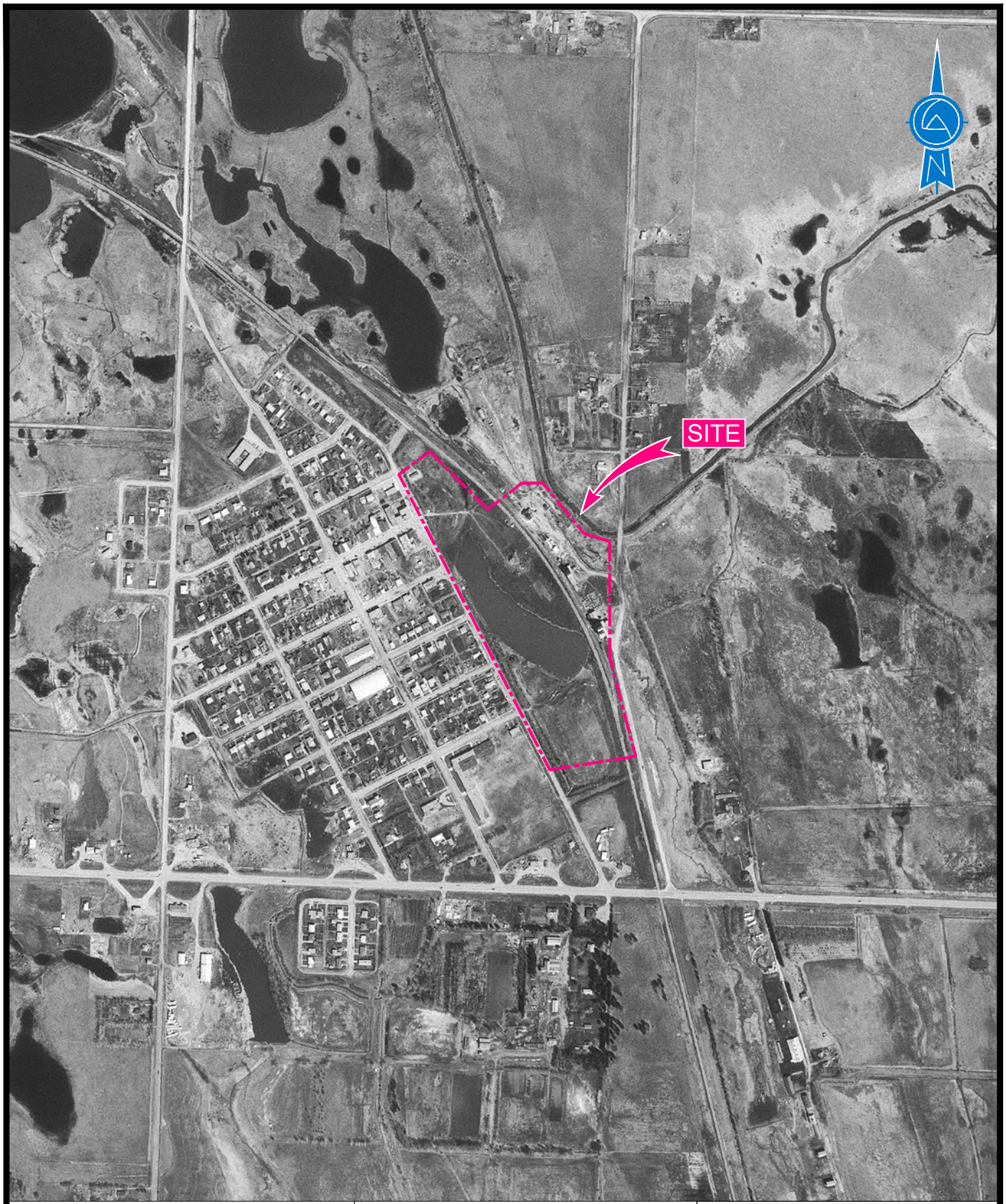
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FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

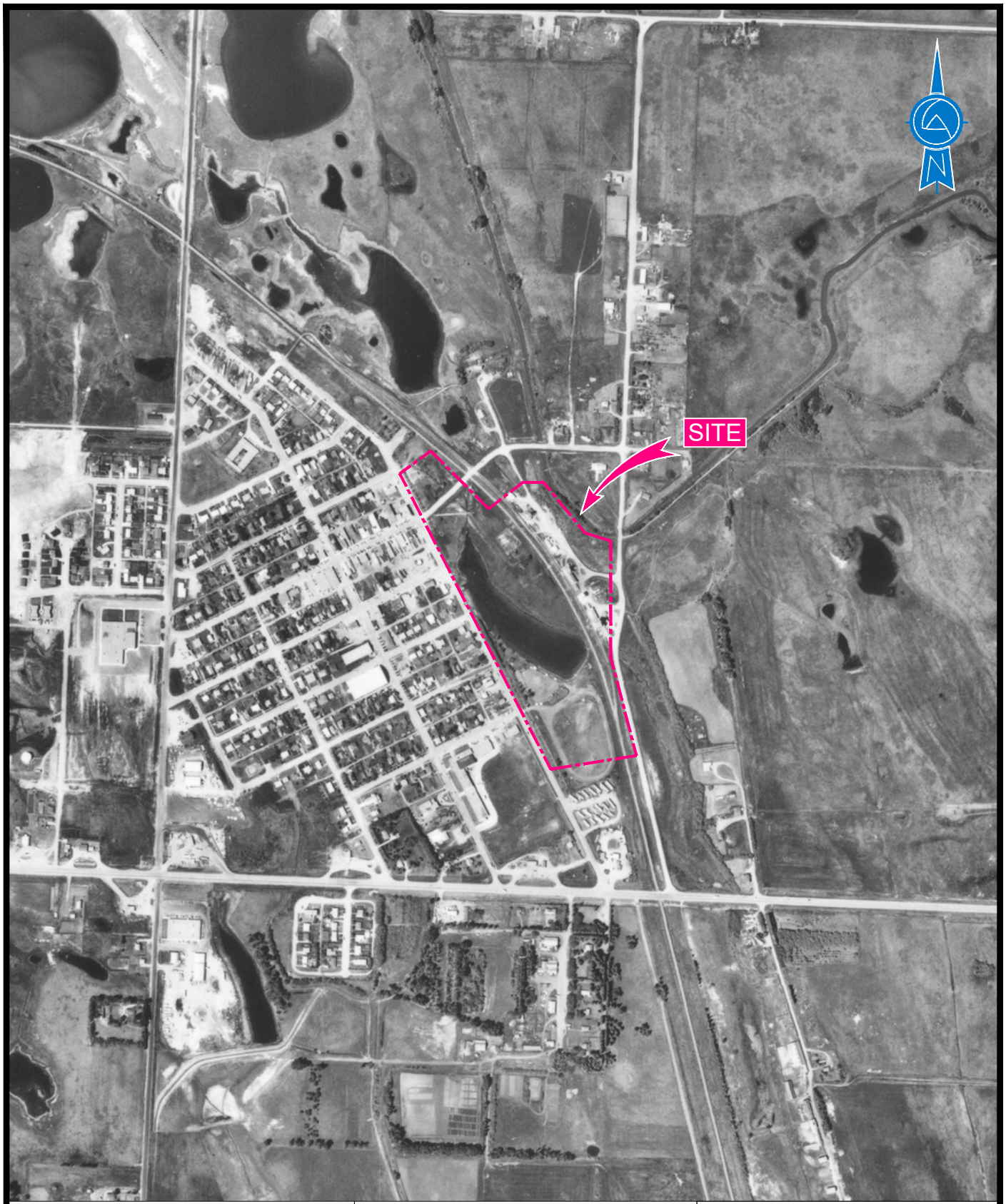
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FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

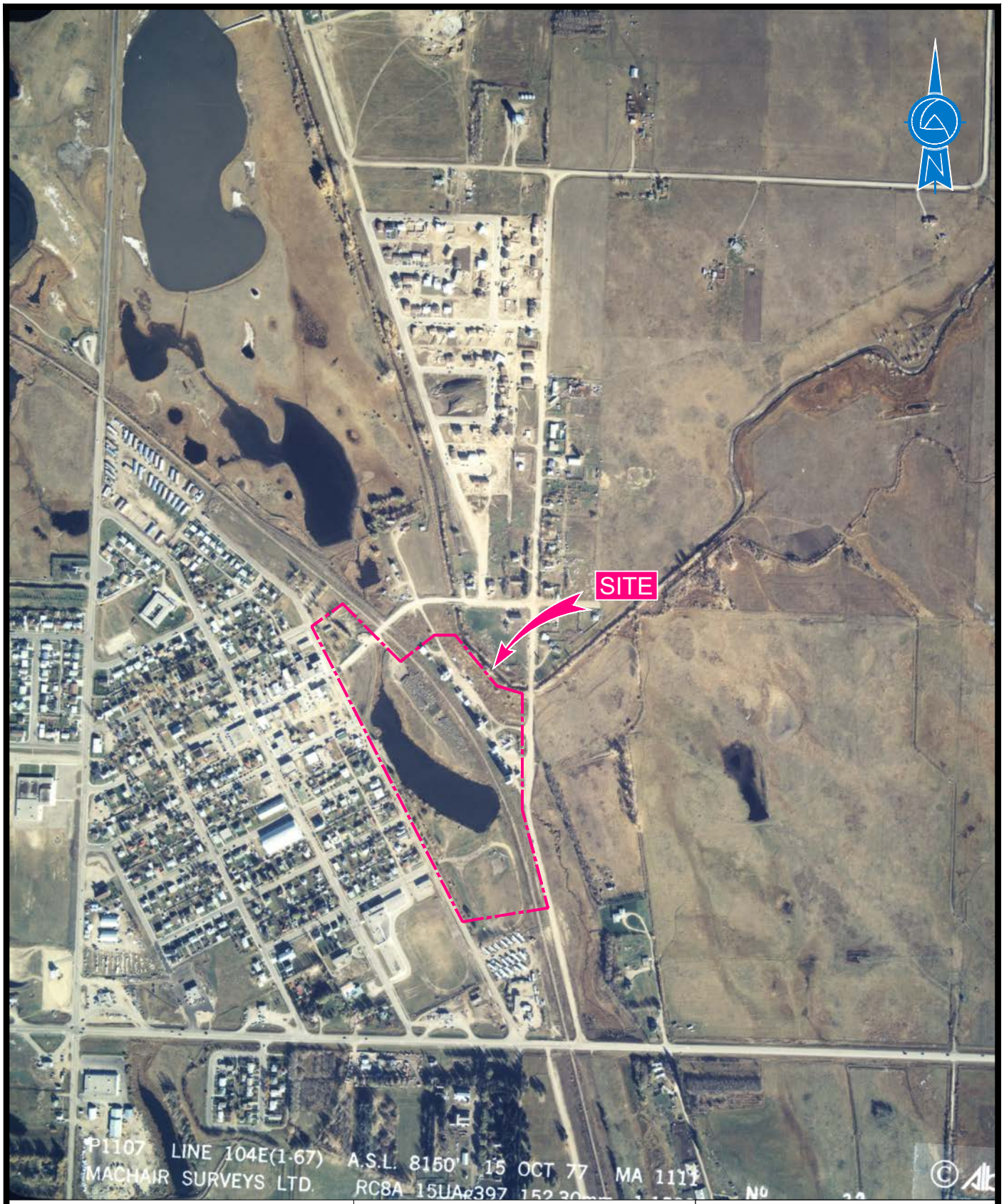
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FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

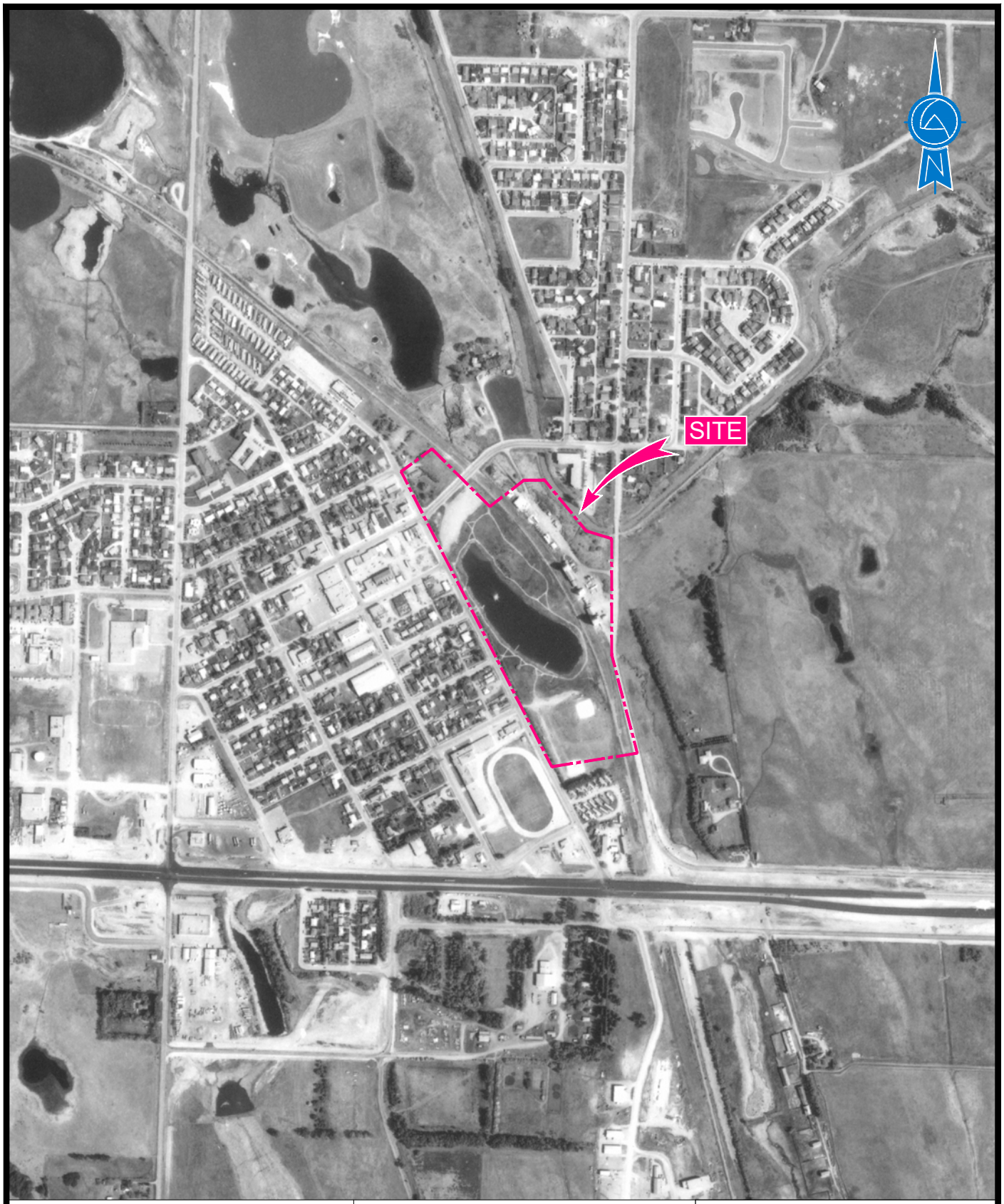
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FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

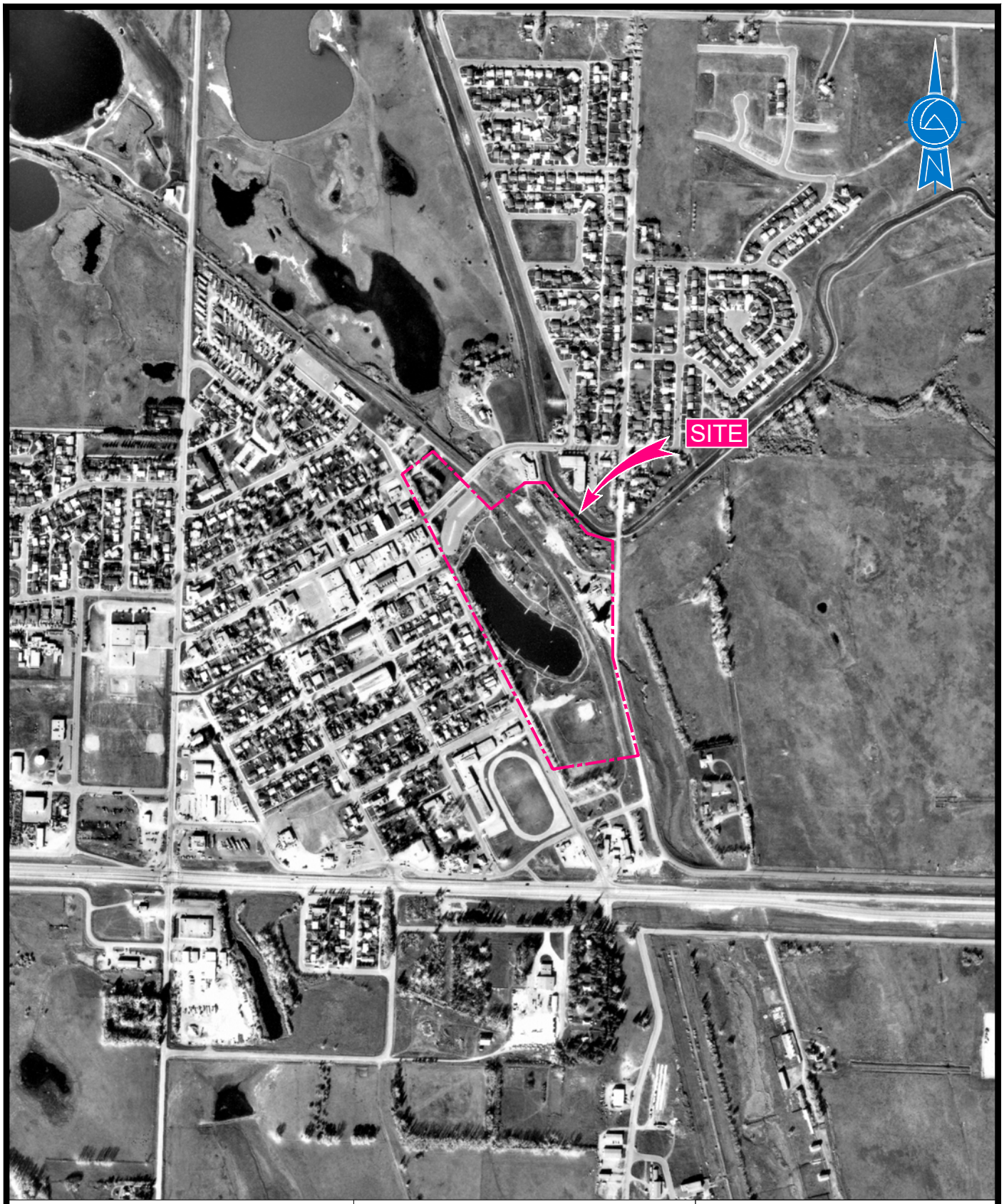
Clifton

FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

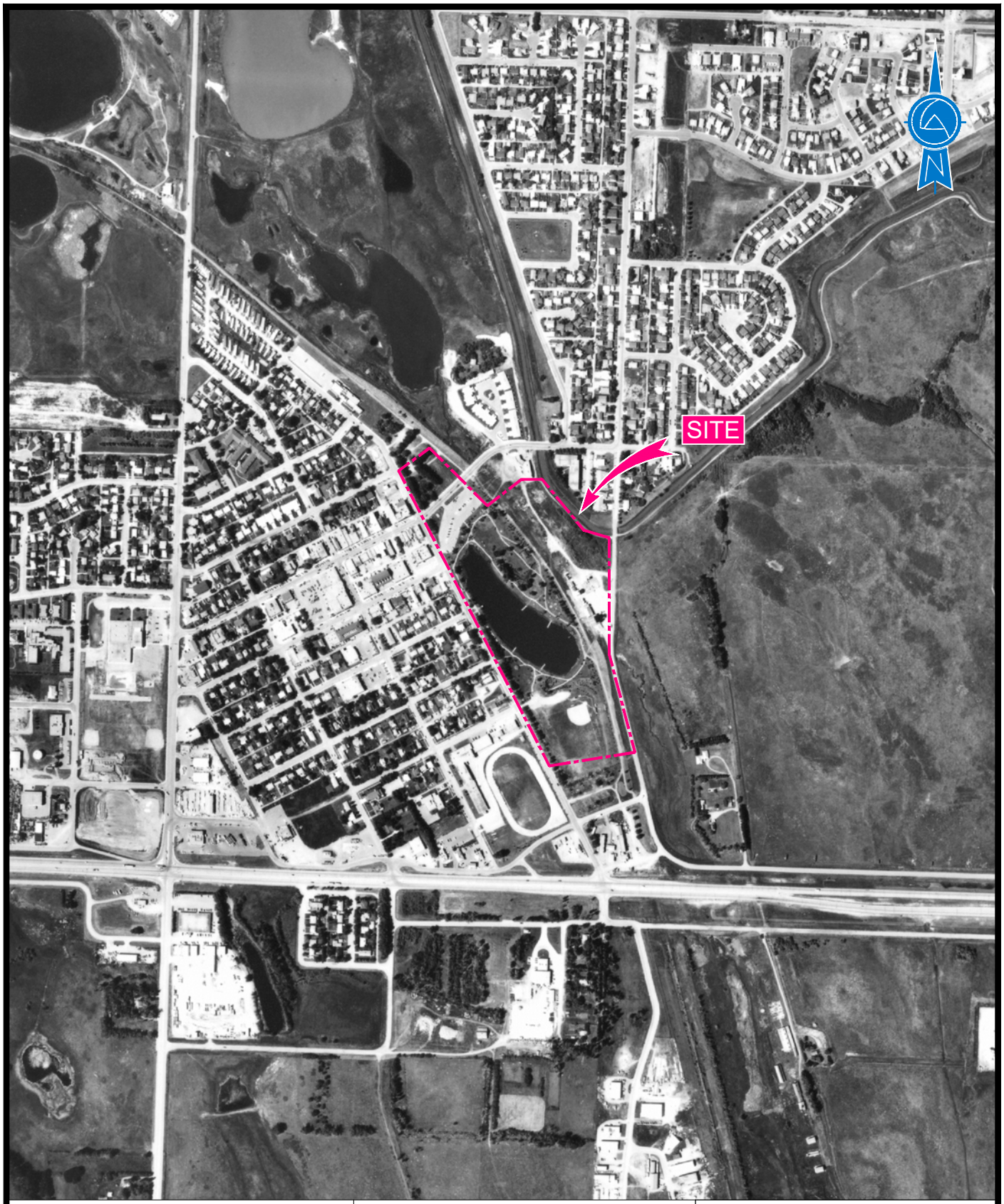
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FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

Clifton

FIGURE NAME

AERIAL PHOTOGRAPH 1994

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

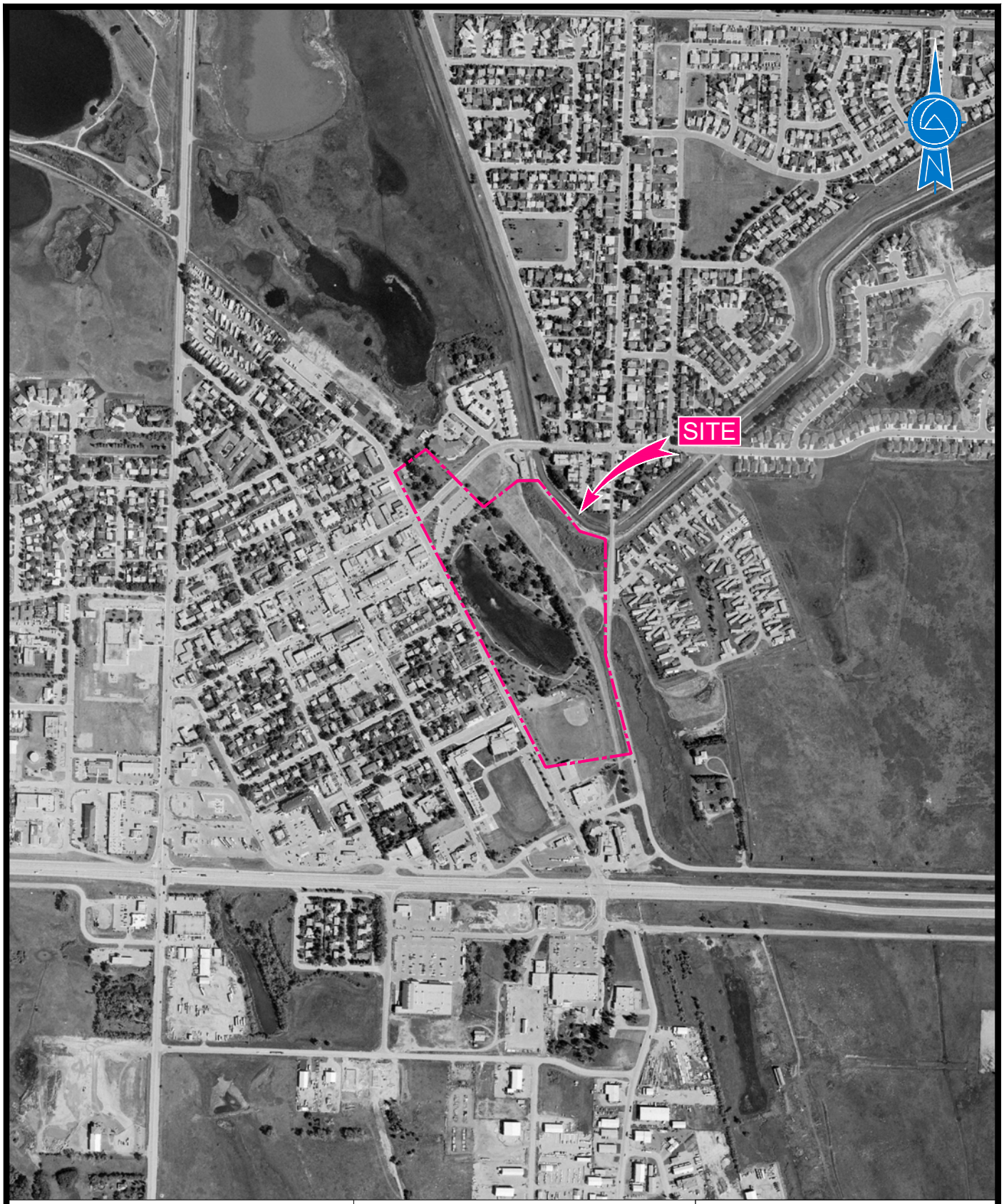
Clifton

FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

Clifton

FIGURE NAME

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LEGEND

SITE BOUNDARY

BAR SCALE

250 METERS 0 1:10,000 250

LETTER SIZE DRAWING

PROJECT

STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

CLIENT

Strathmore

ENGINEER

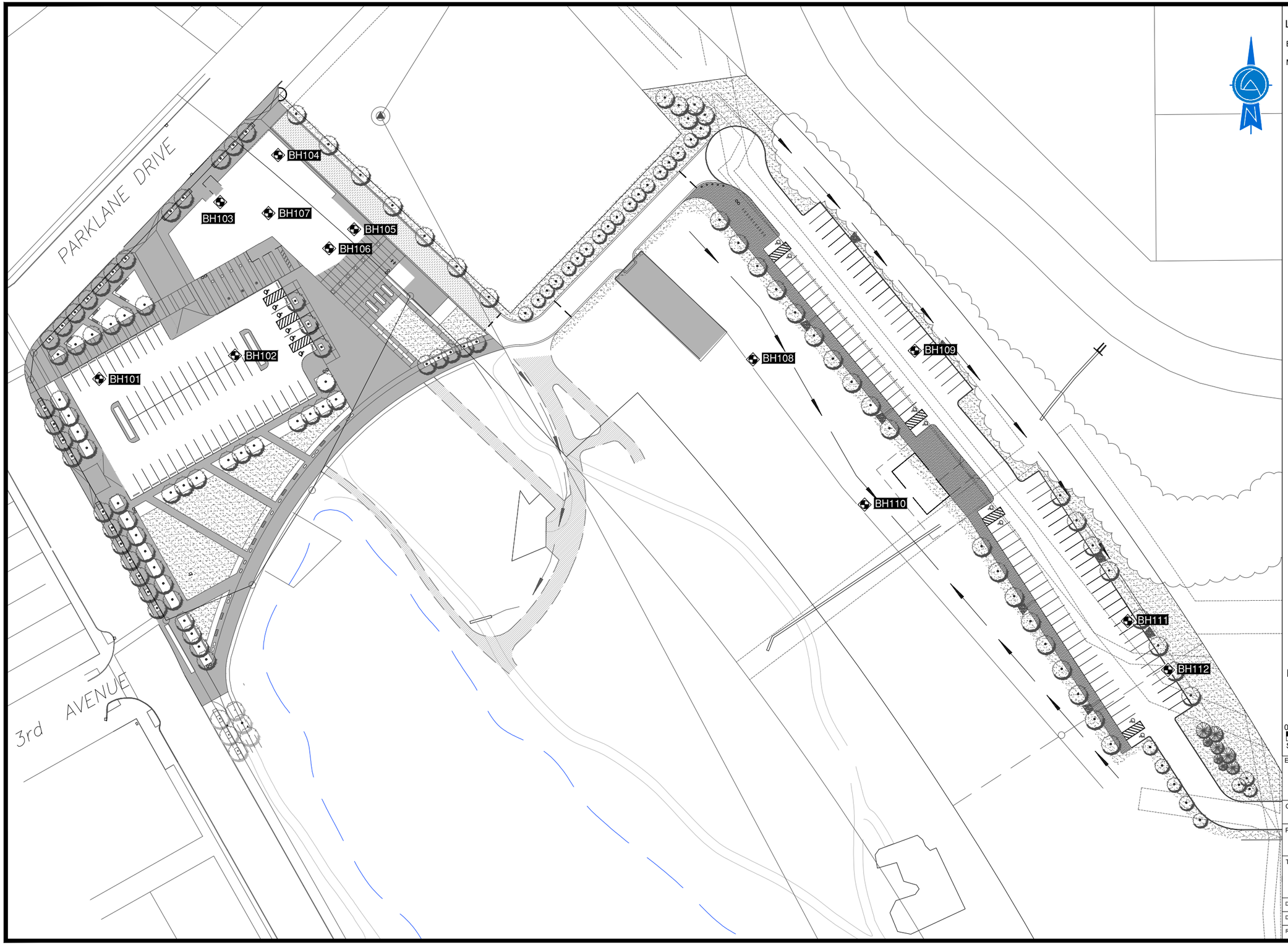
Clifton

FIGURE NAME

AERIAL PHOTOGRAPH 2008

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DWN. BY	FILE NO.	FIG. NO.
LLE	CG3198-04-14	14
REV. BY	ISSUED DATE	
	2019-05-13	

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LEGEND:

BOREHOLE LOCATION

MONITORING WELL LOCATION

NOTES:

1. PROPOSED LAYOUT PROVIDED BY GIBBS GAGE ARCHITECTS ON 7 MARCH 2019.

0 10 20 30 40 50 m

SCALE 1:1000 PLOT SIZE 11x17

ENGINEER Clifton

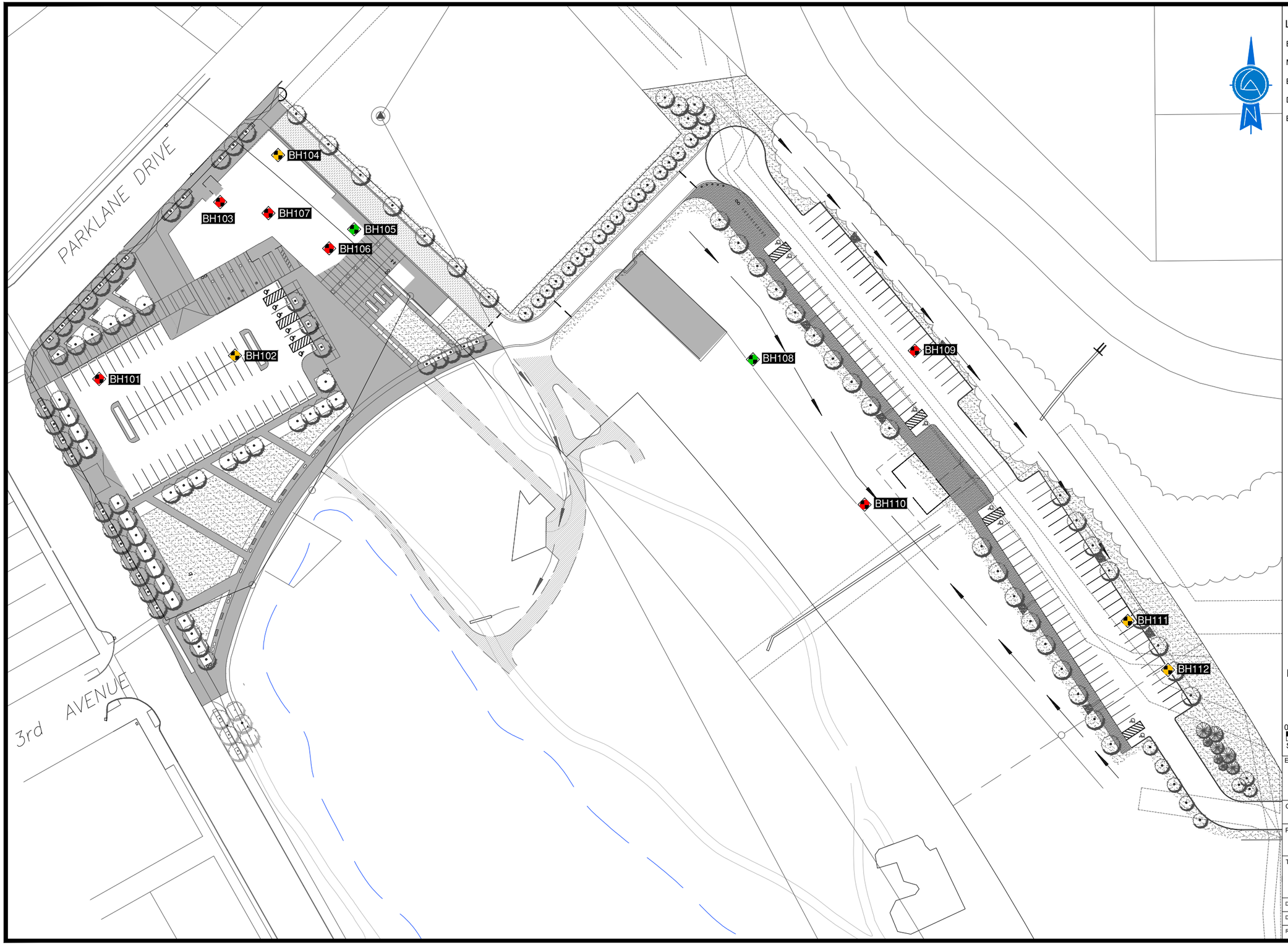
CLIENT Strathmore

PROJECT
STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

TITLE
BOREHOLE AND MONITORING WELL LOCATION PLAN

DSGN. BY	SCALE 1:1000	DATE 2019-06-19	
DWN. BY RD	PROJECT NO. CG3198	FIG NO. 15	
REV. BY	FILE NO.		

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LEGEND:

- BOREHOLE LOCATION
- MONITORING WELL LOCATION
- BELOW DETECTION
- DETECTED
- EXCEEDS TIER 1

NOTES:

1. PROPOSED LAYOUT PROVIDED BY GIBBS GAGE ARCHITECTS ON 7 MARCH 2019.

0 10 20 30 40 50 m

SCALE 1:1000 PLOT SIZE 11x17

ENGINEER Clifton

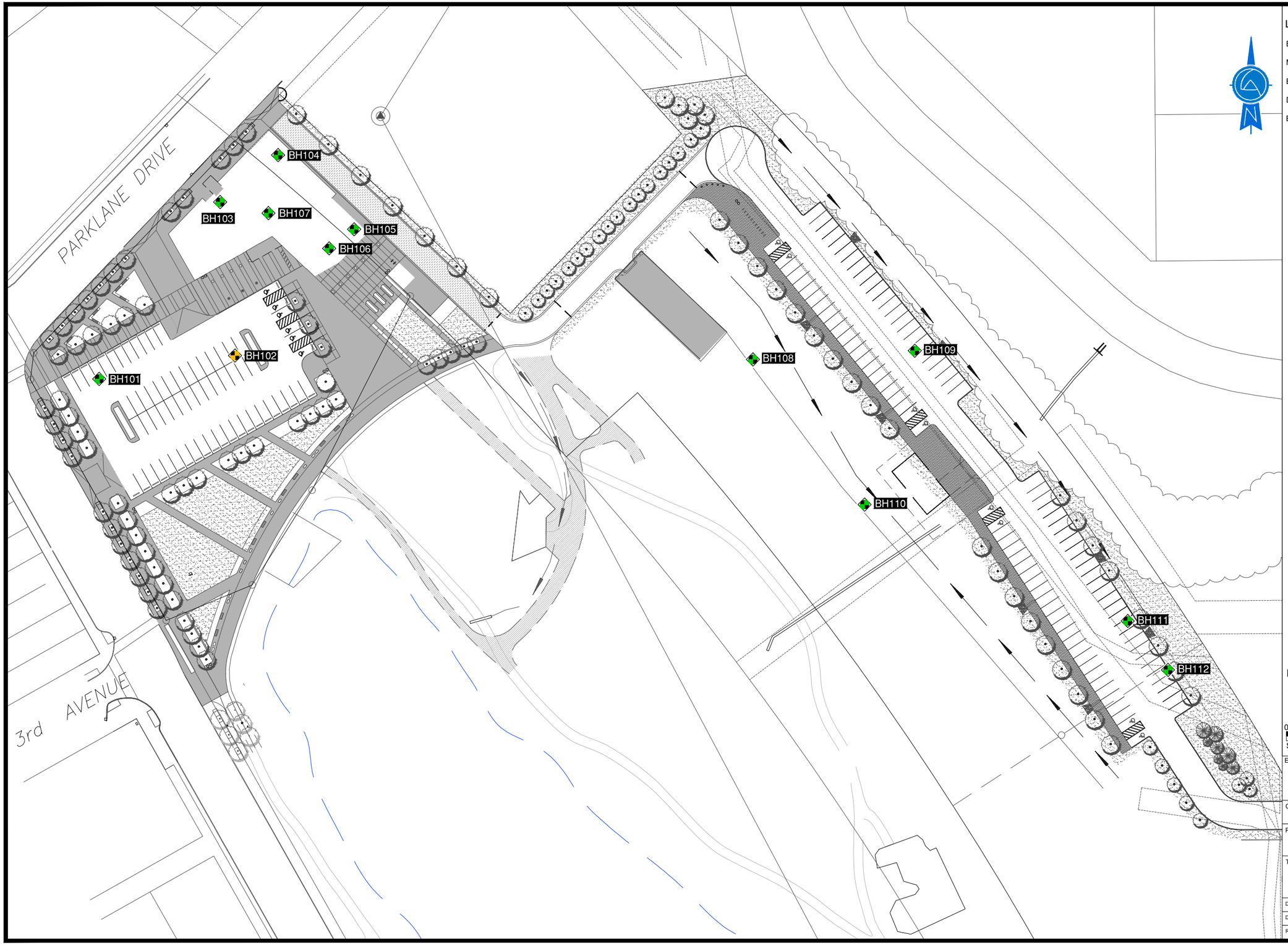
CLIENT Strathmore

PROJECT
STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

TITLE
SOIL EXCEEDENCES
AEP 2019 TIER 1 GUIDELINES

DSGN. BY	SCALE 1:1000	DATE 2019-06-19	
DWN. BY RD	PROJECT NO. CG3198	FIG NO. 16	
REV. BY	FILE NO.		

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LEGEND:

- BOREHOLE LOCATION
- MONITORING WELL LOCATION
- BELOW DETECTION
- DETECTED
- EXCEEDS TIER 1

NOTES:

1. PROPOSED LAYOUT PROVIDED BY GIBBS GAGE ARCHITECTS ON 7 MARCH 2019.

0 10 20 30 40 50 m

SCALE 1:1000 PLOT SIZE 11x17

ENGINEER Clifton

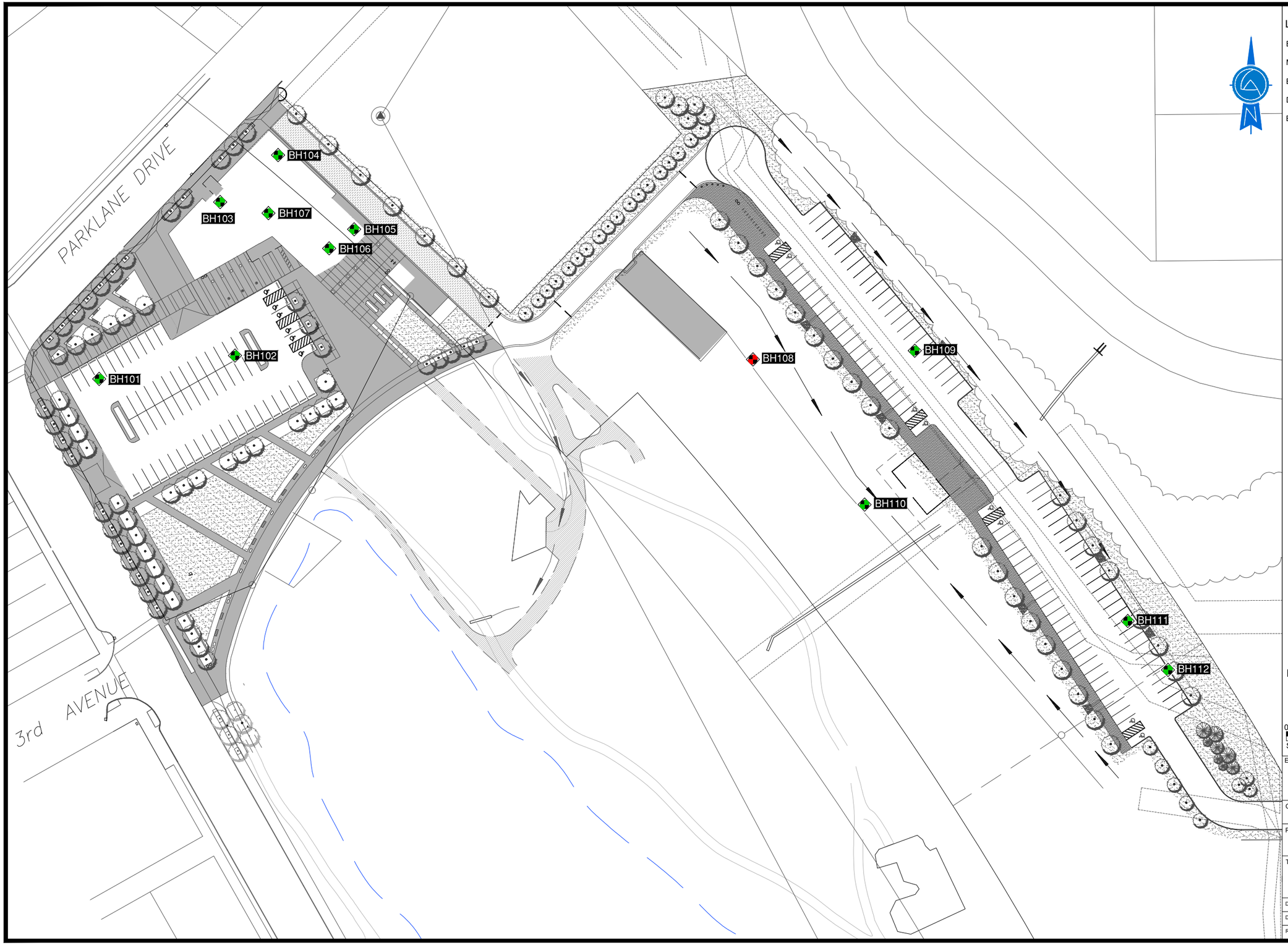
CLIENT Strathmore

PROJECT
STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

TITLE
GROUNDWATER VOCs EXCEEDENCES
AEP 2019 TIER 1 GUIDELINES

DSGN. BY	SCALE 1:1000	DATE 2019-06-19	
DWN. BY RD	PROJECT NO. CG3198	FIG NO. 17	
REV. BY	FILE NO.		

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LEGEND:

- BOREHOLE LOCATION
- MONITORING WELL LOCATION
- BELOW DETECTION
- DETECTED
- EXCEEDS TIER 1

NOTES:

1. PROPOSED LAYOUT PROVIDED BY GIBBS GAGE ARCHITECTS ON 7 MARCH 2019.

0 10 20 30 40 50 m

SCALE 1:1000 PLOT SIZE 11x17

ENGINEER Clifton

CLIENT Strathmore

PROJECT
STRATHMORE TOWN HALL
PHASE I/PHASE II ESA
STRATHMORE, AB

TITLE
GROUNDWATER HERBICIDES/NUTRIENTS
EXCEEDENCES AEP 2019 TIER 1 GUIDELINES

DSGN. BY		SCALE 1:1000	DATE 2019-06-19
DWN. BY	RD	PROJECT NO. CG3198	FIG NO. 18
REV. BY		FILE NO.	

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Appendix B
Physical Setting Report

Clifton

PSR
PHYSICAL SETTING REPORT

Property Information

Order Number:		20190312051p
Date Completed:		March 18, 2019
Project Number:		CG3198
Project Property:		Strathmore Town Hall - Phase I ESA Kinsemen Park Strathmore AB
Coordinates:		
	Latitude:	51.042244
	Longitude:	-113.390854
	UTM Northing:	5657242.48144 Metres
	UTM Easting:	332397.297473 Metres
	UTM Zone:	UTM Zone 12U
	Elevation:	971.00 m
	Slope Direction:	NNE

Property Information....1
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Hydrologic Information....4
Geologic Information....5
Soil Information....9
Wells and Additional Sources....36
  Report Summary....37
  Detail Report....39
Radon Information....223
Appendix....224
Liability Notice....226

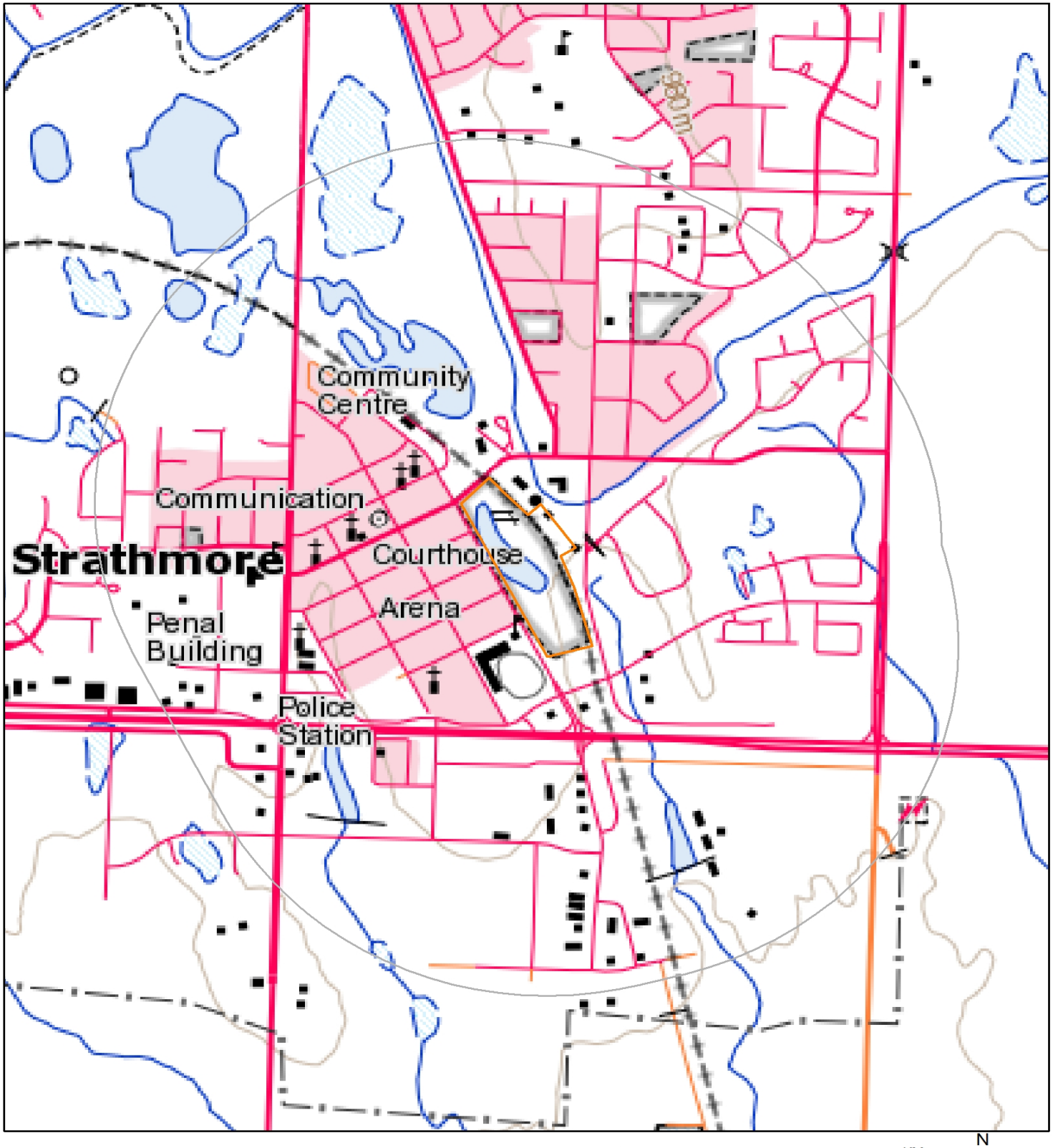
The ERIS ***Physical Setting Report - PSR*** provides comprehensive information about the physical setting around a site and includes a complete overview of topography as well as hydrologic, geologic and soil characteristics. The location and detailed attributes of oil and gas wells, water wells, and radon are also included for review.

The compilation of both physical characteristics of a site and additional attribute data is useful in assessing the impact of migration of contaminants and subsequent impact on soils and groundwater.

Disclaimer

This Report does not provide a full environmental evaluation for the site or adjacent properties. Please see the terms and disclaimer at the end of the Report for greater detail.

Topographic Information



Topographic Map

0.25 0.125 0 0.25 0.5 KM

N

Address: Kinsemen Park,Strathmore,AB

Data source: Toporama (1:50K) by Natural Resource Canada. Publication date: 2013-07-19
Legend available at ftp://ftp.geogratis.gc.ca/pub/nrcan_rncan/raster/toporama/doc/Toporama_en_Legend.pdf

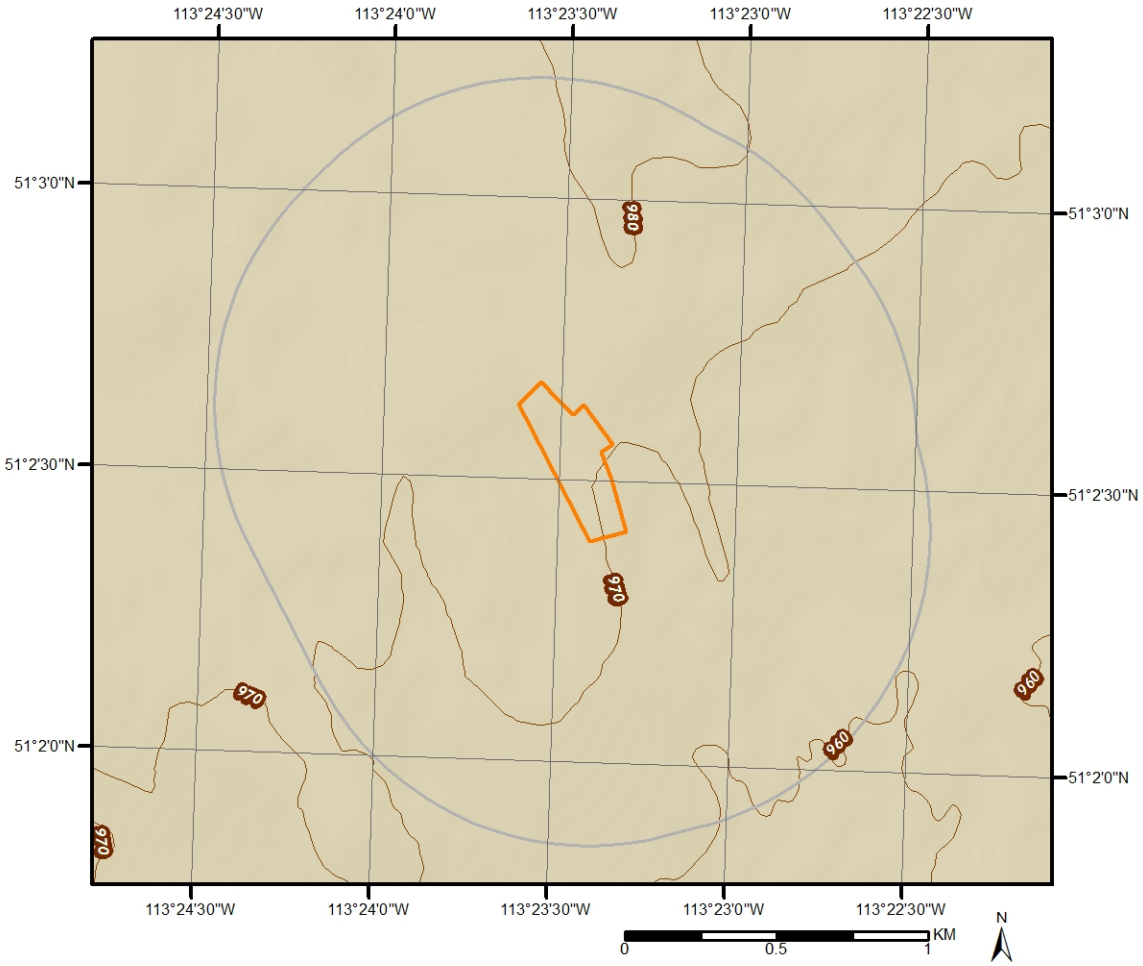
ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

Topographic Information

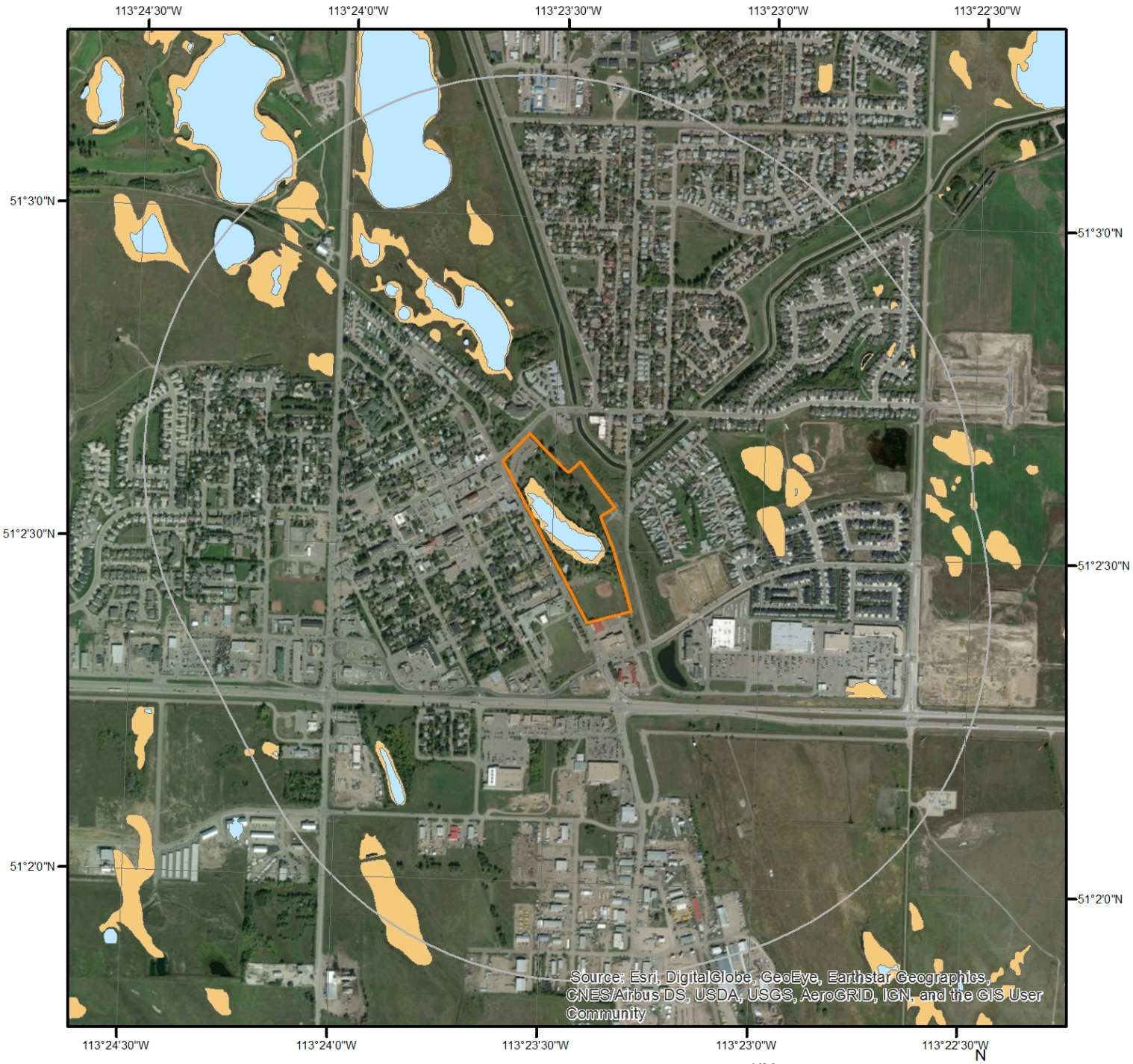
The previous topographic map(s) show general topographic information in the surrounding area of the project property, using Toporama data or a provincial source when available. Below are shaded relief map(s), derived from Digital Elevation data to depict terrain in further detail.

Topographic information at project property:

Elevation:	971.00 m
Slope Direction:	NNE



Hydrologic Information



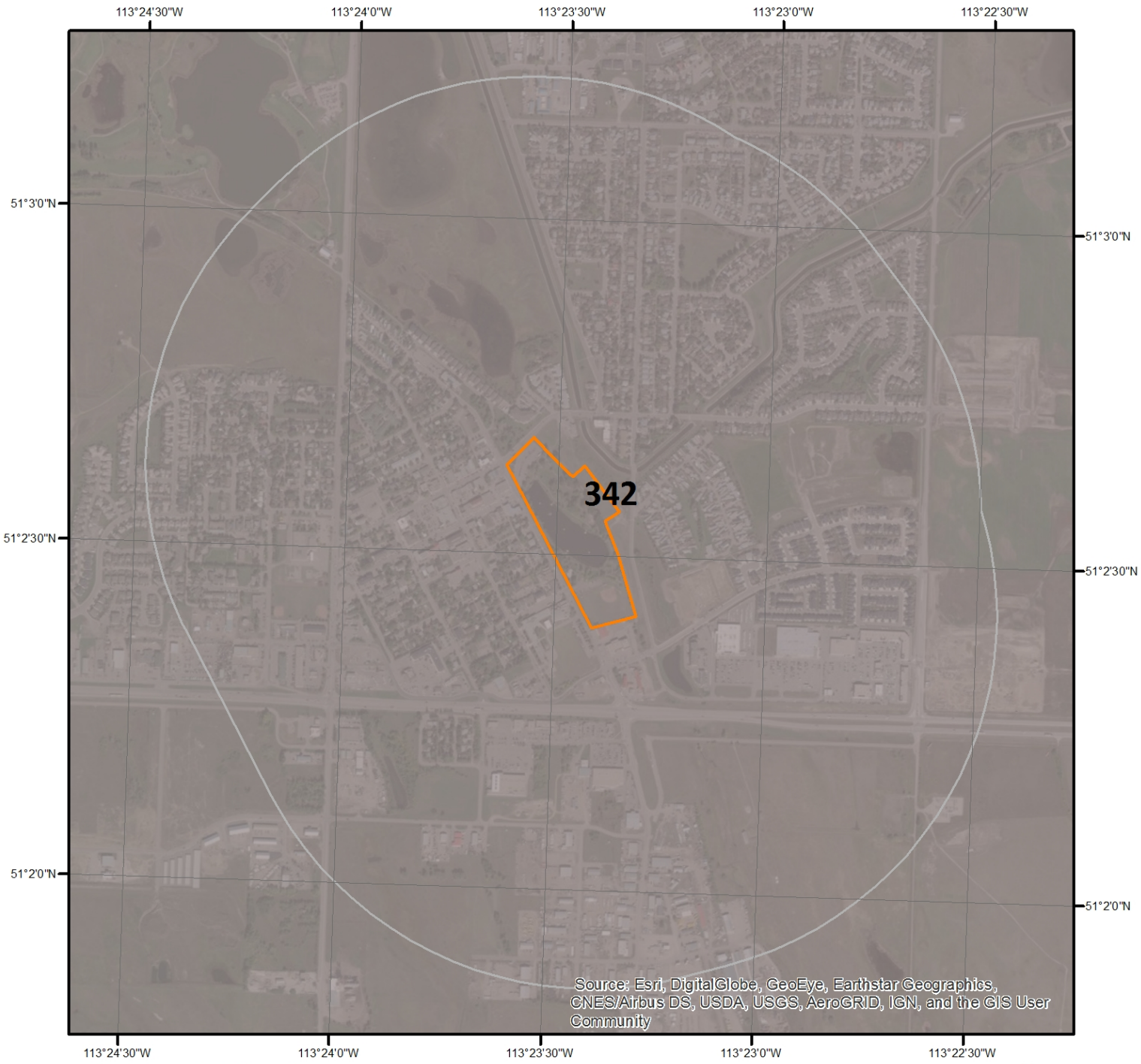
Wetland

This map shows wetland existence. Data coverage is shown to the right.
Gray indicates no data available in the area.

- Marsh
- Open Water

ENVIRONMENTAL RISK INFORMATION SERVICES

Geologic Information



Bedrock Geology

0 0.2 0.4 0.8 KM

N

This map shows bedrock geologic units in the area. Please refer to the report for detailed descriptions. Data coverage is shown to the right. Gray indicates no data available in the area.



ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

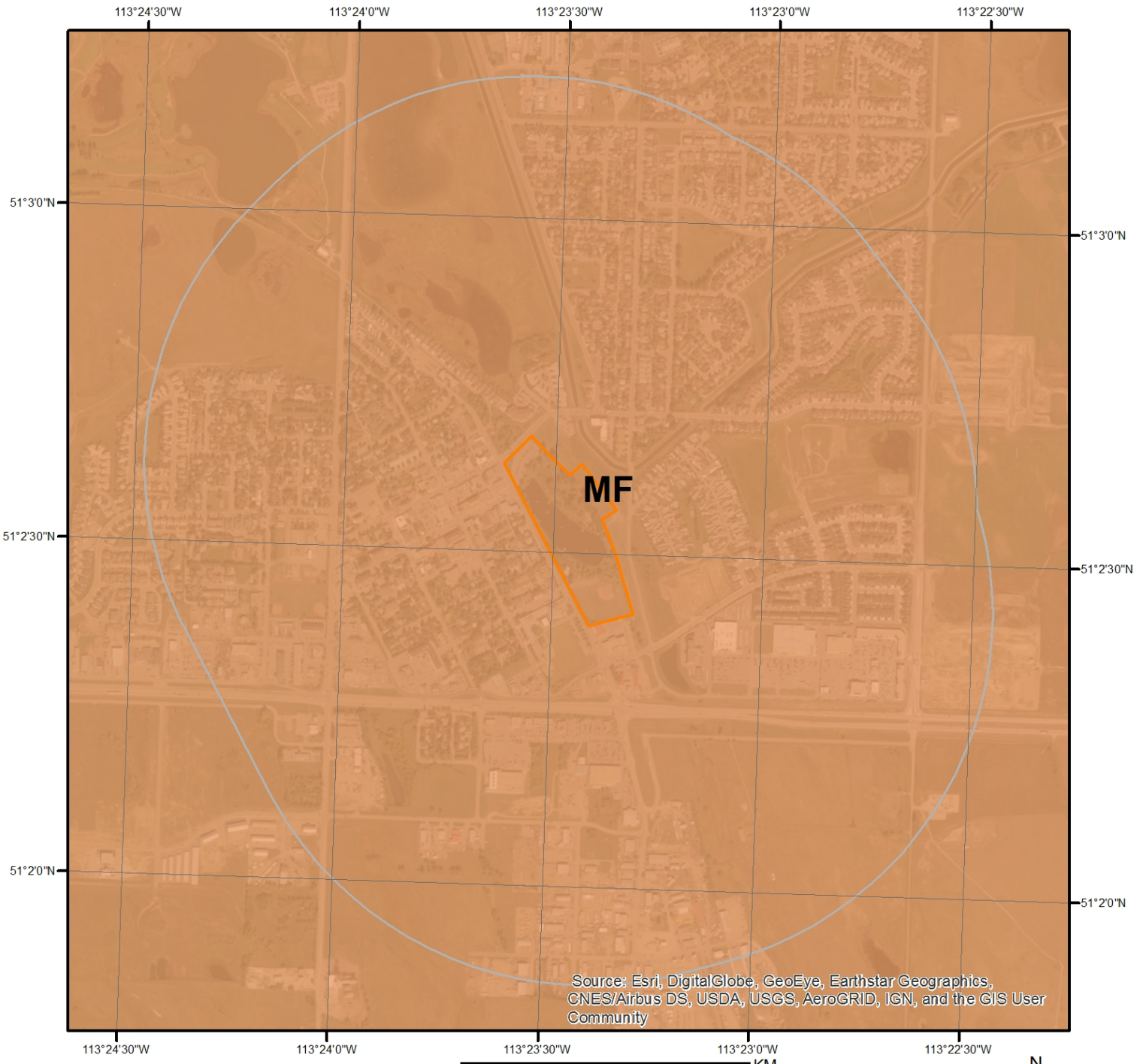
Geologic Information

Detailed bedrock geology information about each unit within the search radius is provided below.

Unit ID 342

Unit Name:	Scollard Formation
Lithology:	Sandstone, siltstone, and mudstone
Environment:	Alluvial
Age:	Upper Cretaceous and Paleogene
Geological Regions:	Plains

Geologic Information



Surficial Geology

This map shows surficial geologic labels in the area. Please refer to the report for detailed descriptions. Data coverage is shown to the right. Gray indicates no data available in the area.

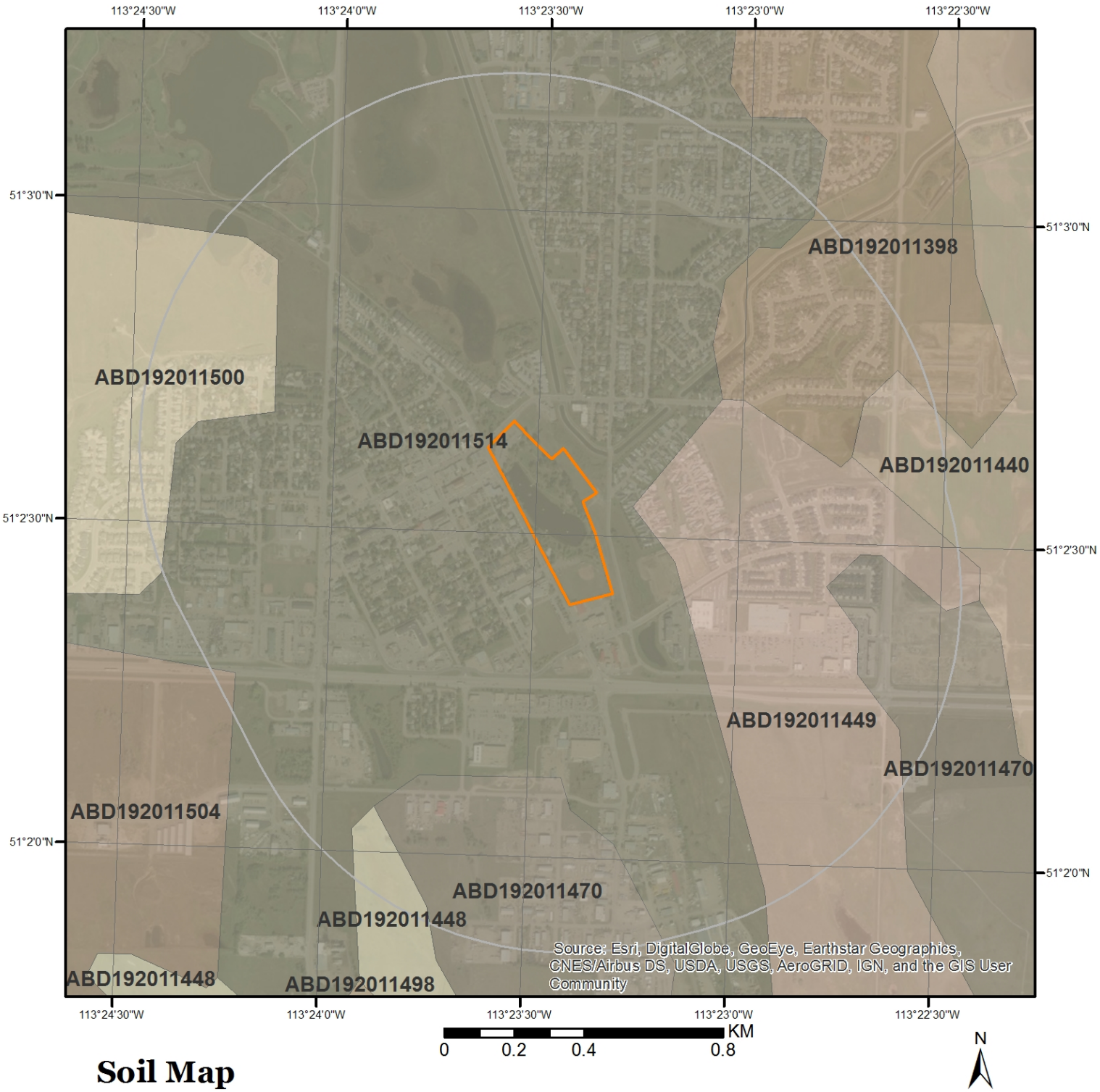
Geologic Information

Detailed surficial geology information about each unit within the search radius is provided below.

Unit ID MF

Unit Name:	Fluted moraine
Unit Description:	Glacially streamlined sediments, mainly till. Terrain varies from alternating furrows and ridges to nearly equidimensional smoothed hills; all landforms parallel the local ice flow direction; includes flutes, drumlins and drumlinoids.
Texture:	Sediment is mainly till may locally include stratified glaciolacustrine and/or glaciofluvial sediments.
Age:	Pleistocene

Soil Information



Soil Map

This map shows soil units around the target property. Please refer to the report for detailed soil descriptions.

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

Soil Information

Detailed soil information about each unit within the search radius is provided below.

Alberta Detailed Soil Survey (DSS3)

Polygon ID: ABD192011398

Component

Component ID:	ABD19201139801	**Slope Steepness(%):**	2
Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	225
Component No:	1		
Occupied by Component(%):	50		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50
pH in Calc Chloride:	6.9	**Total Clay(%):**	22

Soil Information

Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60
Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201139802	**Slope Steepness(%):**	3
Soil Name ID:	ABARE~~~~~A	**Slope Length(m):**	115
Component No:	2		
Occupied by Component(%):	50		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	ARDENODE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Very Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Soil Information

Layer No:	1	**Very Fine Sand(%):**	19
Horizon:	Ap	**Total Sand(%):**	87
Depth(cm):	0-15	**Total Silt(%):**	10
pH in Calc Chloride:	6.6	**Total Clay(%):**	3
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	1.6
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	20
Horizon:	Bm	**Total Sand(%):**	91
Depth(cm):	15-40	**Total Silt(%):**	6
pH in Calc Chloride:	7	**Total Clay(%):**	3
Saturated Hydraulic Conductivity(cm/h):	60	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	20
Horizon:	Bm	**Total Sand(%):**	95
Depth(cm):	40-60	**Total Silt(%):**	1
pH in Calc Chloride:	7	**Total Clay(%):**	4
Saturated Hydraulic Conductivity(cm/h):	60	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	20
Horizon:	Ck	**Total Sand(%):**	94
Depth(cm):	60-80	**Total Silt(%):**	1
pH in Calc Chloride:	7.7	**Total Clay(%):**	5
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	0.4
Electrical conductivity(dS/m):	0		

Layer No:	5	**Very Fine Sand(%):**	19
Horizon:	Ck	**Total Sand(%):**	89
Depth(cm):	80-120	**Total Silt(%):**	4
pH in Calc Chloride:	7.7	**Total Clay(%):**	7
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	0.2
Electrical conductivity(dS/m):	0		

Polygon ID: ABD192011440

Component

Component ID:	ABD19201144001	**Slope Steepness(%):**	2

Soil Information

Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	175
Component No:	1		
Occupied by Component(%):	40		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50
pH in Calc Chloride:	6.9	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Soil Information

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60
Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201144002	**Slope Steepness(%):**	3
Soil Name ID:	ABKEOco~~~N	**Slope Length(m):**	115
Component No:	2		
Occupied by Component(%):	30		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	KEOMA
Kind of Surface Material:	Mineral
Soil Drainage Class:	Imperfectly drained
Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Medium; Moderately Fine; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Till (Morainal); Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Undifferentiated; Not Applicable
Layer Restricting Root Growth:	Third layer
Type of Root-Restricting Layer:	Solonetzic

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ah	**Total Sand(%):**	30
Depth(cm):	0-9	**Total Silt(%):**	45
pH in Calc Chloride:	6.7	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	5.6
Electrical conductivity(dS/m):	0		
Layer No:	2	**Very Fine Sand(%):**	9

Soil Information

Horizon:	Ae	**Total Sand(%):**	40
Depth(cm):	9-15	**Total Silt(%):**	40
pH in Calc Chloride:	6.2	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	3.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	9
Horizon:	Bntgj	**Total Sand(%):**	40
Depth(cm):	15-30	**Total Silt(%):**	40
pH in Calc Chloride:	8	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	0	**Organic Carbon(%):**	1.8
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	11
Horizon:	Ccasag	**Total Sand(%):**	20
Depth(cm):	30-60	**Total Silt(%):**	50
pH in Calc Chloride:	9.4	**Total Clay(%):**	30
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	14		

Layer No:	5	**Very Fine Sand(%):**	11
Horizon:	Cksg	**Total Sand(%):**	20
Depth(cm):	60-100	**Total Silt(%):**	50
pH in Calc Chloride:	8.5	**Total Clay(%):**	30
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	9		

Component

Component ID:	ABD19201144003	**Slope Steepness(%):**	0.5
Soil Name ID:	ABGAY~~~~~N	**Slope Length(m):**	25
Component No:	3		
Occupied by Component(%):	30		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	GAYFORD
Kind of Surface Material:	Mineral
Soil Drainage Class:	Poorly drained

Soil Information

Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	17
Horizon:	Ahk	**Total Sand(%):**	76
Depth(cm):	0-19	**Total Silt(%):**	17
pH in Calc Chloride:	7.6	**Total Clay(%):**	7
Saturated Hydraulic Conductivity(cm/h):	60	**Organic Carbon(%):**	7.2
Electrical conductivity(dS/m):	2		

Layer No:	2	**Very Fine Sand(%):**	20
Horizon:	Bgk	**Total Sand(%):**	95
Depth(cm):	19-41	**Total Silt(%):**	1
pH in Calc Chloride:	7.9	**Total Clay(%):**	4
Saturated Hydraulic Conductivity(cm/h):	60	**Organic Carbon(%):**	0.8
Electrical conductivity(dS/m):	2		

Layer No:	3	**Very Fine Sand(%):**	19
Horizon:	Cgk	**Total Sand(%):**	88
Depth(cm):	41-56	**Total Silt(%):**	6
pH in Calc Chloride:	7.9	**Total Clay(%):**	6
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	0.4
Electrical conductivity(dS/m):	2		

Layer No:	4	**Very Fine Sand(%):**	19
Horizon:	Cgk	**Total Sand(%):**	91
Depth(cm):	56-100	**Total Silt(%):**	3
pH in Calc Chloride:	7.8	**Total Clay(%):**	6
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	0.2
Electrical conductivity(dS/m):	2		

Polygon ID: ABD192011448

Soil Information

Component

Component ID:	ABD19201144801	**Slope Steepness(%):**	2
Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	175
Component No:	1		
Occupied by Component(%):	40		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50
pH in Calc Chloride:	6.9	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30

Soil Information

pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60
Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201144802	**Slope Steepness(%):**	0.5
Soil Name ID:	ABKYN~~~~~A	**Slope Length(m):**	25
Component No:	2		
Occupied by Component(%):	40		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	KATHYRN
Kind of Surface Material:	Mineral
Soil Drainage Class:	Imperfectly drained
Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Moderately Fine; Moderately Fine; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Till (Morainal); Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Undifferentiated; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Apks	**Total Sand(%):**	27
Depth(cm):	0-21	**Total Silt(%):**	56
pH in Calc Chloride:	7.5	**Total Clay(%):**	17
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	5

Soil Information

Electrical conductivity(dS/m):	3		
Layer No:	2	**Very Fine Sand(%):**	9
Horizon:	Bgjks	**Total Sand(%):**	23
Depth(cm):	21-34	**Total Silt(%):**	47
pH in Calc Chloride:	7.6	**Total Clay(%):**	30
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	3		
Layer No:	3	**Very Fine Sand(%):**	10
Horizon:	Cgjksa	**Total Sand(%):**	31
Depth(cm):	34-62	**Total Silt(%):**	37
pH in Calc Chloride:	7.5	**Total Clay(%):**	32
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0.4
Electrical conductivity(dS/m):	4		
Layer No:	4	**Very Fine Sand(%):**	11
Horizon:	Cgjksa	**Total Sand(%):**	37
Depth(cm):	62-110	**Total Silt(%):**	34
pH in Calc Chloride:	7.6	**Total Clay(%):**	29
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	0.2
Electrical conductivity(dS/m):	4		

Component

Component ID:	ABD19201144803	**Slope Steepness(%):**	3
Soil Name ID:	ABZNAzbl~~N	**Slope Length(m):**	115
Component No:	3		
Occupied by Component(%):	20		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	MISC.SAL
Kind of Surface Material:	Mineral
Soil Drainage Class:	Imperfectly drained
Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Undifferentiated; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Undifferentiated mineral; Not Applicable; Not Applicable

Soil Information

Parent Material Chemical Property:	Undifferentiated; Not Applicable; Not Applicable
Layer Restricting Root Growth:	First layer
Type of Root-Restricting Layer:	Salinity

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	12
Horizon:	Ahs	**Total Sand(%):**	40
Depth(cm):	0-15	**Total Silt(%):**	40
pH in Calc Chloride:	7	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	6.5
Electrical conductivity(dS/m):	6		

Layer No:	2	**Very Fine Sand(%):**	12
Horizon:	Cksgj	**Total Sand(%):**	40
Depth(cm):	15-100	**Total Silt(%):**	40
pH in Calc Chloride:	7.8	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	8		

Polygon ID: ABD192011449

Component

Component ID:	ABD19201144901	**Slope Steepness(%):**	2
Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	175
Component No:	1		
Occupied by Component(%):	40		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable

Soil Information

Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50
pH in Calc Chloride:	6.9	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60
Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201144902	**Slope Steepness(%):**	0.5
Soil Name ID:	ABKYN~~~~~A	**Slope Length(m):**	25
Component No:	2		

Soil Information

Occupied by Component(%):	40
Surface Stoniness Class:	Slightly stony

Soil Name

Soil Name:	KATHYRN
Kind of Surface Material:	Mineral
Soil Drainage Class:	Imperfectly drained
Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Moderately Fine; Moderately Fine; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Till (Morainal); Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Undifferentiated; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Apks	**Total Sand(%):**	27
Depth(cm):	0-21	**Total Silt(%):**	56
pH in Calc Chloride:	7.5	**Total Clay(%):**	17
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	5
Electrical conductivity(dS/m):	3		

Layer No:	2	**Very Fine Sand(%):**	9
Horizon:	Bgjks	**Total Sand(%):**	23
Depth(cm):	21-34	**Total Silt(%):**	47
pH in Calc Chloride:	7.6	**Total Clay(%):**	30
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	3		

Layer No:	3	**Very Fine Sand(%):**	10
Horizon:	Cgjksa	**Total Sand(%):**	31
Depth(cm):	34-62	**Total Silt(%):**	37
pH in Calc Chloride:	7.5	**Total Clay(%):**	32
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0.4
Electrical conductivity(dS/m):	4		

Layer No:	4	**Very Fine Sand(%):**	11

Soil Information

Horizon:	Cgjksa	**Total Sand(%):**	37
Depth(cm):	62-110	**Total Silt(%):**	34
pH in Calc Chloride:	7.6	**Total Clay(%):**	29
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	0.2
Electrical conductivity(dS/m):	4		

Component

Component ID:	ABD19201144903	**Slope Steepness(%):**	3
Soil Name ID:	ABZNAzbl~~N	**Slope Length(m):**	115
Component No:	3		
Occupied by Component(%):	20		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	MISC.SAL
Kind of Surface Material:	Mineral
Soil Drainage Class:	Imperfectly drained
Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Undifferentiated; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Undifferentiated mineral; Not Applicable; Not Applicable
Parent Material Chemical Property:	Undifferentiated; Not Applicable; Not Applicable
Layer Restricting Root Growth:	First layer
Type of Root-Restricting Layer:	Salinity

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	12
Horizon:	Ahs	**Total Sand(%):**	40
Depth(cm):	0-15	**Total Silt(%):**	40
pH in Calc Chloride:	7	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	6.5
Electrical conductivity(dS/m):	6		

Layer No:	2	**Very Fine Sand(%):**	12
Horizon:	Cksgj	**Total Sand(%):**	40
Depth(cm):	15-100	**Total Silt(%):**	40

Soil Information

pH in Calc Chloride:	7.8	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	8		

Polygon ID: ABD192011470

Component

Component ID:	ABD19201147001	**Slope Steepness(%):**	3
Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	225
Component No:	1		
Occupied by Component(%):	100		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50

Soil Information

pH in Calc Chloride:	6.9	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60
Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Polygon ID: ABD192011500

Component

Component ID:	ABD19201150001	**Slope Steepness(%):**	2
Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	175
Component No:	1		
Occupied by Component(%):	35		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Information

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50
pH in Calc Chloride:	6.9	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60
Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201150002	**Slope Steepness(%):**	2
Soil Name ID:	ABRKV~~~~~A	**Slope Length(m):**	165
Component No:	2		
Occupied by Component(%):	35		
Surface Stoniness Class:	Slightly stony		

Soil Information

Soil Name

Soil Name:	ROCKYVIEW
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Medium; Moderately Fine; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciolacustrine; Till (Morainal); Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Undifferentiated; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	6
Horizon:	Ap	**Total Sand(%):**	15
Depth(cm):	0-18	**Total Silt(%):**	65
pH in Calc Chloride:	7.4	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	7
Horizon:	Bm	**Total Sand(%):**	15
Depth(cm):	18-40	**Total Silt(%):**	60
pH in Calc Chloride:	7.4	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.5
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	4
Horizon:	Ck	**Total Sand(%):**	10
Depth(cm):	40-60	**Total Silt(%):**	70
pH in Calc Chloride:	7.9	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	5
Horizon:	Ck	**Total Sand(%):**	11
Depth(cm):	60-100	**Total Silt(%):**	54
pH in Calc Chloride:	7.8	**Total Clay(%):**	35
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0

Soil Information

Electrical conductivity(dS/m):	0

Component

Component ID:	ABD19201150003	**Slope Steepness(%):**	3
Soil Name ID:	ABDEL~~~~~A	**Slope Length(m):**	115
Component No:	3		
Occupied by Component(%):	15		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	DELACOUR
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Fine; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Till (Morainal); Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	10
Horizon:	Ap	**Total Sand(%):**	24
Depth(cm):	0-20	**Total Silt(%):**	52
pH in Calc Chloride:	5.7	**Total Clay(%):**	24
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	31
Depth(cm):	20-35	**Total Silt(%):**	36
pH in Calc Chloride:	5.6	**Total Clay(%):**	33
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Soil Information

Layer No:	3	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	32
Depth(cm):	35-50	**Total Silt(%):**	37
pH in Calc Chloride:	6.1	**Total Clay(%):**	31
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.1
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	10
Horizon:	Ck	**Total Sand(%):**	33
Depth(cm):	50-75	**Total Silt(%):**	39
pH in Calc Chloride:	7.5	**Total Clay(%):**	28
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	5	**Very Fine Sand(%):**	10
Horizon:	Ck	**Total Sand(%):**	35
Depth(cm):	75-100	**Total Silt(%):**	35
pH in Calc Chloride:	7.7	**Total Clay(%):**	30
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201150004	**Slope Steepness(%):**	0.5
Soil Name ID:	ABLTA~~~~~A	**Slope Length(m):**	115
Component No:	4		
Occupied by Component(%):	15		
Surface Stoniness Class:	Nonstony		

Soil Name

Soil Name:	LYALTA
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Fine; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciolacustrine; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer

Soil Information

Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	10
Horizon:	Ap	**Total Sand(%):**	31
Depth(cm):	0-16	**Total Silt(%):**	47
pH in Calc Chloride:	6.2	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	15
Horizon:	Bm	**Total Sand(%):**	22
Depth(cm):	16-42	**Total Silt(%):**	50
pH in Calc Chloride:	6.4	**Total Clay(%):**	28
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.4
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	15
Horizon:	Bm	**Total Sand(%):**	30
Depth(cm):	42-70	**Total Silt(%):**	35
pH in Calc Chloride:	6.8	**Total Clay(%):**	35
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	45
Depth(cm):	70-100	**Total Silt(%):**	22
pH in Calc Chloride:	7.9	**Total Clay(%):**	33
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Polygon ID:	ABD192011504

Component

Component ID:	ABD19201150401	**Slope Steepness(%):**	2
Soil Name ID:	ABMDP~~~~~A	**Slope Length(m):**	175
Component No:	1		
Occupied by Component(%):	40		

Soil Information

Surface Stoniness Class:	Nonstony

Soil Name

Soil Name:	MIDNAPORE
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Moderately Coarse; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciofluvial; Not Applicable; Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	11
Horizon:	Ap	**Total Sand(%):**	33
Depth(cm):	0-34	**Total Silt(%):**	42
pH in Calc Chloride:	6.9	**Total Clay(%):**	25
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	10
Horizon:	Bm	**Total Sand(%):**	28
Depth(cm):	34-62	**Total Silt(%):**	50
pH in Calc Chloride:	6.9	**Total Clay(%):**	22
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.3
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	14
Horizon:	Cca	**Total Sand(%):**	55
Depth(cm):	62-85	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	15
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	15
Horizon:	Ck	**Total Sand(%):**	60

Soil Information

Depth(cm):	85-110	**Total Silt(%):**	30
pH in Calc Chloride:	7.5	**Total Clay(%):**	10
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201150402	**Slope Steepness(%):**	3
Soil Name ID:	ABRKV~~~~~A	**Slope Length(m):**	165
Component No:	2		
Occupied by Component(%):	40		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	ROCKYVIEW
Kind of Surface Material:	Mineral
Soil Drainage Class:	Well drained
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Medium; Moderately Fine; Not Applicable
Mode of Deposition 1, 2, 3:	Glaciolacustrine; Till (Morainal); Not Applicable
Parent Material Chemical Property:	Moderately / Very Strongly Calcareous; Undifferentiated; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Layer No:	1	**Very Fine Sand(%):**	6
Horizon:	Ap	**Total Sand(%):**	15
Depth(cm):	0-18	**Total Silt(%):**	65
pH in Calc Chloride:	7.4	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	4
Electrical conductivity(dS/m):	0		

Layer No:	2	**Very Fine Sand(%):**	7
Horizon:	Bm	**Total Sand(%):**	15
Depth(cm):	18-40	**Total Silt(%):**	60
pH in Calc Chloride:	7.4	**Total Clay(%):**	25

Soil Information

Saturated Hydraulic Conductivity(cm/h):	10	**Organic Carbon(%):**	1.5
Electrical conductivity(dS/m):	0		

Layer No:	3	**Very Fine Sand(%):**	4
Horizon:	Ck	**Total Sand(%):**	10
Depth(cm):	40-60	**Total Silt(%):**	70
pH in Calc Chloride:	7.9	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Layer No:	4	**Very Fine Sand(%):**	5
Horizon:	Ck	**Total Sand(%):**	11
Depth(cm):	60-100	**Total Silt(%):**	54
pH in Calc Chloride:	7.8	**Total Clay(%):**	35
Saturated Hydraulic Conductivity(cm/h):	1	**Organic Carbon(%):**	0
Electrical conductivity(dS/m):	0		

Component

Component ID:	ABD19201150403	**Slope Steepness(%):**	2
Soil Name ID:	ABZNAzbl~~N	**Slope Length(m):**	50
Component No:	3		
Occupied by Component(%):	20		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	MISC.SAL
Kind of Surface Material:	Mineral
Soil Drainage Class:	Imperfectly drained
Water Table Charateristics:	Unspecified period
Parent Material 1, 2, 3:	Undifferentiated; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Undifferentiated mineral; Not Applicable; Not Applicable
Parent Material Chemical Property:	Undifferentiated; Not Applicable; Not Applicable
Layer Restricting Root Growth:	First layer
Type of Root-Restricting Layer:	Salinity

Soil Layer

Soil Information

Layer No:	1	**Very Fine Sand(%):**	12
Horizon:	Ahs	**Total Sand(%):**	40
Depth(cm):	0-15	**Total Silt(%):**	40
pH in Calc Chloride:	7	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	30	**Organic Carbon(%):**	6.5
Electrical conductivity(dS/m):	6		

Layer No:	2	**Very Fine Sand(%):**	12
Horizon:	Cksgj	**Total Sand(%):**	40
Depth(cm):	15-100	**Total Silt(%):**	40
pH in Calc Chloride:	7.8	**Total Clay(%):**	20
Saturated Hydraulic Conductivity(cm/h):	3	**Organic Carbon(%):**	1
Electrical conductivity(dS/m):	8		

Polygon ID: ABD192011514

Component

Component ID:	ABD19201151401	**Slope Steepness(%):**	0
Soil Name ID:	ABZDL~~~~~N	**Slope Length(m):**	0
Component No:	1		
Occupied by Component(%):	100		
Surface Stoniness Class:	Slightly stony		

Soil Name

Soil Name:	MISC.DISTURBED.LAND
Kind of Surface Material:	Unclassified
Soil Drainage Class:	
Water Table Charateristics:	Never
Parent Material 1, 2, 3:	Undifferentiated; Not Applicable; Not Applicable
Mode of Deposition 1, 2, 3:	Undifferentiated mineral; Not Applicable; Not Applicable
Parent Material Chemical Property:	Undifferentiated; Not Applicable; Not Applicable
Layer Restricting Root Growth:	No root restricting layer
Type of Root-Restricting Layer:	n/a

Soil Layer

Soil Information

Layer No:	1	**Very Fine Sand(%):**	-9
Horizon:	C	**Total Sand(%):**	-9
Depth(cm):	0-100	**Total Silt(%):**	-9
pH in Calc Chloride:	Not applicable	**Total Clay(%):**	-9
Saturated Hydraulic Conductivity(cm/h):	Not applicable	**Organic Carbon(%):**	Not applicable
Electrical conductivity(dS/m):	Not applicable		

Wells and Additional Sources



Wells & Additional Sources

- Sites with Higher Elevation
- Sites with Same Elevation
- Sites with Lower Elevation
- Sites with Unknown Elevation

0 0.075 0.15 0.3 KM

N

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Wells and Additional Sources Summary

Federal Sources

National Energy Board Wells

Map Key	ID	Distance (m)	Direction
	No records found		

Provincial Sources

Alberta Oil and Gas Wells

Map Key	Licence NO	Distance (m)	Direction
1	0267711	0.	-

Alberta Orphan Wells

Map Key	ID	Distance (m)	Direction
	No records found		

Alberta Water Well Information Database

Map Key	Well ID	Distance (m)	Direction
3	122607	173.98	WSW
3	122609	173.98	WSW
3	122603	173.98	WSW
3	122708	173.98	WSW
3	122712	173.98	WSW
3	122702	173.98	WSW
3	296531	173.98	WSW
3	122710	173.98	WSW
3	122698	173.98	WSW
3	122606	173.98	WSW
3	122605	173.98	WSW
3	122709	173.98	WSW
3	122611	173.98	WSW
3	122610	173.98	WSW
3	122701	173.98	WSW
3	296530	173.98	WSW
3	122711	173.98	WSW
3	122707	173.98	WSW
3	122604	173.98	WSW
3	122705	173.98	WSW
3	122699	173.98	WSW
3	122704	173.98	WSW
3	122713	173.98	WSW
3	122706	173.98	WSW
3	122700	173.98	WSW
3	122703	173.98	WSW
3	292892	173.98	WSW
3	122608	173.98	WSW
4	122621	190.9	NNE
4	239592	190.9	NNE
4	239588	190.9	NNE

4	239593	190.9	NNE
4	239590	190.9	NNE
4	239589	190.9	NNE
4	122620	190.9	NNE
5	11659589	172.27	N

Groundwater Well Network

Map Key	ID	Distance (m)	Direction
	No records found		

Horizontal Wells

Map Key	ID	Distance (m)	Direction
	No records found		

Well Licenses

Map Key	Well ID	Distance (m)	Direction
2	00/06-14-024-25W4/0	0.	-

Private Sources

Oil and Gas Wells

Map Key	Licence ID	Distance (m)	Direction
1	267711	0.	-

Wells and Additional Sources Detail Report

Alberta Oil and Gas Wells

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
1	-	0.00	0.00	971.94	AOGW

Licence NO:	0267711	ATS Coordinates:	6-14-24-25-4
Licence Date:	20020214	Structure:	
Mode:	FLOWING	Type:	
Well Status Date:	20030828	Fluid:	GAS
Total Depth (m):	1742.00	Licencee:	Encana Corporation
Final Drill Date:	20020301		
Well Name:	PCE PCR STRATHMORE 6-14-24-25		
Licencee Address:	Box 2850, 150 - 9 Avenue SW Calgary, AB T2P 2S5		

Alberta Water Well Information Database

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122607	Elevation Source:	Not Obtained
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122607	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3176	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:	35,36	Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	122607	Annular Seal Mat:	Driven
Well Owner ID:	10524623	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	167

Wells and Additional Sources Detail Report

Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	8/20/1984 0:00:00
Date Received:	9/19/1984 0:00:00	Drilling End Dt:	8/22/1984 0:00:00
Type of Work:	New Well	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	195	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	13
Casing Bottom:	0	Recom Intake Depth:	120
Liner Material:	Steel	Pump Installed?:	No
Liner OD:	5.56	Pump Install Depth:	
Liner Thickness:	0.188	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	187	Well Disinfected?:	No
Perforation by:	Torch	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	DRILLER REPORTS SOFT WATER		

Well Owner ID:	10524623
Owner Name:	CHYSLER, ERIK

Wells and Additional Sources Detail Report

PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Geophysical Log ID:	5445875
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5848950
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547496
Diameter:	0
From:	0
To:	195

Depth: 10
Water Bearing: No
Colour:
Description:
Material: Sand

Depth: 195
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 167
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 55
Water Bearing: No
Colour:
Description:
Material: Clay & Rocks

Depth: 191
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 90
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Shale & Coal

Depth: 148
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth:	75
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale

Depth:	120
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Pump Test ID:	10249664
Test Date:	8/22/1984 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	87
End Water Level:	120
Water Removal Type:	Bailer
Water Removal Rate:	13
Removal Depth from:	120
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122609	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122609	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14

Wells and Additional Sources Detail Report

Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014114
Well Report ID:	122609
Sample No:	627305
Sample Date:	8/6/1962 0:00:00
Analysis Date:	8/10/1962 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 76 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014114
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	516.75273

Chemical Analysis ID:	2014114
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	465

Chemical Analysis ID:	2014114
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014114
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	5.0055

Chemical Analysis ID: 2014114
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014114
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014114
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 115

Chemical Analysis ID: 2014114
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.9996

Chemical Analysis ID: 2014114
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: -0.9996

Chemical Analysis ID: 2014114
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.51

Chemical Analysis ID: 2014114
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 1

Chemical Analysis ID:	2014114
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	1434

Well Report ID:	122609	Annular Seal Mat:	
Well Owner ID:	10524625	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	8/9/1962 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	105	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			

Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owner ID:	10524625
Owner Name:	OUCTION MART
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5848952
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Wells and Additional Sources Detail Report

Geophysical Log ID:	5445877
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547498
Diameter:	0
From:	0
To:	105

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122603	Elevation Source:	Estimated
Driller ID:	16349	Method of Drilling:	
Licence No:		GPS Obtained:	Field
GIC Well ID:	122603	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3176	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	122603	Annular Seal Mat:	Driven
Well Owner ID:	10524619	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	16349	Annular Seal Amt:	
Drill Instance ID:	8337776	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	
Date Received:		Drilling End Dt:	6/4/1965 0:00:00

Wells and Additional Sources Detail Report

Type of Work:	Well Inventory	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Field
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	227	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	62	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	OWNER REPORTS SOFT WATER		

Well Owner ID:	10524619
Owner Name:	ARCH & BEAM LTD
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	

Wells and Additional Sources Detail Report

Country:

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	
Ending Well ID:	
Last Well ID Used:	
Company Name:	MURRAY R D DRLG
Street Address:	
City:	
Province:	
Country:	
Postal Code:	
E-Mail:	
Is Active?:	No

Geophysical Log ID:	5445871
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5848946
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547492
Diameter:	0
From:	0
To:	227

Depth:	225
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	10
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone

Depth:	35
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Clay

Depth:	85
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	86
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone

Depth:	214
Water Bearing:	No
Colour:	
Description:	
Material:	Sandstone

Depth:	227
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone

Depth:	212
Water Bearing:	No
Colour:	

Description:
Material: Shale

Pump Test ID: 10249661
Test Date: 6/4/1965 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 50
End Water Level: 158
Water Removal Type: Pump
Water Removal Rate: 6
Removal Depth from: 160
Reason for Short Test:

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID: 122708
Driller ID: 11110
Licence No:
GIC Well ID: 122708
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Chem Analysis ID: 2014415
Well Report ID: 122708
Sample No: 613609
Sample Date: 5/2/1961 0:00:00

Wells and Additional Sources Detail Report

Analysis Date:	5/8/1961 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 14 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODIUM

Chemical Analysis ID:	2014415
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	0.49

Chemical Analysis ID:	2014415
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014415
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014415
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	65

Chemical Analysis ID:	2014415
Element Name:	Nitrite
Element Symbol:	NO2
Decimal Places:	4
Value:	-0.9996

Chemical Analysis ID:	2014415
Element Name:	Nitrate
Element Symbol:	NO3
Decimal Places:	4
Value:	-0.9996

Chemical Analysis ID:	2014415
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	188.27302

Chemical Analysis ID:	2014415
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014415
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	2

Chemical Analysis ID:	2014415
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	700

Chemical Analysis ID:	2014415
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	3.0033

Chemical Analysis ID:	2014415
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	360

Well Report ID:	122708	Annular Seal Mat:	
Well Owner ID:	10524723	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0

Wells and Additional Sources Detail Report

Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	5/2/1961 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	135	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524723
Owner Name:	STRATHMORE, TOWN OF #WELL 2

PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849284
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446209
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547830
Diameter:	0
From:	0
To:	135

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB

3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122712	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122712	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014412
Well Report ID:	122712
Sample No:	584
Sample Date:	1/22/1975 0:00:00
Analysis Date:	2/28/1975 0:00:00
Laboratory:	AE
Water Level:	60
Aquifer:	
Remarks:	

Chemical Analysis ID:	2014412
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	0.1

Chemical Analysis ID:	2014412
Element Name:	Calcium
Element Symbol:	CA

Decimal Places: 4
Value: 20.999916

Chemical Analysis ID: 2014412
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 391

Chemical Analysis ID: 2014412
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 657.066942

Chemical Analysis ID: 2014412
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1700

Chemical Analysis ID: 2014412
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 1

Chemical Analysis ID: 2014412
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 2.001536

Chemical Analysis ID: 2014412
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 1.024

Chemical Analysis ID: 2014412

Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014412
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.74

Chemical Analysis ID: 2014412
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0994

Chemical Analysis ID: 2014412
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014412
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014412
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 1102

Chemical Analysis ID: 2014412
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.3

Chemical Analysis ID:	2014412
Element Name:	Nitrate
Element Symbol:	NO3
Decimal Places:	4
Value:	-0.0994

Chemical Analysis ID:	2014412
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	349.50903

Chemical Analysis ID:	2014412
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	64

Chemical Analysis ID:	2014412
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	9.01345

Chemical Analysis ID:	2014412
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	539

Well Report ID:	122712	Annular Seal Mat:	
Well Owner ID:	10524727	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	1/23/1975 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	

Wells and Additional Sources Detail Report

Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	105	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524727
Owner Name:	STRATHMORE SEED CLEANING PLANT
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Wells and Additional Sources Detail Report

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849288
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446213
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547834
Diameter:	0
From:	0
To:	105

Pump Test ID:	10249729
Test Date:	1/22/1975 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	43
End Water Level:	
Water Removal Type:	
Water Removal Rate:	

Removal Depth from: 0
Reason for Short Test:

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122702	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122702	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014419
Well Report ID:	122702
Sample No:	621911
Sample Date:	2/21/1962 0:00:00
Analysis Date:	3/3/1962 0:00:00
Laboratory:	UA
Water Level:	70
Aquifer:	
Remarks:	IGNITION LOSS 16 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014419
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID: 2014419
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.2

Chemical Analysis ID: 2014419
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 285.41578

Chemical Analysis ID: 2014419
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 375

Chemical Analysis ID: 2014419
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014419
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.25

Chemical Analysis ID: 2014419
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 852

Chemical Analysis ID: 2014419
Element Name: Total Hardness
Element Symbol: TH

Decimal Places:	4
Value:	160

Chemical Analysis ID:	2014419
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014419
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	8.01235

Well Report ID:	122702	Annular Seal Mat:	
Well Owner ID:	10524717	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	3/1/1962 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	120	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	6	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	

Wells and Additional Sources Detail Report

Screen Attachment:	
Screen Top Fitting:	
Screen Bot Fitting:	
Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Diversion Dt/Time:	
Is Submitted?:	Yes
Is Validated?:	Yes

Well Owner ID:	10524717
Owner Name:	THOMAS, DAVID
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca

Is Active?:	No
Geophysical Log ID:	5446203
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No
Geophysical Log ID:	5849278
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No
Borehole ID:	547824
Diameter:	0
From:	0
To:	120
Pump Test ID:	10249723
Test Date:	2/21/1962 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	50
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	296531	Elevation Source:	Not Obtained
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	296531	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes

Wells and Additional Sources Detail Report

Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	296531	Annular Seal Mat:	
Well Owner ID:	10616787	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Not Applicable
Existing Well ID:		Drilling Start Dt:	6/28/2001 0:00:00
Date Received:	8/2/2001 0:00:00	Drilling End Dt:	6/28/2001 0:00:00
Type of Work:	Existing Well-Decommissioned	Pack Type:	
Plug Date:	6/28/2001 0:00:00	Pack Grain Size:	
Plug Material Type:	Bentonite Product	Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	60	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Steel	Encounter Gas?:	No
Casing OD:	6	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			

Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	DRILLER REPORTS HARWOOD LOT. INSTALLED BENTONITE CHIPS FROM BOTTOM TO TOP (17 BAGS).

Well Owner ID:	10616787
Owner Name:	TRENDSETTER HOMES
PO Box:	2354
Address:	STRATHMORE
City:	
Postal Code:	T1P 1K3
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Geophysical Log ID:	5655207
Log Type:	Electric

Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	6058282
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	757280
Diameter:	0
From:	0
To:	60

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122710	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122710	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:	7-9	Validated?:	Yes
Block:	7	Submitted?:	Yes
Plan:	5894P	Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014410
Well Report ID:	122710
Sample No:	69863
Sample Date:	1/21/1969 0:00:00

Wells and Additional Sources Detail Report

Analysis Date:	1/30/1969 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 48 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014410
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	1.06

Chemical Analysis ID:	2014410
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014410
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014410
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	199.28792

Chemical Analysis ID:	2014410
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	754

Chemical Analysis ID:	2014410
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	376

Chemical Analysis ID: 2014410
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.13

Chemical Analysis ID: 2014410
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014410
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 11

Chemical Analysis ID: 2014410
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 12.01675

Chem Analysis ID: 2014409
Well Report ID: 122710
Sample No: 681119
Sample Date: 1/22/1968 0:00:00
Analysis Date: 1/30/1968 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 60 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID: 2014409
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.1

Chemical Analysis ID: 2014409
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014409
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 776

Chemical Analysis ID: 2014409
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 14.01895

Chemical Analysis ID: 2014409
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.15

Chemical Analysis ID: 2014409
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 36

Chemical Analysis ID: 2014409
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 172.25091

Chemical Analysis ID: 2014409
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4

Value:	384

Chemical Analysis ID:	2014409
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014409
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Well Report ID:	122710	Annular Seal Mat:	
Well Owner ID:	10524725	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	1/25/1968 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	200	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	6	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	

Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524725
Owner Name:	MUZA, JAMES W.
PO Box:	712
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849286
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446211
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547832
Diameter:	0
From:	0
To:	200

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122698	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122698	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Wells and Additional Sources Detail Report

Chem Analysis ID:	2014418
Well Report ID:	122698
Sample No:	6814516
Sample Date:	11/22/1968 0:00:00
Analysis Date:	12/3/1968 0:00:00
Laboratory:	UA
Water Level:	80
Aquifer:	
Remarks:	IGNITION LOSS 86 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014418
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	0.18

Chemical Analysis ID:	2014418
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	315

Chemical Analysis ID:	2014418
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	157.22928

Chemical Analysis ID:	2014418
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	736

Chemical Analysis ID:	2014418
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	10

Chemical Analysis ID:	2014418

Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014418
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 54.07715

Chemical Analysis ID: 2014418
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014418
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 3.4

Chemical Analysis ID: 2014418
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chem Analysis ID: 2014416
Well Report ID: 122698
Sample No: 6510983
Sample Date: 9/21/1965 0:00:00
Analysis Date: 10/1/1965 0:00:00
Laboratory: UA
Water Level: 80
Aquifer:
Remarks: IGNITION LOSS 50 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME,

Chemical Analysis ID: 2014416
Element Name: Hydroxide

Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014416
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 161.23601

Chemical Analysis ID: 2014416
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 732

Chemical Analysis ID: 2014416
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 150

Chemical Analysis ID: 2014416
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014416
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 125.17655

Chemical Analysis ID: 2014416
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014416
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 250

Chem Analysis ID: 2014414
Well Report ID: 122698
Sample No: 612643
Sample Date: 3/30/1961 0:00:00
Analysis Date: 4/5/1961 0:00:00
Laboratory: UA
Water Level: 80
Aquifer:
Remarks: IGNITION LOSS 44 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME,

Chemical Analysis ID: 2014414
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.4

Chemical Analysis ID: 2014414
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 25

Chemical Analysis ID: 2014414
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014414
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014414

Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.9996

Chemical Analysis ID: 2014414
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 2.78

Chemical Analysis ID: 2014414
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 754

Chemical Analysis ID: 2014414
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 207.30138

Chemical Analysis ID: 2014414
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014414
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 0.2996

Chemical Analysis ID: 2014414
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 300

Wells and Additional Sources Detail Report

Chemical Analysis ID:	2014414
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	6.01015

Well Report ID:	122698	Annular Seal Mat:	
Well Owner ID:	10524713	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	3/30/1961 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	350	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	6	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		

Wells and Additional Sources Detail Report

Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owner ID:	10524713
Owner Name:	STRATHMORE, TOWN OF #WELL 1
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5848955
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5445880

Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547501
Diameter:	0
From:	0
To:	350

Pump Test ID:	10249721
Test Date:	3/25/1961 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	80
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122606	Elevation Source:	Estimated
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Field
GIC Well ID:	122606	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3176	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			

Wells and Additional Sources Detail Report

Driller Mailing Address:

Well Report ID:	122606	Annular Seal Mat:	Driven
Well Owner ID:	10524622	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	59
Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	9/16/1975 0:00:00
Date Received:	9/30/1975 0:00:00	Drilling End Dt:	9/19/1975 0:00:00
Type of Work:	New Well	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Field
Well Use:	Domestic & Stock	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	225	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Steel	Encounter Gas?:	No
Casing OD:	5.5	Flow Ctrl Install?:	No
Casing Thickness:	0.188	Recommended Rate:	0
Casing Bottom:	60	Recom Intake Depth:	203
Liner Material:	Steel	Pump Installed?:	No
Liner OD:	4.5	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	203	Well Disinfected?:	No
Perforation by:	Torch	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			

Wells and Additional Sources Detail Report

Submitted by:
Additional Comments: DRILLER REPORTS SOFT WATER

Well Owner ID: 10524622
Owner Name: KANG, MALKIAT S.
PO Box: 54
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Starting Well ID: 1475000
Ending Well ID: 1479999
Last Well ID Used: 1477040
Company Name: M&M DRILLING CO. LTD.
Street Address: BOX 1, SITE 22, RR 2
City: STRATHMORE
Province: AB
Country: CA
Postal Code: T1P 1K5
E-Mail: murraywh@mmdrilling.ca
Is Active?: Yes

Perforation ID: 4165835
From: 185
To: 203
Diameter: 0
Interval: 0

Geophysical Log ID: 5848949
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Wells and Additional Sources Detail Report

Geophysical Log ID:	5445874
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547495
Diameter:	0
From:	0
To:	225

Depth:	66
Water Bearing:	No
Colour:	
Description:	
Material:	Sandstone

Depth:	45
Water Bearing:	No
Colour:	Brown
Description:	
Material:	Clay

Depth:	127
Water Bearing:	No
Colour:	
Description:	
Material:	Sandstone

Depth:	225
Water Bearing:	No
Colour:	
Description:	
Material:	Shale & Sandstone Ledges

Depth:	119
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth: 192
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 47
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 48
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 78
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 82
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 111
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 137
Water Bearing: Yes
Colour:
Description: Water Bearing

Material: Sandstone

Depth: 103
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 134
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 170
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 195
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 60
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 180
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 210
Water Bearing: No

Colour:
Description:
Material: Shale

Pump Test ID: 10249663
Test Date: 9/19/1975 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 40
End Water Level: 203
Water Removal Type: Pump
Water Removal Rate: 4
Removal Depth from: 203
Reason for Short Test:

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID: 122605
Driller ID: 24227
Licence No:
GIC Well ID: 122605
GOA Well Tag No:
Elevation (ft): 3176
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Estimated
Method of Drilling:
GPS Obtained: Field
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Well Report ID: 122605
Well Owner ID: 10524621
Driller ID: 2533726

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0

Wells and Additional Sources Detail Report

Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	9/10/1975 0:00:00
Date Received:	9/30/1975 0:00:00	Drilling End Dt:	9/16/1975 0:00:00
Type of Work:	New Well-Decommissioned	Pack Type:	
Plug Date:	9/16/1976 0:00:00	Pack Grain Size:	
Plug Material Type:	Unknown	Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Field
Well Use:	Domestic & Stock	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	476	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	ABANDONED DUE TO INSUFFICIENT GOOD WATER		

Well Owner ID:	10524621
Owner Name:	KANG, MALKIAT S.

Wells and Additional Sources Detail Report

PO Box:	54
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Geophysical Log ID:	5848948
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5445873
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547494
Diameter:	0
From:	0
To:	476

Depth: 72
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 142
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 188
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 282
Water Bearing: No
Colour:
Description: Hard
Material: Sandstone

Depth: 476
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Depth: 181
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Depth: 125
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 370
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Depth: 389
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 90
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 45
Water Bearing: No
Colour: Blue
Description:
Material: Clay & Rocks

Depth: 62
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Depth: 75
Water Bearing: No
Colour:
Description: Hard
Material: Sandstone

Depth: 88
Water Bearing: No
Colour:

Description:
Material: Shale

Depth: 297
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 130
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 48
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 50
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 55
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 114
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 32

Water Bearing:	No
Colour:	Brown
Description:	
Material:	Clay & Rocks

Depth:	276
Water Bearing:	No
Colour:	
Description:	
Material:	Shale & Sandstone Ledges

Depth:	145
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	148
Water Bearing:	No
Colour:	
Description:	
Material:	Sandstone

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122709	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122709	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24

Wells and Additional Sources Detail Report

Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014480
Well Report ID:	122709
Sample No:	653078
Sample Date:	3/23/1965 0:00:00
Analysis Date:	3/30/1965 0:00:00
Laboratory:	UA
Water Level:	63
Aquifer:	
Remarks:	IGNITION LOSS 68 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014480
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	0.42

Chemical Analysis ID:	2014480
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	18.0269

Chemical Analysis ID:	2014480
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014480
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	650

Chemical Analysis ID:	2014480

Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 141.20717

Chemical Analysis ID: 2014480
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014480
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.6

Chemical Analysis ID: 2014480
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014480
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 125

Chemical Analysis ID: 2014480
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 345

Well Report ID:	122709	Annular Seal Mat:	
Well Owner ID:	10524724	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled

Wells and Additional Sources Detail Report

Existing Well ID:		Drilling Start Dt:	
Date Received:	3/26/1965 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	150	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	6	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524724
Owner Name:	WALKER, K.H.
PO Box:	125
Address:	STRATHMORE
City:	

Wells and Additional Sources Detail Report

Postal Code:
Province:
Country:

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849285
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446210
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547831
Diameter:	0
From:	0
To:	150

Pump Test ID:	10249728
Test Date:	3/23/1965 0:00:00
Start Time:	1/12/1900 0:00:00

Wells and Additional Sources Detail Report

Taken from Top of Casing:	No
Static Water Level:	87
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122611	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Map
GIC Well ID:	122611	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:	38,39	Validated?:	Yes
Block:	17	Submitted?:	Yes
Plan:	5894P	Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2115760
Well Report ID:	122611
Sample No:	8810057
Sample Date:	10/24/1988 0:00:00
Analysis Date:	11/4/1988 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	WELL
Remarks:	CATIONS - 10.77; ANIONS - 10.78

Chemical Analysis ID: 2115760
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.61

Chemical Analysis ID: 2115760
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.6

Chemical Analysis ID: 2115760
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 0.5

Chemical Analysis ID: 2115760
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 1

Chemical Analysis ID: 2115760
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 10

Chemical Analysis ID: 2115760
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: 0.04

Chemical Analysis ID: 2115760
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 3

Chemical Analysis ID: 2115760
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 6

Chemical Analysis ID: 2115760
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: -0.01

Chemical Analysis ID: 2115760
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 243

Chemical Analysis ID: 2115760
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.4

Chemical Analysis ID: 2115760
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 9.7

Chemical Analysis ID: 2115760
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: 0.04

Chemical Analysis ID: 2115760
Element Name: Total Dissolved Solids
Element Symbol: TDS

Decimal Places:	0
Value:	620

Chemical Analysis ID:	2115760
Element Name:	Electrical Conductivity
Element Symbol:	EC
Decimal Places:	0
Value:	1024

Chemical Analysis ID:	2115760
Element Name:	Bicarbonate
Element Symbol:	HCO3
Decimal Places:	4
Value:	431

Chemical Analysis ID:	2115760
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	364

Chemical Analysis ID:	2115760
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	36.9

Chemical Analysis ID:	2115760
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	117

Well Report ID:	122611	Annular Seal Mat:	
Well Owner ID:	10524627	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	11/1/1988 0:00:00	Drilling End Dt:	

Wells and Additional Sources Detail Report

Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Map
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	120	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	SEE VG CHEM SAMPLE #8810057		

Well Owner ID:	10524627
Owner Name:	GUTHRIE, JOY
PO Box:	
Address:	GEN DEL, STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	

Country:

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5848954
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5445879
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547500
Diameter:	0
From:	0
To:	120

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122610	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	

Wells and Additional Sources Detail Report

Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122610	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014173
Well Report ID:	122610
Sample No:	603595
Sample Date:	5/13/1960 0:00:00
Analysis Date:	5/19/1960 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 188 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME

Chemical Analysis ID:	2014173
Element Name:	Nitrite
Element Symbol:	NO2
Decimal Places:	4
Value:	-0.9996

Chemical Analysis ID:	2014173
Element Name:	Nitrate
Element Symbol:	NO3
Decimal Places:	4
Value:	2.4976

Chemical Analysis ID: 2014173
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 380

Chemical Analysis ID: 2014173
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014173
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 1.3

Chemical Analysis ID: 2014173
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 340

Chemical Analysis ID: 2014173
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 17.02225

Chemical Analysis ID: 2014173
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014173
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 134.19419

Chemical Analysis ID: 2014173
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014173
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 686

Chem Analysis ID: 2014174
Well Report ID: 122610
Sample No: 606254
Sample Date: 8/10/1960 0:00:00
Analysis Date: 8/18/1960 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 110 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID: 2014174
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014174
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 646

Chemical Analysis ID: 2014174
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID:	2014174
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	117.1716

Chemical Analysis ID:	2014174
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	395

Chemical Analysis ID:	2014174
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	4.0044

Chemical Analysis ID:	2014174
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014174
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	1.2

Chemical Analysis ID:	2014174
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	195

Chemical Analysis ID:	2014174
Element Name:	Nitrate
Element Symbol:	NO3
Decimal Places:	4

Wells and Additional Sources Detail Report

Value: 1.1998

Well Report ID:	122610	Annular Seal Mat:	
Well Owner ID:	10524626	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	5/19/1960 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	90	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			

Wells and Additional Sources Detail Report

Submitted by:
Additional Comments:

Well Owner ID:	10524626
Owner Name:	CONLET'S DRIVE-IN
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5445878
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5848953
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Wells and Additional Sources Detail Report

Borehole ID:	547499
Diameter:	0
From:	0
To:	90

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122701	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122701	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2115762
Well Report ID:	122701
Sample No:	687119
Sample Date:	
Analysis Date:	6/13/1968 0:00:00
Laboratory:	RC
Water Level:	
Aquifer:	
Remarks:	IGN. LOSS - 80;

Chemical Analysis ID:	2115762
Element Name:	Total Dissolved Solids
Element Symbol:	TDS

Decimal Places: 0
Value: 738

Chemical Analysis ID: 2115762
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 327

Chemical Analysis ID: 2115762
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 33

Chemical Analysis ID: 2115762
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2115762
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 16

Chemical Analysis ID: 2115762
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.06

Chemical Analysis ID: 2115762
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2115762

Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	204

Chem Analysis ID:	2115761
Well Report ID:	122701
Sample No:	9494
Sample Date:	
Analysis Date:	10/19/1976 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	WELL
Remarks:	

Chemical Analysis ID:	2115761
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	683

Chemical Analysis ID:	2115761
Element Name:	Nitrate plus Nitrite
Element Symbol:	NO2_NO3_N
Decimal Places:	4
Value:	0.3

Chemical Analysis ID:	2115761
Element Name:	Ion Balance
Element Symbol:	IONBAL
Decimal Places:	4
Value:	0.85

Chemical Analysis ID:	2115761
Element Name:	Sodium
Element Symbol:	NA
Decimal Places:	4
Value:	235

Chemical Analysis ID:	2115761
Element Name:	Total Alkalinity

Element Symbol: TA
Decimal Places: 4
Value: 350

Chemical Analysis ID: 2115761
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: -0.1

Chemical Analysis ID: 2115761
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1030

Chemical Analysis ID: 2115761
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.6

Chemical Analysis ID: 2115761
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 229

Chemical Analysis ID: 2115761
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 2.35

Chemical Analysis ID: 2115761
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 6

Chemical Analysis ID:	2115761
Element Name:	Carbonate
Element Symbol:	CO3
Decimal Places:	4
Value:	15

Chemical Analysis ID:	2115761
Element Name:	Calcium
Element Symbol:	CA
Decimal Places:	4
Value:	-1

Chemical Analysis ID:	2115761
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	5

Chemical Analysis ID:	2115761
Element Name:	pH
Element Symbol:	PH
Decimal Places:	2
Value:	8.6

Chemical Analysis ID:	2115761
Element Name:	Bicarbonate
Element Symbol:	HCO3
Decimal Places:	4
Value:	396

Chemical Analysis ID:	2115761
Element Name:	Magnesium
Element Symbol:	MG
Decimal Places:	4
Value:	-1

Chemical Analysis ID:	2115761
Element Name:	Nitrite
Element Symbol:	NO2
Decimal Places:	4
Value:	-0.1

Wells and Additional Sources Detail Report

Well Report ID:	122701	Annular Seal Mat:	
Well Owner ID:	10524716	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	6/10/1968 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	0	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			

Wells and Additional Sources Detail Report

Additional Comments:

Well Owner ID:	10524716
Owner Name:	STRATHMORE, TOWN OF
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849277
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446202
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547823

Diameter:	0
From:	0
To:	0

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	296530	Elevation Source:	Not Obtained
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	296530	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	296530	Annular Seal Mat:	
Well Owner ID:	10616786	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Not Applicable
Existing Well ID:		Drilling Start Dt:	6/28/2001 0:00:00
Date Received:	8/2/2001 0:00:00	Drilling End Dt:	6/28/2001 0:00:00
Type of Work:	Existing Well-Decommissioned	Pack Type:	
Plug Date:	6/28/2001 0:00:00	Pack Grain Size:	
Plug Material Type:	Bentonite Product	Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No

Wells and Additional Sources Detail Report

Total Depth Drill:	15	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	ORIGINALLY DRILLED WELL REPORT NOT AT GIC. DRILLER REPORTS OLD DUG WELL HARWOOD SITE. INSTALLED 15 BAGS OF BENTONITE + FILLED C/W FILL.		

Well Owner ID:	10616786
Owner Name:	TRENDSETTER HOMES
PO Box:	2354
Address:	STRATHMORE
City:	
Postal Code:	T1P 1K3
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN

Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Geophysical Log ID:	5909983
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5506908
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	609117
Diameter:	0
From:	0
To:	15

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122711	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122711	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	

Wells and Additional Sources Detail Report

Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014411
Well Report ID:	122711
Sample No:	664421
Sample Date:	4/21/1966 0:00:00
Analysis Date:	4/29/1966 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 150 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014411
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	200

Chemical Analysis ID:	2014411
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	400

Chemical Analysis ID:	2014411
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID: 2014411
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 11.01565

Chemical Analysis ID: 2014411
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 5

Chemical Analysis ID: 2014411
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014411
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 632

Chemical Analysis ID: 2014411
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.45

Chemical Analysis ID: 2014411
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014411
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 79.11488

Wells and Additional Sources Detail Report

Well Report ID:	122711	Annular Seal Mat:	
Well Owner ID:	10524726	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	4/25/1966 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	65	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			

Wells and Additional Sources Detail Report

Additional Comments:

Well Owner ID:	10524726
Owner Name:	PAGETS DAIRY BAR & MOTEL
PO Box:	474
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849287
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446212
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547833

Diameter:	0
From:	0
To:	65

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122707	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122707	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014413
Well Report ID:	122707
Sample No:	607433
Sample Date:	9/26/1960 0:00:00
Analysis Date:	9/27/1960 0:00:00
Laboratory:	UA
Water Level:	45
Aquifer:	
Remarks:	IGNITION LOSS 38 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014413
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4

Value: 296.43068

Chemical Analysis ID: 2014413
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014413
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 5.0055

Chemical Analysis ID: 2014413
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014413
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.8

Chemical Analysis ID: 2014413
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 325

Chemical Analysis ID: 2014413
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.67

Chemical Analysis ID: 2014413
Element Name: Total Hardness

Element Symbol:	TH
Decimal Places:	4
Value:	25

Chemical Analysis ID:	2014413
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014413
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	902

Well Report ID:	122707	Annular Seal Mat:	
Well Owner ID:	10524722	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	9/26/1960 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	145	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	4.5	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	

Wells and Additional Sources Detail Report

Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524722
Owner Name:	STRATHMORE SWIMMING POOL
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	

E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5849283
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5446208
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547829
Diameter:	0
From:	0
To:	145

Pump Test ID:	10249727
Test Date:	9/26/1960 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	100
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122604	Elevation Source:	Estimated
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Field
GIC Well ID:	122604	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3176	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes

Wells and Additional Sources Detail Report

Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	122604	Annular Seal Mat:	Driven
Well Owner ID:	10524620	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	47
Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	4/13/1976 0:00:00
Date Received:	5/12/1976 0:00:00	Drilling End Dt:	4/15/1976 0:00:00
Type of Work:	New Well	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Field
Well Use:	Industrial	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	270	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	227
Liner Material:	Steel	Pump Installed?:	No
Liner OD:	5.5	Pump Install Depth:	
Liner Thickness:	0.188	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	227	Well Disinfected?:	No
Perforation by:	Torch	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		

Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	DRILLER REPORTS SOFT WATER

Well Owner ID:	10524620
Owner Name:	STRATHMORE MOTOR PRODUCTS
PO Box:	
Address:	CALGARY
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Perforation ID:	4257246

From:	146
To:	151
Diameter:	0
Interval:	0

Perforation ID:	4165834
From:	5
To:	56
Diameter:	0
Interval:	0

Perforation ID:	4265895
From:	212
To:	227
Diameter:	0
Interval:	0

Geophysical Log ID:	5445872
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5848947
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547493
Diameter:	0
From:	0
To:	270

Depth:	53
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale

Depth:	148
Water Bearing:	No

Colour:
Description:
Material: Shale

Depth: 266
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 55
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 151
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 247
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 265
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 31
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 246
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 256
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 9
Water Bearing: No
Colour: Brown
Description: Sandy
Material: Clay

Depth: 60
Water Bearing: No
Colour:
Description:
Material: Shale & Coal

Depth: 233
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Depth: 17
Water Bearing: No
Colour: Brown
Description:
Material: Clay

Depth: 77
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth:	192
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	72
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	255
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	270
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Pump Test ID:	10249662
Test Date:	4/15/1976 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	40
End Water Level:	227
Water Removal Type:	Bailer
Water Removal Rate:	11
Removal Depth from:	227
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122705	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	

Wells and Additional Sources Detail Report

Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122705	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014113
Well Report ID:	122705
Sample No:	6210554
Sample Date:	11/6/1962 0:00:00
Analysis Date:	11/14/1962 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 136 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014113
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	3.3

Chemical Analysis ID:	2014113
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	788

Chemical Analysis ID: 2014113
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 195

Chemical Analysis ID: 2014113
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 235.34368

Chemical Analysis ID: 2014113
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014113
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014113
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014113
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 2

Chemical Analysis ID: 2014113
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 9.01345

Chemical Analysis ID:	2014113
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	300

Well Report ID:	122705	Annular Seal Mat:	
Well Owner ID:	10524720	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	11/13/1962 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	230	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			

Wells and Additional Sources Detail Report

Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owner ID:	10524720
Owner Name:	
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5446206
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Wells and Additional Sources Detail Report

Geophysical Log ID:	5849281
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547827
Diameter:	0
From:	0
To:	230

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122699	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122699	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2115759
Well Report ID:	122699
Sample No:	658756
Sample Date:	
Analysis Date:	8/13/1965 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	WELL

Remarks: IGN. LOSS - 44;

Chemical Analysis ID: 2115759
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 234

Chemical Analysis ID: 2115759
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 25

Chemical Analysis ID: 2115759
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2115759
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 798

Chemical Analysis ID: 2115759
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 325

Chemical Analysis ID: 2115759
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2115759
Element Name: Chloride

Wells and Additional Sources Detail Report

Element Symbol:	CL
Decimal Places:	4
Value:	5

Well Report ID:	122699	Annular Seal Mat:	
Well Owner ID:	10524714	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	8/11/1965 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	0	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			

Wells and Additional Sources Detail Report

Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owner ID:	10524714
Owner Name:	
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5445881
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5848956
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Wells and Additional Sources Detail Report

Borehole ID:	547502
Diameter:	0
From:	0
To:	0

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122704	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122704	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014420
Well Report ID:	122704
Sample No:	686353
Sample Date:	5/23/1968 0:00:00
Analysis Date:	5/29/1968 0:00:00
Laboratory:	UA
Water Level:	20
Aquifer:	
Remarks:	IGNITION LOSS 42 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID: 2014420

Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 720

Chemical Analysis ID: 2014420
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 6.01015

Chemical Analysis ID: 2014420
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.05

Chemical Analysis ID: 2014420
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014420
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 22

Chemical Analysis ID: 2014420
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014420
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID:	2014420
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	0.03

Chemical Analysis ID:	2014420
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	191.27927

Chemical Analysis ID:	2014420
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	375

Chem Analysis ID:	2014421
Well Report ID:	122704
Sample No:	698175
Sample Date:	7/18/1969 0:00:00
Analysis Date:	8/25/1969 0:00:00
Laboratory:	UA
Water Level:	40
Aquifer:	
Remarks:	IGNITION LOSS 56 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Chemical Analysis ID:	2014421
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	0.02

Chemical Analysis ID:	2014421
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014421
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	674

Chemical Analysis ID:	2014421
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	25

Chemical Analysis ID:	2014421
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014421
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	1.01

Chemical Analysis ID:	2014421
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014421
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	154.22303

Chemical Analysis ID:	2014421
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	2.0022

Wells and Additional Sources Detail Report

Chemical Analysis ID:	2014421
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	377

Well Report ID:	122704	Annular Seal Mat:	
Well Owner ID:	10524719	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	5/27/1968 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	100	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Unknown	Encounter Gas?:	No
Casing OD:	8	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			

Wells and Additional Sources Detail Report

Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owner ID:	10524719
Owner Name:	VOGELAAR, G.
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5446205
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5849280
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547826
Diameter:	0
From:	0
To:	100

Pump Test ID:	10249725
Test Date:	5/23/1968 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	80
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Pump Test ID:	10249726
Test Date:	7/18/1969 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	60
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122713	Elevation Source:	Estimated
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Field
GIC Well ID:	122713	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3176	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	

Wells and Additional Sources Detail Report

Proposed Use:		Additional Desc:	
Lot:	11	Validated?:	Yes
Block:	15	Submitted?:	Yes
Plan:	5894P	Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	122713	Annular Seal Mat:	Unknown
Well Owner ID:	10524728	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	145
Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	8335390	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	
Date Received:		Drilling End Dt:	9/18/1967 0:00:00
Type of Work:	New Well	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Field
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	255	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Steel	Encounter Gas?:	No
Casing OD:	5.13	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	170	Recom Intake Depth:	180
Liner Material:		Pump Installed?:	Yes
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	1.5
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes

Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:	STA-RITE		
Created by:			
Submitted by:			
Additional Comments:	DRILLER REPORTS SOFT, CLEAR WATER		

Well Owner ID:	10524728
Owner Name:	STRATHMORE, TOWN OF
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Wells and Additional Sources Detail Report

Geophysical Log ID:	5851591
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5448516
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	550137
Diameter:	0
From:	0
To:	255

Depth:	30
Water Bearing:	No
Colour:	Brown
Description:	
Material:	Shale

Depth:	50
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	75
Water Bearing:	Yes
Colour:	Blue
Description:	Water Bearing
Material:	Shale

Depth:	25
Water Bearing:	No
Colour:	
Description:	Sandy
Material:	Clay

Depth: 97
Water Bearing: No
Colour:
Description:
Material: Coal

Depth: 186
Water Bearing: No
Colour:
Description: Soft
Material: Sandstone

Depth: 250
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 41
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth: 40
Water Bearing: No
Colour:
Description:
Material: Shale

Depth: 37
Water Bearing: No
Colour: Blue
Description:
Material: Shale

Depth: 51
Water Bearing: No
Colour:
Description:
Material: Sandstone

Depth:	240
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale

Depth:	38
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sand & Coal

Depth:	120
Water Bearing:	No
Colour:	
Description:	
Material:	Shale & Rocks

Depth:	255
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Depth:	210
Water Bearing:	No
Colour:	
Description:	Soft
Material:	Sandstone

Depth:	190
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone

Depth:	22
Water Bearing:	No
Colour:	Brown

Description:	
Material:	Clay
Depth:	95
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale
Depth:	170
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale
Pump Test ID:	10249730
Test Date:	9/18/1967 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	135
End Water Level:	
Water Removal Type:	Bailer
Water Removal Rate:	28
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122706	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122706	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523

Wells and Additional Sources Detail Report

Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014417
Well Report ID:	122706
Sample No:	676796
Sample Date:	6/5/1967 0:00:00
Analysis Date:	6/15/1967 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 50 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME,

Chemical Analysis ID:	2014417
Element Name:	Iron
Element Symbol:	FE
Decimal Places:	4
Value:	1.63

Chemical Analysis ID:	2014417
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	1614

Chemical Analysis ID:	2014417
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	73.10719

Chemical Analysis ID:	2014417
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	49

Chemical Analysis ID:	2014417
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	799.1263

Chemical Analysis ID:	2014417
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	135

Chemical Analysis ID:	2014417
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014417
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014417
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	1.72

Chemical Analysis ID:	2014417
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Well Report ID:	122706	Annular Seal Mat:	
Well Owner ID:	10524721	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0

Wells and Additional Sources Detail Report

Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	6/9/1967 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	437	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524721
Owner Name:	STRATHMORE, TOWN

PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5446207
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5849282
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547828
Diameter:	0
From:	0
To:	437

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB

3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122700	Elevation Source:	Estimated
Driller ID:	24156	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122700	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3185	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:	27	Validated?:	Yes
Block:	2	Submitted?:	Yes
Plan:	4751R	Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	122700	Annular Seal Mat:	Driven
Well Owner ID:	10524715	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	20
Drill Company ID:	24156	Annular Seal Amt:	
Drill Instance ID:	8335232	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	5/7/1979 0:00:00
Date Received:	6/15/1979 0:00:00	Drilling End Dt:	5/9/1979 0:00:00
Type of Work:	New Well	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Unknown	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	115	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Steel	Encounter Gas?:	No
Casing OD:	5.56	Flow Ctrl Install?:	No
Casing Thickness:	0.156	Recommended Rate:	0
Casing Bottom:	20	Recom Intake Depth:	100

Wells and Additional Sources Detail Report

Liner Material:	Plastic	Pump Installed?:	No
Liner OD:	4.5	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	115	Well Disinfected?:	No
Perforation by:	Machine	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524715
Owner Name:	RHODES, H.W.
PO Box:	64
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1240000
Ending Well ID:	1244999

Wells and Additional Sources Detail Report

Last Well ID Used:	1240329
Company Name:	DEN-ALTA DRILLING LTD.
Street Address:	SITE 2, SITE 21, R.R. 1
City:	AIRDRIE
Province:	AB
Country:	CA
Postal Code:	T4B 2A3
E-Mail:	denalta@telusplanet.net
Is Active?:	No

Perforation ID:	4165951
From:	35
To:	55
Diameter:	0.25
Interval:	8

Perforation ID:	4257257
From:	95
To:	115
Diameter:	0
Interval:	0

Geophysical Log ID:	5446201
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5849276
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547822
Diameter:	0
From:	0
To:	115

Depth:	115
Water Bearing:	No
Colour:	
Description:	

Material:	Shale & Sandstone Ledges
Depth:	30
Water Bearing:	No
Colour:	
Description:	
Material:	Clay & Sand
Pump Test ID:	10249722
Test Date:	5/9/1979 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	50
End Water Level:	98
Water Removal Type:	Pump
Water Removal Rate:	15
Removal Depth from:	100
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	122703	Elevation Source:	Estimated
Driller ID:	24156	Method of Drilling:	
Licence No:		GPS Obtained:	Field
GIC Well ID:	122703	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3076	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:	34,35	Validated?:	Yes
Block:	17	Submitted?:	Yes
Plan:	5894P	Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433
Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Wells and Additional Sources Detail Report

Well Report ID:	122703	Annular Seal Mat:	
Well Owner ID:	10524718	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	24156	Annular Seal Amt:	
Drill Instance ID:	8335232	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	7/30/1979 0:00:00
Date Received:	8/10/1979 0:00:00	Drilling End Dt:	7/30/1979 0:00:00
Type of Work:	Reconditioned	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Field
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	155	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	145
Liner Material:	Plastic	Pump Installed?:	No
Liner OD:	4.5	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	155	Well Disinfected?:	No
Perforation by:	Machine	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			

Wells and Additional Sources Detail Report

Additional Comments:

Well Owner ID:	10524718
Owner Name:	KERNAFHAN, GERRY
PO Box:	626
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1240000
Ending Well ID:	1244999
Last Well ID Used:	1240329
Company Name:	DEN-ALTA DRILLING LTD.
Street Address:	SITE 2, SITE 21, R.R. 1
City:	AIRDRIE
Province:	AB
Country:	CA
Postal Code:	T4B 2A3
E-Mail:	denalta@telusplanet.net
Is Active?:	No

Perforation ID:	4165952
From:	95
To:	155
Diameter:	0.25
Interval:	8

Geophysical Log ID:	5446204
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Wells and Additional Sources Detail Report

Geophysical Log ID:	5849279
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547825
Diameter:	0
From:	0
To:	155

Depth:	155
Water Bearing:	No
Colour:	
Description:	
Material:	Shale & Sandstone

Pump Test ID:	10249724
Test Date:	7/30/1979 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	33
End Water Level:	
Water Removal Type:	Pump
Water Removal Rate:	2
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID:	292892	Elevation Source:	Not Obtained
Driller ID:	24297	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	292892	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.394433

Wells and Additional Sources Detail Report

Flowing Well:		Latitude:	51.041523
Date Started:		LSD:	SW
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	292892	Annular Seal Mat:	Driven
Well Owner ID:	10609287	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	19
Drill Company ID:	24297	Annular Seal Amt:	
Drill Instance ID:	8335358	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Rotary
Existing Well ID:		Drilling Start Dt:	6/28/1999 0:00:00
Date Received:	10/21/1999 0:00:00	Drilling End Dt:	6/28/1999 0:00:00
Type of Work:	New Well	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	78	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Steel	Encounter Gas?:	No
Casing OD:	6.62	Flow Ctrl Install?:	No
Casing Thickness:	0.188	Recommended Rate:	7
Casing Bottom:	19	Recom Intake Depth:	55
Liner Material:	Plastic	Pump Installed?:	No
Liner OD:	4.5	Pump Install Depth:	
Liner Thickness:	0.237	Pump Model:	
Liner Top:	18	Pump Horsepower:	
Liner Bottom:	78	Well Disinfected?:	No
Perforation by:	Hand Drill	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		

Wells and Additional Sources Detail Report

Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 16".

Well Owner ID:	10609287
Owner Name:	KRALIK, RANDY
PO Box:	49
Address:	SITE 8 RR1, STRATHMORE
City:	
Postal Code:	T1P 1J6
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1904300
Ending Well ID:	1904399
Last Well ID Used:	1904301
Company Name:	KRIEGER DRILLING LTD.
Street Address:	RR 6
City:	CALGARY
Province:	AB
Country:	CA
Postal Code:	T2M 4L5
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Perforation ID:	4166619
From:	58
To:	78
Diameter:	0.375

Interval:	0.375
Geophysical Log ID:	5851592
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No
Geophysical Log ID:	5448517
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No
Borehole ID:	550138
Diameter:	0
From:	0
To:	78
Depth:	76
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone
Depth:	2
Water Bearing:	No
Colour:	
Description:	
Material:	Topsoil
Depth:	12
Water Bearing:	No
Colour:	Brown
Description:	
Material:	Sand
Depth:	25
Water Bearing:	No
Colour:	
Description:	Medium Grained
Material:	Sandstone

Depth:	42
Water Bearing:	No
Colour:	Gray
Description:	
Material:	Shale

Depth:	52
Water Bearing:	No
Colour:	Gray
Description:	
Material:	Shale

Depth:	22
Water Bearing:	No
Colour:	Brown
Description:	
Material:	Sandstone

Depth:	47
Water Bearing:	No
Colour:	Gray
Description:	Fine Grained
Material:	Sandstone

Depth:	78
Water Bearing:	No
Colour:	Gray
Description:	Fine Grained
Material:	Siltstone & Sandstone

Pump Test ID:	10299162
Test Date:	7/1/1999 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	14.8
End Water Level:	15
Water Removal Type:	Pump
Water Removal Rate:	5
Removal Depth from:	75
Reason for Short Test:	

Pump Test Item ID: 7908440
Minutes: 10
Pumping Depth: 14.79
Recovery Depth:

Pump Test Item ID: 7908443
Minutes: 20
Pumping Depth: 14.87
Recovery Depth:

Pump Test Item ID: 7908435
Minutes: 5
Pumping Depth: 14.72
Recovery Depth: 14.24

Pump Test Item ID: 7908436
Minutes: 6
Pumping Depth: 14.73
Recovery Depth: 14.18

Pump Test Item ID: 7908437
Minutes: 7
Pumping Depth: 14.74
Recovery Depth: 14.14

Pump Test Item ID: 7908439
Minutes: 9
Pumping Depth: 14.75
Recovery Depth: 14.08

Pump Test Item ID: 7908441
Minutes: 12
Pumping Depth: 14.83
Recovery Depth:

Pump Test Item ID: 7908445
Minutes: 40
Pumping Depth: 14.96

Recovery Depth:

Pump Test Item ID: 7908433
Minutes: 3
Pumping Depth: 14.72
Recovery Depth: 14.4

Pump Test Item ID: 7908434
Minutes: 4
Pumping Depth: 14.72
Recovery Depth: 14.3

Pump Test Item ID: 7908442
Minutes: 14
Pumping Depth: 14.85
Recovery Depth:

Pump Test Item ID: 7908430
Minutes: 0
Pumping Depth: 14.8
Recovery Depth: 15

Pump Test Item ID: 7908431
Minutes: 1
Pumping Depth: 14.81
Recovery Depth: 14.59

Pump Test Item ID: 7908432
Minutes: 2
Pumping Depth: 14.81
Recovery Depth: 14.45

Pump Test Item ID: 7908444
Minutes: 30
Pumping Depth: 14.91
Recovery Depth:

Pump Test Item ID: 7908447
Minutes: 90

Pumping Depth: 15
Recovery Depth:

Pump Test Item ID: 7908448
Minutes: 120
Pumping Depth: 15
Recovery Depth:

Pump Test Item ID: 7908438
Minutes: 8
Pumping Depth: 14.74
Recovery Depth: 14.16

Pump Test Item ID: 7908446
Minutes: 60
Pumping Depth: 14.99
Recovery Depth:

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
3	WSW	0.17	173.98	974.46	WWIS

Well ID: 122608
Driller ID: 11110
Licence No:
GIC Well ID: 122608
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Map
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Wells and Additional Sources Detail Report

Chem Analysis ID:	2014175
Well Report ID:	122608
Sample No:	6402W
Sample Date:	4/23/1986 0:00:00
Analysis Date:	5/28/1986 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	
Remarks:	

Chemical Analysis ID:	2014175
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	589

Chemical Analysis ID:	2014175
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	40.05465

Chemical Analysis ID:	2014175
Element Name:	Nitrite
Element Symbol:	NO2
Decimal Places:	4
Value:	-0.0504

Chemical Analysis ID:	2014175
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	360

Chemical Analysis ID:	2014175
Element Name:	Bicarbonate
Element Symbol:	HCO3
Decimal Places:	4
Value:	439.045454

Chemical Analysis ID:	2014175
Element Name:	Silica
Element Symbol:	SIO2
Decimal Places:	4
Value:	9.6

Chemical Analysis ID:	2014175
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014175
Element Name:	Electrical Conductivity
Element Symbol:	EC
Decimal Places:	0
Value:	999

Chemical Analysis ID:	2014175
Element Name:	Magnesium
Element Symbol:	MG
Decimal Places:	4
Value:	-1.000768

Chemical Analysis ID:	2014175
Element Name:	Sodium
Element Symbol:	NA
Decimal Places:	4
Value:	230

Chemical Analysis ID:	2014175
Element Name:	Calcium
Element Symbol:	CA
Decimal Places:	4
Value:	3.999984

Chemical Analysis ID:	2014175
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4

Value: 0

Chemical Analysis ID: 2014175
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 10

Chemical Analysis ID: 2014175
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: -0.02

Chemical Analysis ID: 2014175
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014175
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.2

Chemical Analysis ID: 2014175
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.99

Chemical Analysis ID: 2014175
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.716

Chemical Analysis ID: 2014175
Element Name: Sulphate

Element Symbol:	SO4
Decimal Places:	4
Value:	98.14324

Chemical Analysis ID:	2014175
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	0.56

Chemical Analysis ID:	2014175
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Well Report ID:	122608	Annular Seal Mat:	
Well Owner ID:	10524624	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:	5/16/1986 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Map
Well Use:	Domestic	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	120	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	

Wells and Additional Sources Detail Report

Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524624
Owner Name:	GIROUX, NOVA
PO Box:	1475
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	

E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5848951
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5445876
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	547497
Diameter:	0
From:	0
To:	120

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	122621	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122621	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Wells and Additional Sources Detail Report

Well Report ID:	122621	Annular Seal Mat:	
Well Owner ID:	10524637	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:		Drilling End Dt:	7/5/1913 0:00:00
Type of Work:	Well Inventory	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Unknown	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	296	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			

Wells and Additional Sources Detail Report

Additional Comments:

Well Owner ID:	10524637
Owner Name:	#WELL 1 TOWER
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5447509
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5850584
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549130

Diameter:	0
From:	0
To:	296

Pump Test ID:	10249674
Test Date:	7/5/1913 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	0
End Water Level:	
Water Removal Type:	
Water Removal Rate:	4
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	239592	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	239592	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014105
Well Report ID:	239592
Sample No:	10669

Wells and Additional Sources Detail Report

Sample Date:	10/6/1980 0:00:00
Analysis Date:	10/17/1980 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	
Remarks:	

Chemical Analysis ID:	2014105
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	220

Chemical Analysis ID:	2014105
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	65.09373

Chemical Analysis ID:	2014105
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	0.37

Chemical Analysis ID:	2014105
Element Name:	Silica
Element Symbol:	SIO2
Decimal Places:	4
Value:	1.4

Chemical Analysis ID:	2014105
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014105
Element Name:	pH
Element Symbol:	PH
Decimal Places:	2

Value: 8.3

Chemical Analysis ID: 2014105
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 151.01494

Chemical Analysis ID: 2014105
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.24

Chemical Analysis ID: 2014105
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 1

Chemical Analysis ID: 2014105
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 31.999872

Chemical Analysis ID: 2014105
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014105
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.82

Chemical Analysis ID: 2014105
Element Name: Total Hardness

Element Symbol: TH
Decimal Places: 4
Value: 133

Chemical Analysis ID: 2014105
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 13.0112

Chemical Analysis ID: 2014105
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 124

Chemical Analysis ID: 2014105
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014105
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014105
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014105
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 388

Wells and Additional Sources Detail Report

Chemical Analysis ID:	2014105
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	5.0055

Chemical Analysis ID:	2014105
Element Name:	Sodium
Element Symbol:	NA
Decimal Places:	4
Value:	29.9989

Well Report ID:	239592	Annular Seal Mat:	
Well Owner ID:	10499923	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	10/9/1980 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	0	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		

Wells and Additional Sources Detail Report

Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owner ID:	10499923
Owner Name:	BRENTWOOD SCHOOL
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5447514

Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5850589
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549135
Diameter:	0
From:	0
To:	0

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	239588	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	239588	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014102
Well Report ID:	239588
Sample No:	3113

Sample Date:	4/1/1980 0:00:00
Analysis Date:	4/15/1980 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	
Remarks:	

Chemical Analysis ID:	2014102
Element Name:	Nitrate plus Nitrite
Element Symbol:	NO2_NO3_N
Decimal Places:	4
Value:	-0.0504

Chemical Analysis ID:	2014102
Element Name:	Electrical Conductivity
Element Symbol:	EC
Decimal Places:	0
Value:	1088

Chemical Analysis ID:	2014102
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	186.27206

Chemical Analysis ID:	2014102
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014102
Element Name:	Ion Balance
Element Symbol:	IONBAL
Decimal Places:	4
Value:	0.98

Chemical Analysis ID:	2014102
Element Name:	Potassium
Element Symbol:	K
Decimal Places:	4

Value: 1.228

Chemical Analysis ID: 2014102
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 462.046154

Chemical Analysis ID: 2014102
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.7

Chemical Analysis ID: 2014102
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 668

Chemical Analysis ID: 2014102
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 235.0002

Chemical Analysis ID: 2014102
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014102
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.03

Chemical Analysis ID: 2014102
Element Name: Total Hardness

Element Symbol: TH
Decimal Places: 4
Value: 50

Chemical Analysis ID: 2014102
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 5.00384

Chemical Analysis ID: 2014102
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 379

Chemical Analysis ID: 2014102
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 8.7

Chemical Analysis ID: 2014102
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.3

Chemical Analysis ID: 2014102
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 11.999952

Chemical Analysis ID: 2014102
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Wells and Additional Sources Detail Report

Chemical Analysis ID:	2014102
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	2.0022

Chemical Analysis ID:	2014102
Element Name:	Nitrite
Element Symbol:	NO2
Decimal Places:	4
Value:	-0.0504

Well Report ID:	239588	Annular Seal Mat:	
Well Owner ID:	10499920	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	4/9/1980 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	0	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		

Wells and Additional Sources Detail Report

Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owner ID:	10499920
Owner Name:	STRATHMORE, TOWN OF
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5447511

Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5850586
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549132
Diameter:	0
From:	0
To:	0

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	239593	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	239593	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014101
Well Report ID:	239593
Sample No:	1631

Wells and Additional Sources Detail Report

Sample Date:	2/18/1980 0:00:00
Analysis Date:	2/28/1980 0:00:00
Laboratory:	AE
Water Level:	94.5
Aquifer:	
Remarks:	

Chemical Analysis ID:	2014101
Element Name:	Electrical Conductivity
Element Symbol:	EC
Decimal Places:	0
Value:	866

Chemical Analysis ID:	2014101
Element Name:	Magnesium
Element Symbol:	MG
Decimal Places:	4
Value:	-1.000768

Chemical Analysis ID:	2014101
Element Name:	Calcium
Element Symbol:	CA
Decimal Places:	4
Value:	1.999992

Chemical Analysis ID:	2014101
Element Name:	Silica
Element Symbol:	SIO2
Decimal Places:	4
Value:	9.6

Chemical Analysis ID:	2014101
Element Name:	pH
Element Symbol:	PH
Decimal Places:	2
Value:	8.9

Chemical Analysis ID:	2014101
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4

Value: -5

Chemical Analysis ID: 2014101
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 386.038271

Chemical Analysis ID: 2014101
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014101
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014101
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.92

Chemical Analysis ID: 2014101
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.8

Chemical Analysis ID: 2014101
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: 0.0602

Chemical Analysis ID: 2014101
Element Name: Nitrite

Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014101
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 83.12161

Chemical Analysis ID: 2014101
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 501

Chemical Analysis ID: 2014101
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 190.9989

Chemical Analysis ID: 2014101
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.03

Chemical Analysis ID: 2014101
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 2.0022

Chemical Analysis ID: 2014101
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Wells and Additional Sources Detail Report

Chemical Analysis ID:	2014101
Element Name:	Potassium
Element Symbol:	K
Decimal Places:	4
Value:	0.308

Chemical Analysis ID:	2014101
Element Name:	Carbonate
Element Symbol:	CO3
Decimal Places:	4
Value:	33

Chemical Analysis ID:	2014101
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	373

Well Report ID:	239593	Annular Seal Mat:	
Well Owner ID:	10499925	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	2/22/1980 0:00:00	Drilling End Dt:	
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	270	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No

Wells and Additional Sources Detail Report

Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10499925
Owner Name:	STRATHMORE, TOWN OF
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB

Wells and Additional Sources Detail Report

Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5850590
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5447515
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549136
Diameter:	0
From:	0
To:	270

Pump Test ID:	10234087
Test Date:	2/18/1980 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	94.5
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	239590	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	239590	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	

Wells and Additional Sources Detail Report

Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014104
Well Report ID:	239590
Sample No:	3051
Sample Date:	4/1/1980 0:00:00
Analysis Date:	4/15/1980 0:00:00
Laboratory:	AE
Water Level:	94
Aquifer:	
Remarks:	

Chemical Analysis ID:	2014104
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014104
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	0.75

Chemical Analysis ID:	2014104
Element Name:	Silica
Element Symbol:	SIO2
Decimal Places:	4
Value:	9.2

Chemical Analysis ID: 2014104
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014104
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 4.99998

Chemical Analysis ID: 2014104
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014104
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 427.04164

Chemical Analysis ID: 2014104
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 367

Chemical Analysis ID: 2014104
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014104
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4

Value: 0

Chemical Analysis ID: 2014104
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 2.001536

Chemical Analysis ID: 2014104
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 200.0011

Chemical Analysis ID: 2014104
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 127.18602

Chemical Analysis ID: 2014104
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.15

Chemical Analysis ID: 2014104
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 2.0022

Chemical Analysis ID: 2014104
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.91

Chemical Analysis ID: 2014104
Element Name: Potassium

Element Symbol: K
Decimal Places: 4
Value: 0.82

Chemical Analysis ID: 2014104
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 557

Chemical Analysis ID: 2014104
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 9.999

Chemical Analysis ID: 2014104
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.7

Chemical Analysis ID: 2014104
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 23

Chemical Analysis ID: 2014104
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 946

Well Report ID:	239590	Annular Seal Mat:	
Well Owner ID:	10499922	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	

Wells and Additional Sources Detail Report

Date Received:	4/9/1980 0:00:00	Drilling End Dt:	6/1/1979 0:00:00
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	255	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10499922
Owner Name:	STRATHMORE, TOWN OF
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0

Wells and Additional Sources Detail Report

Province:
Country:

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5850588
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5447513
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549134
Diameter:	0
From:	0
To:	255

Pump Test ID:	10234086
Test Date:	4/1/1980 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No

Static Water Level:	94
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	239589	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	239589	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chem Analysis ID:	2014103
Well Report ID:	239589
Sample No:	3114
Sample Date:	4/1/1980 0:00:00
Analysis Date:	4/15/1980 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	
Remarks:	

Chemical Analysis ID: 2014103

Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Chemical Analysis ID:	2014103
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	614

Chemical Analysis ID:	2014103
Element Name:	Electrical Conductivity
Element Symbol:	EC
Decimal Places:	0
Value:	1019

Chemical Analysis ID:	2014103
Element Name:	Ion Balance
Element Symbol:	IONBAL
Decimal Places:	4
Value:	0.97

Chemical Analysis ID:	2014103
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	13

Chemical Analysis ID:	2014103
Element Name:	Silica
Element Symbol:	SIO2
Decimal Places:	4
Value:	7.7

Chemical Analysis ID:	2014103
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	166.24322

Chemical Analysis ID: 2014103
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014103
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 14.001

Chemical Analysis ID: 2014103
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014103
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 1.000768

Chemical Analysis ID: 2014103
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.8

Chemical Analysis ID: 2014103
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Chemical Analysis ID: 2014103
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4

Value: 3.0033

Chemical Analysis ID: 2014103
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 350

Chemical Analysis ID: 2014103
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.53

Chemical Analysis ID: 2014103
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.04

Chemical Analysis ID: 2014103
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Chemical Analysis ID: 2014103
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 230

Chemical Analysis ID: 2014103
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 397.041259

Chemical Analysis ID: 2014103
Element Name: Potassium

Element Symbol:	K
Decimal Places:	4
Value:	0.716

Chemical Analysis ID:	2014103
Element Name:	Calcium
Element Symbol:	CA
Decimal Places:	4
Value:	2.999988

Well Report ID:	239589	Annular Seal Mat:	
Well Owner ID:	10499921	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	4/9/1980 0:00:00	Drilling End Dt:	5/1/1972 0:00:00
Type of Work:	Chemistry	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Municipal	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	150	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	
Casing Bottom:	0	Recom Intake Depth:	
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		

Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owner ID:	10499921
Owner Name:	STRATHMORE, TOWN OF#NORTH WELL
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5850587
Log Type:	Gamma
Log Taken?:	No

Sent to AENV?:	No

Geophysical Log ID:	5447512
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549133
Diameter:	0
From:	0
To:	150

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
4	NNE	0.19	190.90	976.03	WWIS

Well ID:	122620	Elevation Source:	Not Obtained
Driller ID:	11110	Method of Drilling:	
Licence No:		GPS Obtained:	Not Verified
GIC Well ID:	122620	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):		Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	Yes
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.388696
Flowing Well:		Latitude:	51.045139
Date Started:		LSD:	
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	122620	Annular Seal Mat:	
Well Owner ID:	10524636	Annular Seal from:	0
Driller ID:	2533726	Annular Seal to:	0
Drill Company ID:	11110	Annular Seal Amt:	
Drill Instance ID:	8337868	Annular Seal Units:	

Wells and Additional Sources Detail Report

Drill Comp Well ID:		Drilling Method:	Drilled
Existing Well ID:		Drilling Start Dt:	
Date Received:		Drilling End Dt:	
Type of Work:	Well Inventory	Pack Type:	
Plug Date:		Pack Grain Size:	
Plug Material Type:		Pack Amount:	
Plug Mat Amount:		Pack Units:	
Plugged Units:		Loc Verify Method:	Not Verified
Well Use:	Unknown	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	210	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:		Encounter Gas?:	No
Casing OD:	0	Flow Ctrl Install?:	No
Casing Thickness:	0	Recommended Rate:	0
Casing Bottom:	0	Recom Intake Depth:	0
Liner Material:		Pump Installed?:	No
Liner OD:	0	Pump Install Depth:	
Liner Thickness:	0	Pump Model:	
Liner Top:	0	Pump Horsepower:	
Liner Bottom:	0	Well Disinfected?:	No
Perforation by:		Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:	0	Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owner ID:	10524636
Owner Name:	#WELL 3 DITCHRIDER
PO Box:	
Address:	STRATHMORE

Wells and Additional Sources Detail Report

City:
Postal Code:
Province:
Country:

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Log ID:	5447508
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Log ID:	5850583
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Borehole ID:	549129
Diameter:	0
From:	0
To:	210

Pump Test ID:	10249673
Test Date:	

Wells and Additional Sources Detail Report

Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	190
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
5	N	0.17	172.27	974.00	WWIS

Well ID:	11659589	Elevation Source:	Hand held autonomous GPS 20-30m
Driller ID:	24227	Method of Drilling:	
Licence No:		GPS Obtained:	Hand held autonomous GPS 20-30m
GIC Well ID:	1476196	Boundary From:	
GOA Well Tag No:		Distance North:	
Elevation (ft):	3207	Distance South:	
Depth (ft):		Distance East:	
Date Completed:		Distance West:	
Proposed Use:		Additional Desc:	
Lot:		Validated?:	No
Block:		Submitted?:	Yes
Plan:		Location Locked?:	Yes
Type of Work:		Longitude:	-113.390423
Flowing Well:		Latitude:	51.045441
Date Started:		LSD:	11
Water Req Per Day:		Section:	14
Gas Present:		Township:	24
Oil Present:		Range:	25
Flow Rate:		Meridian:	4
Drilling Company:		DLS Coordinates:	11-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Report ID:	11659591	Annular Seal Mat:	Unknown
Well Owner ID:	11659590	Annular Seal from:	
Driller ID:	11633916	Annular Seal to:	
Drill Company ID:	24227	Annular Seal Amt:	
Drill Instance ID:	11633921	Annular Seal Units:	
Drill Comp Well ID:		Drilling Method:	Unknown
Existing Well ID:		Drilling Start Dt:	
Date Received:	11/19/2007 0:00:00	Drilling End Dt:	
Type of Work:	Existing Well-Decommissioned	Pack Type:	Unknown
Plug Date:	10/19/2007 0:00:00	Pack Grain Size:	

Wells and Additional Sources Detail Report

Plug Material Type:	Bentonite Product	Pack Amount:	
Plug Mat Amount:	20	Pack Units:	Unknown
Plugged Units:	Bags	Loc Verify Method:	Not Verified
Well Use:	Unknown	Dist Casing Ground:	
Other Well Use:		Artesian Flow?:	No
Total Depth Drill:	78	Artesian Flow Rate:	
Finish Well Depth:		Gas Depth:	
Casing Material:	Steel	Encounter Gas?:	No
Casing OD:	5.5	Flow Ctrl Install?:	No
Casing Thickness:		Recommended Rate:	
Casing Bottom:		Recom Intake Depth:	
Liner Material:	Unknown	Pump Installed?:	No
Liner OD:		Pump Install Depth:	
Liner Thickness:		Pump Model:	
Liner Top:		Pump Horsepower:	
Liner Bottom:		Well Disinfected?:	No
Perforation by:	Unknown	Other Log:	
Screen Material:		Divert Water Src:	
Screen Size OD:		Divert Water Amt:	
Screen Attachment:		Diversion Dt/Time:	
Screen Top Fitting:		Is Submitted?:	Yes
Screen Bot Fitting:		Is Validated?:	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:	10/22/2007 0:00:00		
Drilling Report Given to Owner:	Yes		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	DRILLING REPORT FOR ORIGINAL WELL NOT HELD IN GIC. GPS# 12U-0332439, 5657597 (6.1). WELL WAS CHLORINATED. WELL WAS ABANDONED WITH BENTONITE CHIPS FROM BOTTOM TO TOP, CASING OR LINER WAS NOT REMOVED. PLUGGING MATERIAL: HIGH SOLIDS BENTONITE (20 BAGS).		

Well Owner ID:	11659590
Owner Name:	CRYSTAL RIDGE HOMES
PO Box:	2273
Address:	
City:	STRATHMORE
Postal Code:	T1P 1K2
Province:	ALBERTA

Wells and Additional Sources Detail Report

Country:	CA
Driller ID:	11633916
Last Name:	HODGINS
Middle Initial:	
First Name:	BRAD
Journeyman No:	xxxxxxx
Is Active?:	No
Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes
Depth:	78
Water Bearing:	No
Colour:	
Description:	
Material:	Old Well
Pump Test ID:	11659592
Test Date:	
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	16
End Water Level:	
Water Removal Type:	Unknown
Water Removal Rate:	
Removal Depth from:	
Reason for Short Test:	ABANDONED

Well Licenses

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
2	-	0.00	0.00	971.92	AER OGW

Well ID: 00/06-14-024-25W4/0 Agent:

Wells and Additional Sources Detail Report

Well Status:	0202000000	Operator:	
Keylist:	0244251406000	Field:	0339
License No:	0267711	Pool:	0950160
Licence Status:	Issued	OS Area:	
Licence Date:	2002-02-14	OS Dep:	0000000
Stat Date:	2014-08-19	Max Tvd:	990.2
Well Fluid:	GAS	Ground Elevation:	966.2
Well Mode:	ABD	Surf Loc:	
Well Type:	N/A	EDCT:	
Well Structure:	N/A	Rating Ev:	
Scheme Type:		Op Surv Prov:	
Scheme Subt:		FD Date:	2002-03-01
Bttm/Surface Hole:	Bottom Holes	Total Dep:	1742
Fluid Short Desc:	GAS	KBE:	970
Mode Short Desc:	ABANDONED	Latitude:	51.043735
Type Short Desc:	Not Applicable	Longitude:	-113.393518
Update:			
Structure Short Description:	Not Applicable		
Licensee:	Ember Resources Inc.		

Oil and Gas Wells

Map Key	Direction	Distance (km)	Distance (m)	Elevation (m)	DB
1	-	0.00	0.00	971.94	OGW

Licence ID:	267711	Ground Elevation:	966.2
Field ID:	STRATHMORE	Total Depth (ft):	1742
Area ID:	STRATHMORE	LSD:	6
Rig ID:	159	Section:	14
Rig Released:	02/03/01	Township:	24
Well Name:	PCE PCR STRATHMORE 6-14-24-25	Range:	25
Status Code:		Meridian:	4
Well Status:	GAS	Latitude:	
Class Code:		Longitude:	
Well Class:	DEVELOPMENT WELL	Projected Zone:	MILK RIVER
Well Type Code:		Quarter:	
Well Type:	DIRECTIONAL	Unit:	
Status Date:	03/09/16	Block:	
Drill Date:	02/02/26	Quad:	
Licence Date:	02/02/14	Map:	
Well Year:		Sheet:	
Surveyor:		Province:	
Contractor:	PRECISION DRILLING, A DIVISION OF PLP		

Radon Information

Detailed radon information for the project property is provided below.

Radon Zone Information

ID:	144850	**Radon Rank:**	HIGH

Health Canada Radon Information

Health Region:	4823
Health Region Name:	Calgary Health Region
Province or Territory:	AB
Number Homes in Survey:	86
% Below 200 Bq/m3:	91.9
% Above 200 Bq/m3:	8.1
200 to 600 Bq/m3:	8.1
% Above 600 Bq/m3:	0

Appendix

Federal Sources

Bedrock Geology of Canada — **BEDROCK GEOLOGY**

The Geological Map of Canada is scaled at 1:5,000,000. This map is created by Geological Survey of Canada and published by Natural Resources Canada.

Health Canada Radon Information — **RADON**

This source is the results from the Cross-Canada Survey of Radon Concentrations in Homes, a two-year study conducted by Health Canada's National Radon Program. The aims of this study were to obtain an estimate of the proportion of the Canadian population living in homes with radon gas levels above the guideline of 200 Bq/m3, to identify previously unknown areas where radon gas exposure may constitute a health risk, and to build, over time, a map of indoor radon gas exposure levels across Canada.

National Energy Board Wells — **NEBW**

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Soil Landscapes of Canada (SLC) — **SLC**

Major characteristics of soil and land such as surface form, slope, water table depth, permafrost and lakes.

Surficial Geology of Canada — **SURFICIAL GEOLOGY**

This map contains information on surficial materials and associated landforms left by the retreat of the last glaciers and non glacial environments. It is based on compilation of existing maps. This data was authored by the Geological Survey of Canada and published by Natural Resources Canada.

Toporama — **TOPORAMA**

Toporama covers the entire area of Canada's landmass and provides topographic, geo-referenced, and symbolic information in a raster format at 1:50,000 scale. This is a digital topographic reference product made available by Natural Resources Canada (NRCan).

Provincial Sources

Alberta Detailed Soil Survey (DSS3) — **SOIL SURVEY**

Soil surveys have been published for most of the agricultural areas, and many surrounding areas, across Canada. Data from these surveys comprise the most detailed soil inventory information in the National Soil DataBase. Data is made available by Agriculture and Agri-Food Canada

Alberta Oil and Gas Wells — **AOGW**

The Alberta Energy Utilities Board - now the Alberta Energy Regulator (AER) - maintained a database of oil and gas wells drilled in the province of Alberta. The database contains information on well name, licensee name, license number, location, status, total well depth and date of final drilling. Please note that this database will not be updated, information on wells drilled after September 2003 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

Alberta Orphan Wells — **ORP**

Orphan wells are wells that have not been properly abandoned and whose operators are defunct or insolvent. In Alberta, orphan wells fall under the responsibility of the Orphan Well Association, which works under the the delegated authority of the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB). The data includes Location, Well ID, License Name and License Number.

Alberta Water Well Information Database — **WWIS**

List of wells in the Alberta Water Well Information Database made available by Alberta Environment and Parks, containing approximately 500,000 records with nearly 5,000 drilling reports added annually. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location; some locations will be accurate to the quarter section only. The Province of Alberta advises that the data may not be fully checked, and disclaims all responsibility for its accuracy. This data was previously collected from the Groundwater Information

Center of the Natural Resource Service.

Bedrock Geology of Alberta — **BEDROCK GEOLOGY**

This dataset represents the compilation of existing geological maps and original geological mapping by Alberta Geological Survey (AGS) staff. Mapping in support of the dataset included field observations and creating three-dimensional models of subsurface stratigraphy based on the interpretation of geophysical logs from oil and gas wells. Each three-dimensional formation surface was projected to a model of the bedrock surface, and the intersection formed the first approximation of the position of the geological contact at the base of the surficial deposits. This data is made available by Alberta Geological Survey.

Groundwater Well Network — **GROUNDWATER**

Groundwater level, chemical analysis and water quality data from monitoring wells that are part of the Groundwater Observation Well Network (GOWN).

Horizontal Wells — **HORW**

Defined as drilling directionally at a wellbore inclination angle exceeding 85 degrees, horizontal drilling can help increase resource recovery while minimizing surface impact. Recent improvements in the technology have made it possible to combine horizontal drilling with hydraulic fracturing to help coax oil and natural gas out of tight rock. Today, more than half of western Canada's wells are being drilled horizontally. Data includes: well locations (LE,LS,SE,TWP,RG,M,E), licence numbers, well names, Business Associate (BA) codes, licensee abbreviations, spud dates, final drilling dates, total depth, true vertical depth, and last updated dates. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Surficial Geology of Alberta — **SURFICIAL GEOLOGY**

This dataset, made available by Alberta Geological Survey, is a compilation of existing surficial map information for Alberta, edited for mapping continuity and generalized to make it suitable for presentation and use at 1:1,000,000 scale. It is the dataset used to create Alberta Geological Survey Map 601: Surficial Geology of Alberta.

Well Licenses — **AER OGW**

Locations of Well Licenses made available by the Alberta Energy Regulator (AER) as ST37. Includes Active, Suspended, Abandoned, Drilled and Cased Oil, Gas, Crude Bitumen well licenses, as well as Observation, Injection, Disposal, and Undefined well licences.

Wetlands of Alberta — **WETLAND**

The Alberta Merged Wetland Inventory depicts wetlands within the province of Alberta for the period 1998 to 2015 classified to the Canadian Wetland Classification System (CWCS) at the major class level: marsh, bog, fen, swamp, and open water. This database is made available by Alberta Environment and Parks.

Private Sources

Oil and Gas Wells — **OGW**

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Radon Zone Information — **RADON**

The Radon Potential Map is developed by Radon Environmental Management Corporation. Its objective was to illustrate the relative variation of radon risk across the country, and in 2011 it published its first geologic Radon Potential Map of Canada.

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Appendix C
Land Title Documents

Clifton

HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JUNE 10,2005

S

LINC	SHORT LEGAL	TITLE NUMBER
0021 879 275	4;25;24;14;NW,SW,SE	741 005 673

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 25 TOWNSHIP 24
SECTION 14
THOSE PORTIONS OF THE WEST HALF AND THE SOUTH EAST QUARTER
WHICH LIE:
TO THE SOUTH WEST OF THE RAILWAY ON PLAN RY11
TO THE NORTH EAST OF FIRST AVENUE ON PLAN 2461K AND 5894P
TO THE SOUTH EAST OF BLOCK 'D' ON PLAN 5894P AND
TO THE NORTH WEST OF BLOCK 'R 32' ON PLAN 7260JK
CONTAINING 7.81 HECTARES (19.3 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	ACRES (MORE OR LESS)
STREET	7710290	0.162	0.40
SUBDIVISION	8210291	0.869	2.15

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: TOWN OF STRATHMORE

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
741 005 673	18/01/1974		$5,225	

OWNERS

THE TOWN OF STRATHMORE.
OF P.O.BOX 359, STRATHMORE
ALBERTA T0J 3H0

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
051 203 596	10/06/2005	TRANSFER OF PART OF LAND OWNERS - CAPTAIN ENTERPRISES LTD.

(CONTINUED)

REGISTRATION
NUMBER DATE (D/M/Y) PARTICULARS

26 MADISON COURT
STRATHMORE
ALBERTA T1P1M5
NEW TITLE ISSUED

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 12 DAY OF MARCH, 2019 AT 10:55 A.M.

ORDER NUMBER: 36848305

CUSTOMER FILE NUMBER:

END OF CERTIFICATE

THIS ELECTRONICALLY TRANSMITTED LAND TITLES PRODUCT IS INTENDED FOR THE SOLE USE OF THE ORIGINAL PURCHASER, AND NONE OTHER, SUBJECT TO WHAT IS SET OUT IN THE PARAGRAPH BELOW.

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HISTORICAL LAND TITLE CERTIFICATE

TITLE CANCELLED ON JUNE 10,2005

S

LINC	SHORT LEGAL	TITLE NUMBER
0031 098 171	4;25;24;14;NW,SW,SE	051 203 596 +2

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 25 TOWNSHIP 24
SECTION 14
THOSE PORTIONS OF THE WEST HALF AND THE SOUTH EAST QUARTER
WHICH LIE:
TO THE SOUTH WEST OF THE RAILWAY ON PLAN RY11
TO THE NORTH EAST OF FIRST AVENUE ON PLAN 2461K AND 5894P
TO THE SOUTH EAST OF BLOCK 'D' ON PLAN 5894P AND
TO THE NORTH WEST OF BLOCK 'R 32' ON PLAN 7260JK
CONTAINING 7.81 HECTARES (19.3 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	ACRES (MORE OR LESS)
STREET	7710290	0.162	0.40
SUBDIVISION	8210291	0.869	2.15

THAT PORTION OF THE SOUTH HALF OF SECTION 14,TOWNSHIP 24,RANGE 25
WEST OF THE FOURTH MERIDIAN WHICH LIES WITHIN THE LIMITS OF LOT 1 ,
BLOCK 31 ON PLAN 051--- CONTAINING 0.031 HECTARES MORE OR LESS.
EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: TOWN OF STRATHMORE

REFERENCE NUMBER: 741 005 673

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
051 203 596	10/06/2005	TRANSFER OF PART OF LAND		

OWNERS

THE TOWN OF STRATHMORE.
OF P.O.BOX 359, STRATHMORE
ALBERTA T0J 3H0

(CONTINUED)

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
051 203 989	10/06/2005	SUBDIVISION PLAN 0512059 TITLE CANCELLED AS TO PART AND NEW TITLE ISSUED FOR THE REMAINDER

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 12 DAY OF MARCH, 2019 AT 10:55 A.M.

ORDER NUMBER: 36848305

CUSTOMER FILE NUMBER:

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HISTORICAL LAND TITLE CERTIFICATE

CURRENT TITLE WITH HISTORICAL DATA

S

LINC	SHORT LEGAL	TITLE NUMBER
0031 098 312	4;25;24;14;NW,SW,SE	051 203 989 +3

LEGAL DESCRIPTION

MERIDIAN 4 RANGE 25 TOWNSHIP 24
SECTION 14
THOSE PORTIONS OF THE WEST HALF AND THE SOUTH EAST QUARTER
WHICH LIE:
TO THE SOUTH WEST OF THE RAILWAY ON PLAN RY11
TO THE NORTH EAST OF FIRST AVENUE ON PLAN 2461K AND 5894P
TO THE SOUTH EAST OF BLOCK 'D' ON PLAN 5894P AND
TO THE NORTH WEST OF BLOCK 'R 32' ON PLAN 7260JK
CONTAINING 7.81 HECTARES (19.3 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

PLAN	NUMBER	HECTARES	ACRES (MORE OR LESS)
STREET	7710290	0.162	0.40
SUBDIVISION	8210291	0.869	2.15
SUBDIVISION	0512059	0.387	0.96

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: TOWN OF STRATHMORE

REFERENCE NUMBER: 051 203 596 +2

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
051 203 989	10/06/2005	SUBDIVISION PLAN		

OWNERS

THE TOWN OF STRATHMORE.
OF P.O.BOX 359, STRATHMORE
ALBERTA T0J 3H0

(CONTINUED)

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
091 354 717	25/11/2009	CAVEAT RE : UTILITY RIGHT OF WAY CAVEATOR - ATCO GAS AND PIPELINES LTD. 909 11 AVE SW CALGARY ALBERTA T2R1L8

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 12 DAY OF MARCH, 2019 AT 10:55 A.M.

ORDER NUMBER: 36848305

CUSTOMER FILE NUMBER:

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Appendix D
ERIS Report

Clifton

ENVIRONMENTAL RISK INFORMATION SERVICES

DATABASE REPORT

Project Property:	*Strathmore Town Hall - Phase I ESA* *Kinsemen Park* *Strathmore AB*
Project No:	*CG3198*
Report Type:	*Quote - Custom-Build Your Own Report*
Order No:	*20190312051*
Requested by:	*Clifton Associates Ltd.*
Date Completed:	*March 18, 2019*

Environmental Risk Information Services
A division of Glacier Media Inc.
1.866.517.5204 | info@erisinfo.com | erisinfo.com

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Executive Summary

Property Information:

Project Property:	*Strathmore Town Hall - Phase I ESA* *Kinsemen Park Strathmore AB*
Project No:	*CG3198*

Order Information:

Order No:	*20190312051*
Date Requested:	*March 12, 2019*
Requested by:	*Clifton Associates Ltd.*
Report Type:	*Quote - Custom-Build Your Own Report*

Historical/Products:

Physical Setting Report (PSR)	*PSR*

Executive Summary: Report Summary

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
AER OGW	Well Licenses	Y	1	0	1
AGR	Agriculture and Fisheries - Certificates of Approval	Y	0	0	0
AOGW	Alberta Oil and Gas Wells	Y	1	0	1
AUWR	Automobile Wrecking & Supplies	Y	0	0	0
CAWD	Waste Management Facilities - Certificates of Approval	Y	0	0	0
CFO	Confined Feeding Operations	Y	0	0	0
CHEM	Chemical Processing Operations - Certificates of Approval	Y	0	0	0
CNG	Compressed Natural Gas Stations	Y	0	0	0
CONV	Compliance and Convictions	Y	0	0	0
DRYCLEANERS	Dry Cleaning Facilities	Y	0	0	0
EAS	Enforcement Action Summary	Y	0	0	0
EEM	Environmental Effects Monitoring	Y	0	0	0
EHS	ERIS Historical Searches	Y	0	9	9
EIIS	Environmental Issues Inventory System	Y	0	0	0
EPST	Alberta Environment & Parks Storage Tanks	Y	0	0	0
EPWN	Environment Protection & Enhancement Act and Water Act Public Notices	Y	0	0	0
ESAR	Environmental Site Assessment Repository	Y	0	18	18
FAC	Facility List	Y	0	0	0
FCON	Federal Convictions	Y	0	0	0
FCS	Contaminated Sites on Federal Land	Y	0	0	0
FIS	Field Inspection Incident Report	Y	0	0	0
FOOD	Food Processing Operations - Certificates of Approval	Y	0	0	0
FST	PTMAA Fuel Storage Tanks	Y	0	26	26
GEN	Waste Generators Summary	Y	3	2	5
GHG	Greenhouse Gas Emissions from Large Facilities	Y	0	0	0
GPP	Gas Processing Plants	Y	0	0	0
HELP	Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database	Y	0	0	0
HORW	Horizontal Wells	Y	0	0	0
IAFT	Indian & Northern Affairs Fuel Tanks	Y	0	0	0
LDS	Identification and Verification of Active and Inactive Land Disposal Sites	Y	0	0	0
LDSI	Land Disposal Sites on Indian Reserves	Y	0	0	0
LUM	Lumber Related Operations - Certificates of Approval	Y	0	0	0
MINE	Canadian Mine Locations	Y	0	0	0
MMB	Metals, Minerals and Building Materials Operations - Certificates of Approval	Y	0	0	0
MNR	Mineral Occurrences	Y	0	0	0

Database	Name	Searched	Project Property	Boundary to 0.30km	Total
NATE	National Analysis of Trends in Emergencies System (NATES)	Y	0	0	0
NCST	PTMAA Non-Compliant Storage Tanks	Y	0	0	0
NDFT	National Defense & Canadian Forces Fuel Tanks	Y	0	0	0
NDSP	National Defense & Canadian Forces Spills	Y	0	0	0
NDWD	National Defence & Canadian Forces Waste Disposal Sites	Y	0	0	0
NEBI	National Energy Board Pipeline Incidents	Y	0	0	0
NEBW	National Energy Board Wells	Y	0	0	0
NEES	National Environmental Emergencies System (NEES)	Y	0	0	0
NPCB	National PCB Inventory	Y	0	0	0
NPRI	National Pollutant Release Inventory	Y	0	0	0
OAM	Operating and Abandoned Mines	Y	0	0	0
OGW	Oil and Gas Wells	Y	1	0	1
OIL & GAS FACS	Oil and Gas Facilities - ST102 & ST50	Y	0	0	0
ORP	Alberta Orphan Wells	Y	0	0	0
PAP	Canadian Pulp and Paper	Y	0	0	0
PCFT	Parks Canada Fuel Storage Tanks	Y	0	0	0
PCG	Petrochemical, Coal and Gas Operations - Certificates of Approval	Y	0	0	0
PES	Pesticide Register	Y	0	0	0
PITS	Conglomerate and Waste Management Facilities	Y	0	0	0
PSP	Alberta Private Sewage Disposal Permits	Y	0	0	0
PTAP	PTMAA Approved (Open) Permits	Y	0	0	0
REC	Hazardous Waste Receivers Summary	Y	0	0	0
RST	Retail Fuel Storage Tanks	Y	0	2	2
SCT	Scott's Manufacturing Directory	Y	0	1	1
SPEC	Special Operation Classifications - Certificates of Approval	Y	0	0	0
WDS	Inventory of Waste Disposal Sites	Y	0	0	0
WSTE	Wastewater Operations	Y	0	0	0
WWIS	Alberta Water Well Information Database	Y	0	36	36
	Total:		6	94	100

Executive Summary: Site Report Summary - Project Property

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev diff (m)	Page Number
1	AOGW		AB ***Licence NO:*** 0267711	-/0.0	0.94	29
1	OGWW	PANCANADIAN ENERGY CORPORATION	AB ***Licence ID:*** 267711	-/0.0	0.94	29
2	GEN	ENVIROSORT	TOWN OF STRATHMORE FIRE HALL 721 LAKESIDE BLVD STRATHMORE AB T1P 1B8	-/0.0	1.00	29
2	GEN	ENVIROSORT	TOWN OF STRATHMORE FIRE HALL 721 LAKESIDE BLVD STRATHMORE AB T1P 1B8	-/0.0	1.00	30
2	GEN	TOWN OF STRATHMORE	FIRE HALL 721 LAKESIDE BLVD. STRATHMORE AB T1P 1B8	-/0.0	1.00	30
3	AERW	EMBER ENTICE 6-14-24-25	AB ***Well ID:*** 00/06-14-024-25W4/0	-/0.0	0.92	31

Executive Summary: Site Report Summary - Surrounding Properties

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
4	ESAR	FORMER ESSO	Strathmore CENTRE ST CPR ROW AB	N/17.3	2.08	31
5	ESAR	HI HO GAS	Strathmore 3 PARKLANE DR AB	NNE/38.2	3.08	32
6	ESAR	LAR-DON RENTALS FORMER SERVICE STATION	Strathmore 3 AVE LAKESIDE BLVD AB	WNW/41.7	0.89	32
7	GEN	HAZCO	CHINOOK CREDIT UNION STRATHMORE 108 2 AVE AB	NW/65.5	4.00	34
8	EHS		755a Lakeside Boulevard Strathmore AB T1P	SSE/71.3	0.33	34
9	ESAR	Strathmore Auto Spa	Strathmore 755 Lakeside Boulevard AB	SSE/81.3	1.06	34
10	ESAR	HI HO GAS	Strathmore 3 PARKLANE DR AB	N/85.3	2.00	35
11	FST	STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE TOWN (P) AB	SSE/93.9	0.33	36
11	FST	STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE TOWN (P) AB	SSE/93.9	0.33	36
11	FST	STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE T1P 1B8 AB AB	SSE/93.9	0.33	36
11	FST	STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE TOWN (P) AB	SSE/93.9	0.33	37
12	FST	STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	N/94.2	2.00	37

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
12	FST	STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE T1P 1K2 AB AB	N/94.2	2.00	38
12	FST	STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	N/94.2	2.00	38
12	FST	STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	N/94.2	2.00	38
12	FST	STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	N/94.2	2.00	39
12	FST	STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	N/94.2	2.00	39
13	ESAR	STRATHMORE ANTIQUE AUTO PARTS	Strathmore 123 3 AVE AB	W/117.5	3.04	40
13	ESAR	STRATHMORE ANTIQUE AUTO PARTS	Strathmore 123 3 AVE AB	W/117.5	3.04	43
13	ESAR	PETRO-CANADA SERVICE STATION	Strathmore 123 3 AVE AB	W/117.5	3.04	45
13	ESAR	PETRO-CANADA SERVICE STATION	Strathmore 123 3 AVE AB	W/117.5	3.04	49
14	ESAR	LAWRENCE ANDERSON	Strathmore 10 THOMAS DR AB	N/167.1	3.00	51
15	EHS		400 Ranch Market Strathmore AB T1P 0B2	SSE/167.6	-3.00	51
16	ESAR	PETRO CANADA BULK KEYLOCK	Strathmore 100 RIDGE RD AB	S/170.9	0.97	52
17	WWIS		AB	N/172.3	3.00	53

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 11659589			
18	SCT	Strathmore Standard	136 Second Ave Strathmore AB T1P	WNW/172.4	6.06	55
19	WWIS		AB ***Well ID:*** 122607	WSW/174.0	3.46	55
19	WWIS		AB ***Well ID:*** 122609	WSW/174.0	3.46	59
19	WWIS		AB ***Well ID:*** 122603	WSW/174.0	3.46	63
19	WWIS		AB ***Well ID:*** 122708	WSW/174.0	3.46	66
19	WWIS		AB ***Well ID:*** 122712	WSW/174.0	3.46	70
19	WWIS		AB ***Well ID:*** 122702	WSW/174.0	3.46	75
19	WWIS		AB ***Well ID:*** 296531	WSW/174.0	3.46	79
19	WWIS		AB ***Well ID:*** 122710	WSW/174.0	3.46	81
19	WWIS		AB ***Well ID:*** 122698	WSW/174.0	3.46	86
19	WWIS		AB ***Well ID:*** 122606	WSW/174.0	3.46	93
19	WWIS		AB ***Well ID:*** 122605	WSW/174.0	3.46	98
19	WWIS		AB	WSW/174.0	3.46	103

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 122709			
19	WWIS		AB ***Well ID:*** 122611	WSW/174.0	3.46	107
19	WWIS		AB ***Well ID:*** 122610	WSW/174.0	3.46	112
19	WWIS		AB ***Well ID:*** 122701	WSW/174.0	3.46	117
19	WWIS		AB ***Well ID:*** 296530	WSW/174.0	3.46	123
19	WWIS		AB ***Well ID:*** 122711	WSW/174.0	3.46	125
19	WWIS		AB ***Well ID:*** 122707	WSW/174.0	3.46	129
19	WWIS		AB ***Well ID:*** 122604	WSW/174.0	3.46	132
19	WWIS		AB ***Well ID:*** 122705	WSW/174.0	3.46	138
19	WWIS		AB ***Well ID:*** 122699	WSW/174.0	3.46	141
19	WWIS		AB ***Well ID:*** 122704	WSW/174.0	3.46	145
19	WWIS		AB ***Well ID:*** 122713	WSW/174.0	3.46	150
19	WWIS		AB ***Well ID:*** 122706	WSW/174.0	3.46	155
19	WWIS		AB	WSW/174.0	3.46	159

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
			Well ID: 122700			
19	WWIS		AB ***Well ID:*** 122703	WSW/174.0	3.46	161
19	WWIS		AB ***Well ID:*** 292892	WSW/174.0	3.46	164
19	WWIS		AB ***Well ID:*** 122608	WSW/174.0	3.46	170
20	ESAR	LEROY-S RACE TRAC GAS	Strathmore 750 LAKESIDE BLVD AB	SSE/175.5	-0.31	175
21	EHS		400 Ranch Market Strathmore AB T1P 0B2	SSE/181.8	-0.88	175
22	FST	STRATHMORE PETRO-PASS 28447	100-RIDGE RD (HWY 1) STRATHMORE T1P 1B8 AB AB	S/182.4	0.97	176
23	FST	STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	S/182.5	0.97	176
23	FST	STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	S/182.5	0.97	176
23	FST	STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	S/182.5	0.97	177
23	FST	STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	S/182.5	0.97	177
23	FST	STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	S/182.5	0.97	177
24	FST	TELUS - STRATHMORE TELEPHONE EXCHANGE	2 STR. & 2 AVE. STRATHMORE TOWN (P) AB	WNW/185.2	6.06	178
24	FST	TELUS - STRATHMORE TELEPHONE EXCHANGE	2 STR. & 2 AVE. STRATHMORE TOWN (P) AB	WNW/185.2	6.06	178

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
25	WWIS		AB **Well ID:** 122621	NNE/190.9	5.03	179
25	WWIS		AB **Well ID:** 239592	NNE/190.9	5.03	181
25	WWIS		AB **Well ID:** 239588	NNE/190.9	5.03	186
25	WWIS		AB **Well ID:** 239593	NNE/190.9	5.03	191
25	WWIS		AB **Well ID:** 239590	NNE/190.9	5.03	196
25	WWIS		AB **Well ID:** 239589	NNE/190.9	5.03	202
25	WWIS		AB **Well ID:** 122620	NNE/190.9	5.03	207
26	RST	CALGARY CO-OPERATIVE ASSOCIATION LTD	320 2 ST STRATHMORE AB T2H 0M5	W/198.9	5.15	209
27	EHS		216 A 4 Ave Strathmore AB T1P1B9	W/200.8	4.00	209
28	ESAR	STRATHMORE ESSO & GENERAL STORE	Strathmore 200 RIDGE RD AB	SSW/212.4	2.00	210
29	ESAR	STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	WNW/223.9	6.76	210
30	FST	STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	SSW/224.4	2.00	211
30	FST	STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB	SSW/224.4	2.00	211

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
30	FST	STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	SSW/224.4	2.00	211
30	FST	STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	SSW/224.4	2.00	212
30	FST	STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	SSW/224.4	2.00	212
30	RST	STRATHMORE ESSO & GENERAL STORE	200 RIDGE RD STRATHMORE AB T1P 1B6	SSW/224.4	2.00	212
31	ESAR	STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	W/224.6	5.69	213
32	FST	D.C.'S MOHAWK	510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	S/225.3	1.00	213
32	FST	D.C.'S MOHAWK	510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	S/225.3	1.00	214
32	FST	D.C.'S MOHAWK	510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	S/225.3	1.00	214
33	EHS		216 4 Avenue Strathmore AB T1P 1B9	W/226.0	4.00	214
34	EHS		100 Ranchwood Lane Strathmore AB T1P 1M8	E/233.2	0.00	214
35	ESAR	AGT SWITCHING STATION	Strathmore 2 AVE 3 ST AB	WNW/234.9	6.76	215
36	ESAR	STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	W/235.1	5.69	215
37	EHS		Units 1 &2, 232 -3rd Avenue Strathmore AB	W/261.6	5.31	216

Map Key	DB	Company/Site Name	Address	Dir/Dist (m)	Elev Diff (m)	Page Number
38	ESAR	STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	W/272.2	6.02	216
39	EHS		220 Ridge Rd. Strathmore AB T1P 1B6	SSW/292.2	2.97	217
39	EHS		220 Ridge Road Strathmore AB T1P 1B6	SSW/292.2	2.97	217
39	GEN	GOLDER ASSOCIATES	220 RIDGE RD STRATHMORE AB T1P 1B6	SSW/292.2	2.97	217

Executive Summary: Summary By Data Source

AER OGW - Well Licenses

A search of the AER OGW database, dated Sep 30, 2018 has found that there are 1 AER OGW site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
EMBER ENTICE 6-14-24-25	AB ***Well ID:*** 00/06-14-024-25W4/0	0.0	3

AOGW - Alberta Oil and Gas Wells

A search of the AOGW database, dated 1883-Sept 2003* has found that there are 1 AOGW site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	AB ***Licence NO:*** 0267711	0.0	1

EHS - ERIS Historical Searches

A search of the EHS database, dated 1999-Jan 31, 2019 has found that there are 9 EHS site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	755a Lakeside Boulevard Strathmore AB T1P	71.3	8
	400 Ranch Market Strathmore AB T1P 0B2	167.6	15
	400 Ranch Market Strathmore AB T1P 0B2	181.8	21
	216 A 4 Ave Strathmore AB T1P1B9	200.8	27

Site	Address	Distance (m)	Map Key
	216 4 Avenue Strathmore AB T1P 1B9	226.0	33
	100 Ranchwood Lane Strathmore AB T1P 1M8	233.2	34
	Units 1 &2, 232 -3rd Avenue Strathmore AB	261.6	37
	220 Ridge Road Strathmore AB T1P 1B6	292.2	39
	220 Ridge Rd. Strathmore AB T1P 1B6	292.2	39

ESAR - Environmental Site Assessment Repository

A search of the ESAR database, dated 1960-Jun 2018 has found that there are 18 ESAR site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
FORMER ESSO	Strathmore CENTRE ST CPR ROW AB	17.3	4
HI HO GAS	Strathmore 3 PARKLANE DR AB	38.2	5
LAR-DON RENTALS FORMER SERVICE STATION	Strathmore 3 AVE LAKESIDE BLVD AB	41.7	6
Strathmore Auto Spa	Strathmore 755 Lakeside Boulevard AB	81.3	9

Site	Address	Distance (m)	Map Key
HI HO GAS	Strathmore 3 PARKLANE DR AB	85.3	10
PETRO-CANADA SERVICE STATION	Strathmore 123 3 AVE AB	117.5	13
PETRO-CANADA SERVICE STATION	Strathmore 123 3 AVE AB	117.5	13
STRATHMORE ANTIQUE AUTO PARTS	Strathmore 123 3 AVE AB	117.5	13
STRATHMORE ANTIQUE AUTO PARTS	Strathmore 123 3 AVE AB	117.5	13
LAWRENCE ANDERSON	Strathmore 10 THOMAS DR AB	167.1	14
PETRO CANADA BULK KEYLOCK	Strathmore 100 RIDGE RD AB	170.9	16
LEROY-S RACE TRAC GAS	Strathmore 750 LAKESIDE BLVD AB	175.5	20
STRATHMORE ESSO & GENERAL STORE	Strathmore 200 RIDGE RD AB	212.4	28
STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	223.9	29
STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	224.6	31
AGT SWITCHING STATION	Strathmore 2 AVE 3 ST AB	234.9	35

Site	Address	Distance (m)	Map Key
STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	235.1	36
STRATHMORE COOP GROCERY STORE	Strathmore 320 2 ST AB	272.2	38

FST - PTMAA Fuel Storage Tanks

A search of the FST database, dated 1985-Dec 2018 has found that there are 26 FST site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE TOWN (P) AB	93.9	11
STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE TOWN (P) AB	93.9	11
STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE T1P 1B8 AB AB	93.9	11
STRATHMORE GAS PLUS	759-LAKESIDE BLVD. STRATHMORE TOWN (P) AB	93.9	11
STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	94.2	12
STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	94.2	12
STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	94.2	12

Site	Address	Distance (m)	Map Key
STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	94.2	12
STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE TOWN (P) AB	94.2	12
STRATHMORE HI HO GAS & FOOD BAR	3-PARKLANE DR. STRATHMORE T1P 1K2 AB AB	94.2	12
STRATHMORE PETRO-PASS 28447	100-RIDGE RD (HWY 1) STRATHMORE T1P 1B8 AB AB	182.4	22
STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	182.5	23
STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	182.5	23
STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	182.5	23
STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	182.5	23
STRATHMORE PETRO-PASS 28447	100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	182.5	23
TELUS - STRATHMORE TELEPHONE EXCHANGE	2 STR. & 2 AVE. STRATHMORE TOWN (P) AB	185.2	24
TELUS - STRATHMORE TELEPHONE EXCHANGE	2 STR. & 2 AVE. STRATHMORE TOWN (P) AB	185.2	24
STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	224.4	30

Site	Address	Distance (m)	Map Key
STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB	224.4	30
STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	224.4	30
STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	224.4	30
STRATHMORE ESSO & GENERAL STORE	200-RIDGE RD. STRATHMORE TOWN (P) AB T1P 1B6	224.4	30
D.C.'S MOHAWK	510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	225.3	32
D.C.'S MOHAWK	510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	225.3	32
D.C.'S MOHAWK	510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	225.3	32

GEN - Waste Generators Summary

A search of the GEN database, dated 1993-Aug 2018 has found that there are 5 GEN site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
TOWN OF STRATHMORE	FIRE HALL 721 LAKESIDE BLVD. STRATHMORE AB T1P 1B8	0.0	2
ENVIROSORT	TOWN OF STRATHMORE FIRE HALL 721 LAKESIDE BLVD STRATHMORE AB T1P 1B8	0.0	2

Site	Address	Distance (m)	Map Key
ENVIROSORT	TOWN OF STRATHMORE FIRE HALL 721 LAKESIDE BLVD STRATHMORE AB T1P 1B8	0.0	2
HAZCO	CHINOOK CREDIT UNION STRATHMORE 108 2 AVE AB	65.5	7
GOLDER ASSOCIATES	220 RIDGE RD STRATHMORE AB T1P 1B6	292.2	39

OGW - Oil and Gas Wells

A search of the OGW database, dated 1988-Feb 28, 2019 has found that there are 1 OGW site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
PANCANADIAN ENERGY CORPORATION	AB ***Licence ID:*** 267711	0.0	1

RST - Retail Fuel Storage Tanks

A search of the RST database, dated 1999-Jan 31, 2019 has found that there are 2 RST site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
CALGARY CO-OPERATIVE ASSOCIATION LTD	320 2 ST STRATHMORE AB T2H 0M5	198.9	26
STRATHMORE ESSO & GENERAL STORE	200 RIDGE RD STRATHMORE AB T1P 1B6	224.4	30

SCT - Scott's Manufacturing Directory

A search of the SCT database, dated 1992-Mar 2011* has found that there are 1 SCT site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
Strathmore Standard	136 Second Ave Strathmore AB T1P	172.4	18

WWIS - Alberta Water Well Information Database

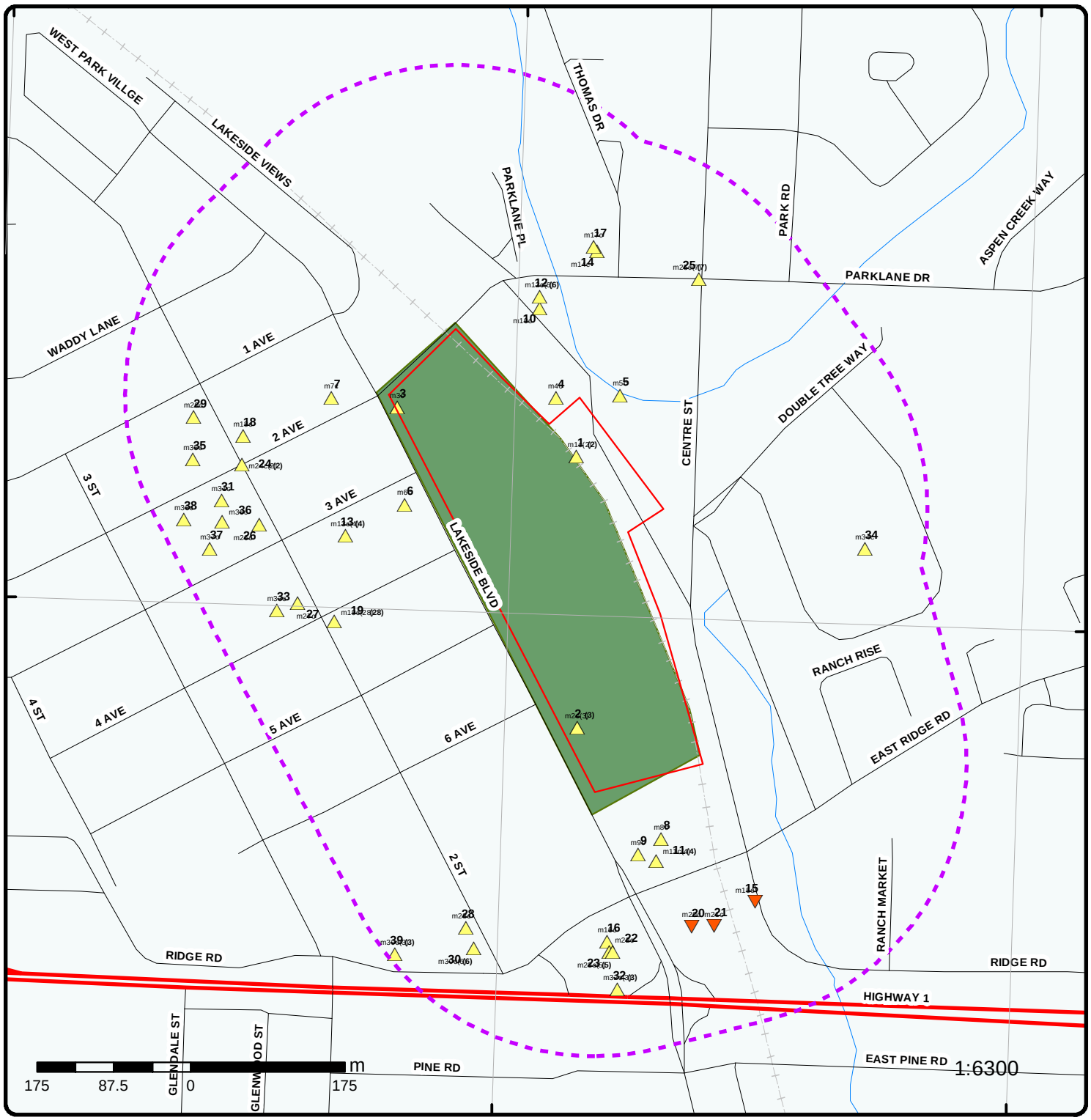
A search of the WWIS database, dated 1880-Oct 31, 2018 has found that there are 36 WWIS site(s) within approximately 0.30 kilometers of the project property.

Site	Address	Distance (m)	Map Key
	AB ***Well ID:*** 11659589	172.3	17
	AB ***Well ID:*** 122710	174.0	19
	AB ***Well ID:*** 296531	174.0	19
	AB ***Well ID:*** 122606	174.0	19
	AB ***Well ID:*** 122605	174.0	19
	AB ***Well ID:*** 122709	174.0	19
	AB ***Well ID:*** 122611	174.0	19
	AB ***Well ID:*** 122610	174.0	19
	AB	174.0	19

Site	Address	Distance (m)	Map Key
	Well ID: 122701		
	AB ***Well ID:*** 296530	174.0	19
	AB ***Well ID:*** 122711	174.0	19
	AB ***Well ID:*** 122707	174.0	19
	AB ***Well ID:*** 122604	174.0	19
	AB ***Well ID:*** 122705	174.0	19
	AB ***Well ID:*** 122699	174.0	19
	AB ***Well ID:*** 122704	174.0	19
	AB ***Well ID:*** 122713	174.0	19
	AB ***Well ID:*** 122706	174.0	19
	AB ***Well ID:*** 122700	174.0	19
	AB ***Well ID:*** 122703	174.0	19

Site	Address	Distance (m)	Map Key
	AB ***Well ID:*** 292892	174.0	19
	AB ***Well ID:*** 122608	174.0	19
	AB ***Well ID:*** 122702	174.0	19
	AB ***Well ID:*** 122712	174.0	19
	AB ***Well ID:*** 122708	174.0	19
	AB ***Well ID:*** 122603	174.0	19
	AB ***Well ID:*** 122609	174.0	19
	AB ***Well ID:*** 122607	174.0	19
	AB ***Well ID:*** 122698	174.0	19
	AB ***Well ID:*** 122621	190.9	25
	AB ***Well ID:*** 239592	190.9	25
	AB	190.9	25

Site	Address	Distance (m)	Map Key
	Well ID: 239588		
	AB	190.9	25
	Well ID: 239593		
	AB	190.9	25
	Well ID: 239590		
	AB	190.9	25
	Well ID: 239589		
	AB	190.9	25
	Well ID: 122620		



Map : 0.3 Kilometer Radius

Order No: 20190312051

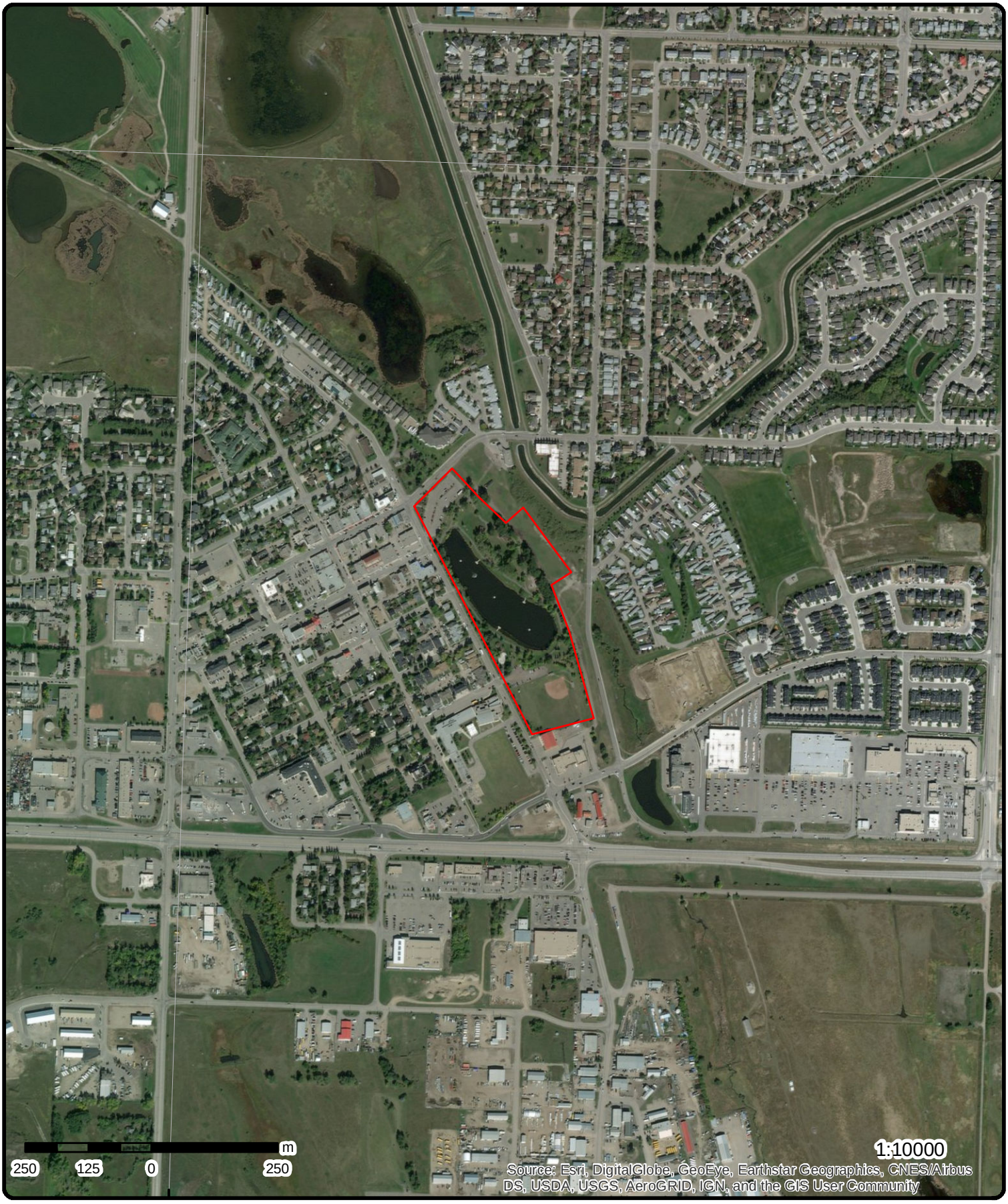
Address: Kinsemen Park, Strathmore, AB

ERIS
ENVIRONMENTAL RISK INFORMATION SERVICES

- Project Property
- Buffer Outline
- Eris Sites with Higher Elevation
- Eris Sites with Same Elevation
- Eris Sites with Lower Elevation
- Eris Sites with Unknown Elevation
- Expressway
- Principal Highway
- Secondary Highway
- Major Road
- Local road
- Trail
- Proposed Road
- Ferry Route/Ice Road
- Industrial and Resource - Regions
- Main Line
- Sidetrack
- Transit Line
- Abandoned Line
- National Park
- Provincial or Territorial Park
- Other Park
- Golf Course or Driving Range
- Park or Sports Field
- Other Recreation Area

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Aerial (2014)

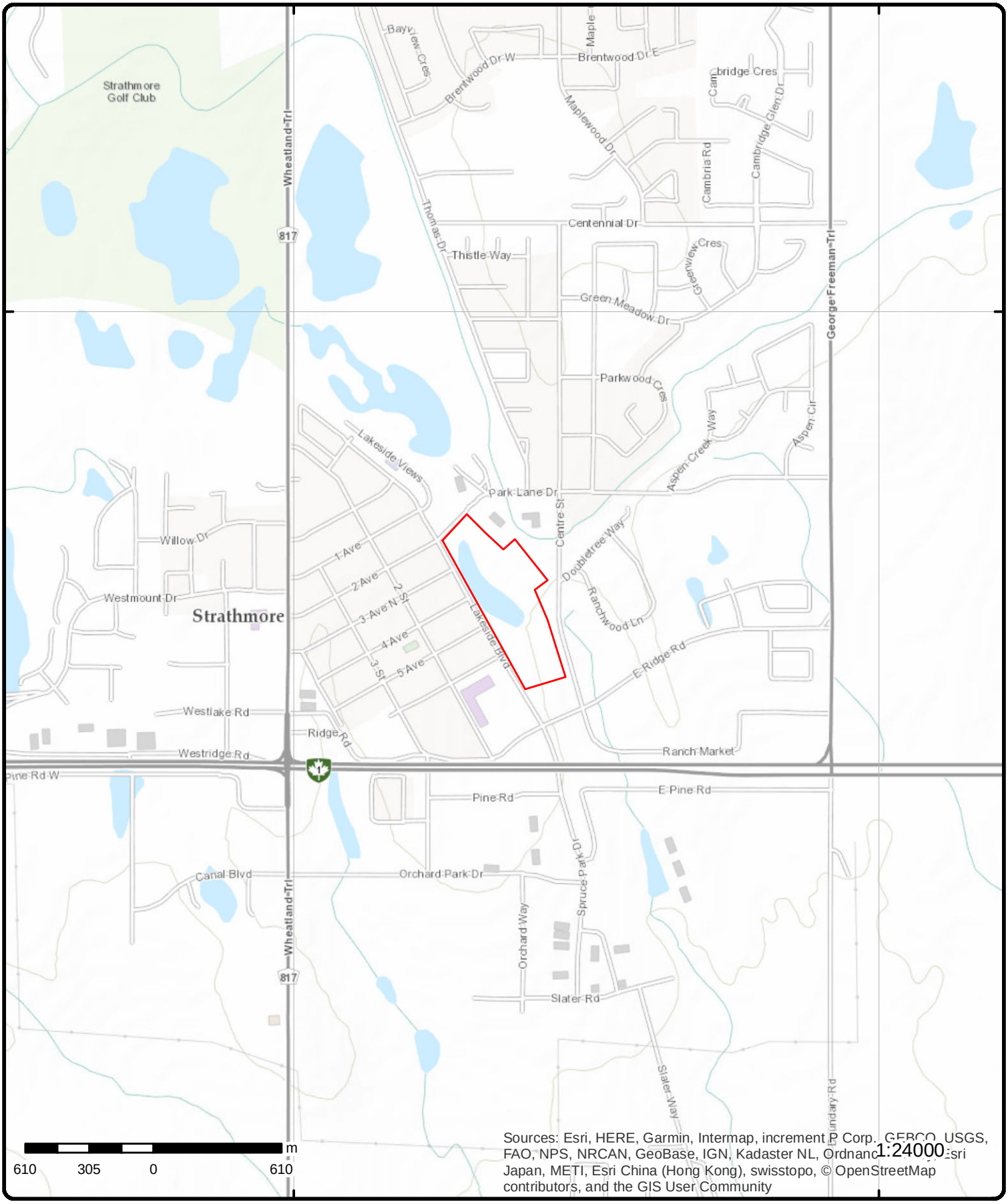
Address: Kinsemen Park, Strathmore, AB

Source: ESRI World Imagery

Order No: 20190312051

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

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Topographic Map

Address: Kinsemen Park, Strathmore, AB

Source: ESRI World Topographic Map

Order No: 20190312051

ERIS ENVIRONMENTAL RISK INFORMATION SERVICES

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Detail Report

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	1 of 2	-/0.0	971.9 / 0.94	AB	AOGW

Licence NO: 0267711
Licence Date: 20020214
Mode: FLOWING
Well Status Date: 20030828
Total Depth (m): 1742.00
Final Drill Date: 20020301
Well Name: PCE PCR STRATHMORE 6-14-24-25
Licencee Address: Box 2850, 150 - 9 Avenue SW Calgary, AB T2P 2S5

ATS Coordinates: 6-14-24-25-4
Structure:
Type:
Fluid: GAS
Licencee: Encana Corporation

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
1	2 of 2	-/0.0	971.9 / 0.94	PANCANADIAN ENERGY CORPORATION AB	OGWW

Licence ID: 267711
Field ID: STRATHMORE
Area ID: STRATHMORE
Rig ID: 159
Rig Released: 02/03/01
Well Name: PCE PCR STRATHMORE 6-14-24-25
Status Code:
Well Status: GAS
Class Code:
Well Class: DEVELOPMENT WELL
Well Type Code:
Well Type: DIRECTIONAL
Status Date: 03/09/16
Drill Date: 02/02/26
Licence Date: 02/02/14
Well Year:
Surveyor:
Contractor: PRECISION DRILLING, A DIVISION OF PLP

Ground Elevation: 966.2
Total Depth (ft): 1742
LSD: 6
Section: 14
Township: 24
Range: 25
Meridian: 4
Latitude:
Longitude:
Projected Zone: MILK RIVER
Quarter:
Unit:
Block:
Quad:
Map:
Sheet:
Province:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
2	1 of 3	-/0.0	972.0 / 1.00	ENVIROSORT TOWN OF STRATHMORE FIRE HALL 721 LAKESIDE BLVD STRATHMORE AB T1P 1B8	GEN

Approval No:
Record ID: 801
Approval Year: 2003

DLS:
Phone:
Contact:

--Details--
Material Code: 2.10
Material Description: Flammable Gas

Material Code: 3.00
Material Description: Flammable Liquids

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Material Code: 4.10
Material Description: Readily Ignitable

Material Code: 6.10
Material Description: Poisonous by Inhaling/Contact/Ingestion

Material Code: 8.00
Material Description: Corrosive Substances

Material Code: 9.00
Material Description: Miscellaneous Dangerous Goods

---

2 **2 of 3** **-/0.0** **972.0 / 1.00** **ENVIROSORT**
TOWN OF STRATHMORE FIRE HALL 721 LAKESIDE BLVD
STRATHMORE AB T1P 1B8 **GEN**

Approval No:
Record ID: 517
Approval Year: 2002
DLS:
Phone:
Contact:

--Details--
Material Code: 2.40
Material Description: Corrosive Gas

Material Code: 3.00
Material Description: Flammable Liquids

Material Code: 6.10
Material Description: Poisonous by Inhaling/Contact/Ingestion

Material Code: 8.00
Material Description: Corrosive Substances

Material Code: 9.30
Material Description: Unclassified Dangerous Waste

---

2 **3 of 3** **-/0.0** **972.0 / 1.00** **TOWN OF STRATHMORE**
FIRE HALL 721 LAKESIDE BLVD.
STRATHMORE AB T1P 1B8 **GEN**

Approval No:
Record ID: 1630
Approval Year: 2001
DLS:
Phone:
Contact:

--Details--
Material Code: 2.4
Material Description: Corrosive Gas

Material Code: 3
Material Description: Flammable Liquids

Material Code: 6.1
Material Description: Poisonous by Inhaling/Contact/Ingestion

Material Code: 8
Material Description: Corrosive Substances

Material Code: 9.3
Material Description: Unclassified Dangerous Waste

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

3 | **1 of 1** | **-/0.0** | **971.9 / 0.92** | **EMBER ENTICE 6-14-24-25** | **AERW**

AB

Well ID:	00/06-14-024-25W4/0	**Agent:**	
Well Status:	0202000000	**Operator:**	
Keylist:	0244251406000	**Field:**	0339
License No:	0267711	**Pool:**	0950160
Licence Status:	Issued	**OS Area:**	
Licence Date:	2002-02-14	**OS Dep:**	0000000
Stat Date:	2014-08-19	**Max Tvd:**	990.2
Well Fluid:	GAS	**Ground Elevation:**	966.2
Well Mode:	ABD	**Surf Loc:**	
Well Type:	N/A	**EDCT:**	
Well Structure:	N/A	**Rating Ev:**	
Scheme Type:		**Op Surv Prov:**	
Scheme Subt:		**FD Date:**	2002-03-01
Bttm/Surface Hole:	Bottom Holes	**Total Dep:**	1742
Fluid Short Desc:	GAS	**KBE:**	970
Mode Short Desc:	ABANDONED	**Latitude:**	51.043735
Type Short Desc:	Not Applicable	**Longitude:**	-113.393518
Update:			

Structure Short Description: Not Applicable
Licensee: Ember Resources Inc.

4 | **1 of 1** | **N/17.3** | **973.1 / 2.08** | **FORMER ESSO**
Strathmore CENTRE ST CPR ROW
AB | **ESAR**

ESA ID: 1339003
ESRD File: 00144474
File Classification: PST
Documents in File: 1
Name: FORMER ESSO
10tm Point Coordinate: 112751,5653673
LLD: 9411772;3
LINC: 0026145970
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1339003
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00144474

--Details--
Doc Name: FORMER ESSO
Doc Type: pdf
Doc Size (Mb): 0.41
Doc Date: 3/16/2006
Doc Desc: CORRESPONDENCE

Doc Name: FORMER ESSO
Doc Type: pdf
Doc Size (Mb): 0.28
Doc Date: 11/1/1995
Doc Desc: EXCAVATION OF PETROLEUM IMPACTED SOILS

Doc Name: FORMER ESSO
Doc Type: pdf
Doc Size (Mb): 2.17
Doc Date: 2/1/1994
Doc Desc: REVIEW OF PREVIOUS ENVIRONMENTAL SITE ASSESSMENTS

Doc Name: FORMER ESSO

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Doc Type: pdf
Doc Size (Mb): 0.24
Doc Date: 7/1/1996
Doc Desc: MONITORING AND SOIL SAMPLING ACTIVITIES

Doc Name: FORMER ESSO
Doc Type: pdf
Doc Size (Mb): 1.02
Doc Date: 4/1/1994
Doc Desc: SUPPLEMENTAL INVESTIGATION PROGRAM

Doc Name: FORMER ESSO
Doc Type: pdf
Doc Size (Mb): 1.23
Doc Date: 8/1/1991
Doc Desc: INVESTIGATION AND EVALUATION OF SUBSURFACE CONDITIONS

Doc Name: FORMER ESSO
Doc Type: pdf
Doc Size (Mb): 0.20
Doc Date: 3/18/2006
Doc Desc: CORRESPONDENCE_3

5	1 of 1	NNE/38.2	974.1 / 3.08	HI HO GAS Strathmore 3 PARKLANE DR AB	ESAR

ESA ID: 1340258
ESRD File: 00197460
File Classification: PST
Documents in File: 2
Name: HI HO GAS
10tm Point Coordinate: 112824,5653680
LLD: IRR67;RW;24
LINC: 0019208248 0019208248
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1340258
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00197460

--Details--
Doc Name: HI HO GAS
Doc Type: pdf
Doc Size (Mb): 0.13
Doc Date: 2/8/2006
Doc Desc: CORRESPONDENCE

Doc Name: HI HO GAS
Doc Type: txt
Doc Size (Mb): 0.00
Doc Date: 5/14/2018
Doc Desc: 2000-08-09 Cover Email for Phase II ESA

Doc Name: HI HO GAS
Doc Type: pdf
Doc Size (Mb): 1.27
Doc Date: 5/14/2018
Doc Desc: 2000-09-01 TROY ENVIRONMENTAL - Phase II ESA

6	1 of 1	WNW/41.7	971.9 / 0.89	LAR-DON RENTALS FORMER SERVICE STATION Strathmore 3 AVE LAKESIDE BLVD AB	ESAR

ESA ID: 1339016
ESRD File: 00144470
File Classification: PST
Documents in File: 1
Name: LAR-DON RENTALS FORMER SERVICE STATION
10tm Point Coordinate: 112586,5653543
LLD: 9813438;3;40
LINC: 0027757590
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1339016
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00144470

--Details--
Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.89
Doc Date: 3/1/2003
Doc Desc: REMEDIAL PLAN

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 4.08
Doc Date: 4/1/2004
Doc Desc: ADDITIONAL PHASE II ENVIRONMENTAL ASSESSMENT

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.13
Doc Date: 10/1/2002
Doc Desc: ADDITIONAL SUBSURFACE DELINEATION

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.12
Doc Date: 3/7/2006
Doc Desc: CORRESPONDENCE

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.58
Doc Date: 3/22/2006
Doc Desc: CORRESPONDENCE_2

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.58
Doc Date: 9/1/1998
Doc Desc: ENVIRONMENTAL ASSESSMENT-PHASE III

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 1.50
Doc Date: 9/1/1998
Doc Desc: PHASE III ENVIRONMENTAL ASSESSMENT

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.06
Doc Date: 7/1/1998
Doc Desc: TEST HOLE RESULT

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.94
Doc Date: 7/1/1998

Doc Desc: PHASE II ENVIRONMENTAL ASSESSMENT

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 2.33
Doc Date: 4/1/2004
Doc Desc: REMEDIAL - RISK MANAGEMENT

Doc Name: LAR-DON RENTALS FORMER SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 5.79
Doc Date: 6/1/1999
Doc Desc: UNDERGROUND STORAGE TANK REMEDIATION

---

7 | **1 of 1** | **NW/65.5** | **975.0 / 4.00** | **HAZCO**
CHINOOK CREDIT UNION STRATHMORE 108 2 AVE
AB | **GEN**

Approval No:
Record ID: 1664
Approval Year: 2005
DLS:
Phone:
Contact:

--Details--
Material Code: 8.00
Material Description: Corrosive Substances

Material Code: 9.10
Material Description: Unclassified Dangerous Substance/Product

---

8 | **1 of 1** | **SSE/71.3** | **971.3 / 0.33** | **755a Lakeside Boulevard**
Strathmore AB T1P | **EHS**

Order No: 20190201073
Status: C
Report Type: Standard Report
Report Date: 07-FEB-19
Date Received: 01-FEB-19
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:
Nearest Intersection:
Municipality:
Client Prov/State: AB
Search Radius (km): .25
X: -113.389019
Y: 51.039404

---

9 | **1 of 1** | **SSE/81.3** | **972.1 / 1.06** | **Strathmore Auto Spa**
Strathmore 755 Lakeside Boulevard
AB | **ESAR**

ESA ID: 2164782
ESRD File: SCD01917
File Classification: SCD
Documents in File: 1
Name: Strathmore Auto Spa
10tm Point Coordinate: 112873,5653160
LLD: 0512059;31;2
LINC: 0031098361
Map Link:
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD01917

--Details--
Doc Name: Strathmore Auto Spa

Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 10/17/2007
Doc Desc: EMAIL response from AENV re Testing Requirements

Doc Name: Strathmore Auto Spa
Doc Type: pdf
Doc Size (Mb): 0.07
Doc Date: 11/15/2007
Doc Desc: EMAIL response 3 from AENV re Testing Requirements

Doc Name: Strathmore Auto Spa
Doc Type: pdf
Doc Size (Mb): 0.05
Doc Date: 10/16/2007
Doc Desc: EMAIL response from AENV re Analytical Tests

Doc Name: Strathmore Auto Spa
Doc Type: pdf
Doc Size (Mb): 0.07
Doc Date: 11/15/2007
Doc Desc: EMAIL response from Auto Spa

Doc Name: Strathmore Auto Spa
Doc Type: pdf
Doc Size (Mb): 0.05
Doc Date: 10/17/2007
Doc Desc: EMAIL question re Testing Requirements

Doc Name: Strathmore Auto Spa
Doc Type: pdf
Doc Size (Mb): 0.06
Doc Date: 10/18/2007
Doc Desc: EMAIL response 2 from AENV re Testing Requirements

Doc Name: Strathmore Auto Spa
Doc Type: pdf
Doc Size (Mb): 0.03
Doc Date: 10/9/2007
Doc Desc: EMAIL question from Strathmore Auto Spa re Analytical Tests

---

10	1 of 1	N/85.3	973.0 / 2.00	HI HO GAS Strathmore 3 PARKLANE DR AB	ESAR

ESA ID: 1340258
ESRD File: 00197460
File Classification: PST
Documents in File: 2
Name: HI HO GAS
10tm Point Coordinate: 112727,5653774
LLD: IRR67;RW;24
LINC: 0019208248 0019208248
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1340258
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00197460

--Details--
Doc Name: HI HO GAS
Doc Type: txt
Doc Size (Mb): 0.00
Doc Date: 5/14/2018
Doc Desc: 2000-08-09 Cover Email for Phase II ESA

Doc Name: HI HO GAS
Doc Type: pdf
Doc Size (Mb): 1.27
Doc Date: 5/14/2018
Doc Desc: 2000-09-01 TROY ENVIRONMENTAL - Phase II ESA

Doc Name: HI HO GAS
Doc Type: pdf
Doc Size (Mb): 0.13
Doc Date: 2/8/2006
Doc Desc: CORRESPONDENCE

---

11 **1 of 4** **SSE/93.9** **971.3 / 0.33** **STRATHMORE GAS PLUS** **FST**
759-LAKESIDE BLVD.
STRATHMORE TOWN (P) AB

Site No:	3840	**Dt Form Rcvd:**	2011/05/09
Tank No:	2	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	31
Contents:	Gasoline	**Plan:**	7260JK
Other Contents:		**Municipality:**	
Capacity:	22,700 litres (5,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			

Spill Containment: Liquid - Tight Fill Box, Liquid / Vapour Tight Couplings On Fill Pipes
Tank Status by Site Name:

---

11 **2 of 4** **SSE/93.9** **971.3 / 0.33** **STRATHMORE GAS PLUS** **FST**
759-LAKESIDE BLVD.
STRATHMORE TOWN (P) AB

Site No:	3840	**Dt Form Rcvd:**	2011/05/09
Tank No:	1	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	31
Contents:	Gasoline	**Plan:**	7260JK
Other Contents:		**Municipality:**	
Capacity:	22,700 litres (5,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			

Spill Containment: Liquid - Tight Fill Box, Liquid / Vapour Tight Couplings On Fill Pipes
Tank Status by Site Name:

---

11 **3 of 4** **SSE/93.9** **971.3 / 0.33** **STRATHMORE GAS PLUS** **FST**
759-LAKESIDE BLVD. STRATHMORE T1P 1B8
AB
AB

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Site No:	3840	**Dt Form Rcvd:**	
Tank No:		**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:		**Located 200m:**	
Tank Status:		**Located 500m:**	
Site Status:	Active	**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:		**Plan:**	
Other Contents:		**Municipality:**	
Capacity:		**Postal:**	
Other Capacity:		**Facility 1:**	
UST Secondary:		**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:		**Facility 4:**	
LLD:	Lot Block 31 Plan 7260JK		
Spill Containment:			
Tank Status by Site Name:			

Active Tank Sites

UST/AST: 3 / 0

---

11 | ***4 of 4*** | ***SSE/93.9*** | ***971.3 / 0.33*** | ***STRATHMORE GAS PLUS***
759-LAKESIDE BLVD.
STRATHMORE TOWN (P) AB | ***FST***

Site No:	3840	**Dt Form Rcvd:**	2011/05/09
Tank No:	3	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	31
Contents:	Diesel	**Plan:**	7260JK
Other Contents:		**Municipality:**	
Capacity:	22,700 litres (5,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:	Liquid - Tight Fill Box, Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

---

12 | ***1 of 6*** | ***N/94.2*** | ***973.0 / 2.00*** | ***STRATHMORE HI HO GAS & FOOD BAR***
3-PARKLANE DR.
STRATHMORE TOWN (P) AB | ***FST***

Site No:	2298	**Dt Form Rcvd:**	2006/07/11
Tank No:	5	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Underground	**Located 200m:**	YES
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	25,000 litres	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	None	**Facility 2:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

AST Secondary: ***Facility 3:***
Overfill Prevention: Liquid - Tight Fill Box ***Facility 4:***
LLD:
Spill Containment: Liquid / Vapour Tight Couplings On Fill Pipes, Liquid - Tight Fill Box
Tank Status by Site Name:

---

12 ***2 of 6*** ***N/94.2*** ***973.0 / 2.00*** ***STRATHMORE HI HO GAS & FOOD BAR 3-PARKLANE DR. STRATHMORE T1P 1K2 AB AB*** ***FST***

Site No: 2298 ***Dt Form Rcvd:***
Tank No: ***Date Removed:***
No of Tanks: ***Removal Reason:***
Tank Type: ***Located 200m:***
Tank Status: ***Located 500m:***
Site Status: Active ***DLS Coord:***
Date Last Used: ***Lot:***
UST/AST: ***Block:***
Contents: ***Plan:***
Other Contents: ***Municipality:***
Capacity: ***Postal:***
Other Capacity: ***Facility 1:***
UST Secondary: ***Facility 2:***
AST Secondary: ***Facility 3:***
Overfill Prevention: ***Facility 4:***
LLD:
Spill Containment:
Tank Status by Site Name:

Active Tank Sites

UST/AST: 5 / 0

---

12 ***3 of 6*** ***N/94.2*** ***973.0 / 2.00*** ***STRATHMORE HI HO GAS & FOOD BAR 3-PARKLANE DR. STRATHMORE TOWN (P) AB*** ***FST***

Site No: 2298 ***Dt Form Rcvd:*** 2006/07/11
Tank No: 2 ***Date Removed:***
No of Tanks: ***Removal Reason:***
Tank Type: Underground ***Located 200m:*** YES
Tank Status: Currently in service ***Located 500m:*** NO
Site Status: ***DLS Coord:***
Date Last Used: ***Lot:***
UST/AST: ***Block:***
Contents: Gasoline ***Plan:***
Other Contents: ***Municipality:***
Capacity: 25,000 litres ***Postal:***
Other Capacity: ***Facility 1:*** Retail
UST Secondary: None ***Facility 2:***
AST Secondary: ***Facility 3:***
Overfill Prevention: Liquid - Tight Fill Box ***Facility 4:***
LLD:
Spill Containment: Liquid / Vapour Tight Couplings On Fill Pipes, Liquid - Tight Fill Box
Tank Status by Site Name:

---

12 ***4 of 6*** ***N/94.2*** ***973.0 / 2.00*** ***STRATHMORE HI HO GAS & FOOD BAR 3-PARKLANE DR. STRATHMORE TOWN (P) AB*** ***FST***

Site No: 2298 ***Dt Form Rcvd:*** 2006/07/11
Tank No: 4 ***Date Removed:***
No of Tanks: ***Removal Reason:***

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Tank Type:	Underground	**Located 200m:**	YES
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	25,000 litres	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	None	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:	Liquid / Vapour Tight Couplings On Fill Pipes, Liquid - Tight Fill Box		
Tank Status by Site Name:			

12	5 of 6	N/94.2	973.0 / 2.00	**STRATHMORE HI HO GAS & FOOD BAR** **3-PARKLANE DR.** **STRATHMORE TOWN (P) AB**	FST

Site No:	2298	**Dt Form Rcvd:**	2006/07/11
Tank No:	3	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Underground	**Located 200m:**	YES
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	25,000 litres	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	None	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:	Liquid / Vapour Tight Couplings On Fill Pipes, Liquid - Tight Fill Box		
Tank Status by Site Name:			

12	6 of 6	N/94.2	973.0 / 2.00	**STRATHMORE HI HO GAS & FOOD BAR** **3-PARKLANE DR.** **STRATHMORE TOWN (P) AB**	FST

Site No:	2298	**Dt Form Rcvd:**	2006/07/11
Tank No:	1	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Underground	**Located 200m:**	YES
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	13,600 litres (3,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	None	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:	Liquid / Vapour Tight Couplings On Fill Pipes, Liquid - Tight Fill Box		
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
13	1 of 4	W/117.5	974.0 / 3.04	STRATHMORE ANTIQUE AUTO PARTS Strathmore 123 3 AVE AB	ESAR

ESA ID: 1340624
ESRD File: SCD01351
File Classification: SCD
Documents in File: 1
Name: PETRO-CANADA SERVICE STATION
10tm Point Coordinate: 112521,5653504
LLD: 4810N;3;31-33
LINC: 0019384859
Map Link:
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD01351

--Details--

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 5/8/2014
Doc Desc: Email Record of Site Condition & Supplementary Phase II ESA Report 123 3 Avenue Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 5.26
Doc Date: 5/8/2014
Doc Desc: Supplementary Phase II Environmental Site Assessment for 123 3 Avenue Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.22
Doc Date: 5/13/2010
Doc Desc: Record of Site Condition Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 1.53
Doc Date: 10/20/2009
Doc Desc: EMAIL RE AMA SITE 9281 REPORT AND RSC

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.95
Doc Date: 10/19/2009
Doc Desc: FIRST POST-INJECTION OF GROUNDWATER MONITORING

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: txt
Doc Size (Mb): 0.00
Doc Date: 12/1/2016
Doc Desc: Email Cover Letter for RMP and ROSC for 123 - 3 Avenue Strathmore.txt

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.42
Doc Date: 5/13/2010
Doc Desc: Groundwater Monitoring Report Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.24
Doc Date: 11/20/2009
Doc Desc: LETTER FROM AMA RE COST PROPOSAL FOR RISK MANAGEMENT MONITORING

Doc Name: PETRO-CANADA SERVICE STATION

Doc Type: msg
Doc Size (Mb): 1.09
Doc Date: 10/19/2009
Doc Desc: EMAIL RE SUBMISSION OF GW MONITORING REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 6/22/2009
Doc Desc: LETTER RE CHEMICAL INJECTION REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.60
Doc Date: 6/11/2009
Doc Desc: SITE REMEDIATION PROGRAM ON-SITE EXCAVATION_2

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 1.27
Doc Date: 2/27/2009
Doc Desc: EMAIL RE REMEDIAL ACTION PLAN DOCUMENTS

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 4/12/2016
Doc Desc: Email re 2014 investigation results

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 3.34
Doc Date: 5/12/2015
Doc Desc: Risk Management Plan 2015

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.34
Doc Date: 1/4/2010
Doc Desc: RECORD OF SITE CONDITION_4

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.50
Doc Date: 12/31/2009
Doc Desc: GROUNDWATER MONITORING PROGRAM

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.03
Doc Date: 6/24/2009
Doc Desc: LETTER FROM AMA RE CHEMICAL INJECTION REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.06
Doc Date: 1/14/2009
Doc Desc: LETTER FROM AMA RE STAGED REMEDIATION PLAN

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 2.24
Doc Date: 9/8/2008
Doc Desc: 2nd PHASE III ESA

Doc Name: PETRO-CANADA SERVICE STATION

Doc Type: pdf
Doc Size (Mb): 0.99
Doc Date: 6/11/2009
Doc Desc: SITE REMEDIATION PROGRAM ON-SITE EXCAVATION

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.03
Doc Date: 2/18/2009
Doc Desc: EMAIL RE ORC PROPOSAL

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 1.40
Doc Date: 6/18/2009
Doc Desc: BASELINE STUDY FOR ORC ADVANCED INJECTION

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.58
Doc Date: 11/30/2016
Doc Desc: Record of Site Condition Form Nov 30, 2016.pdf

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.06
Doc Date: 2/2/2010
Doc Desc: LETTER FROM AMA COST PROPOSAL FOR RISK MANAGEMENT MONITORING

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.50
Doc Date: 10/19/2009
Doc Desc: RECORD OF SITE CONDITION_3

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.42
Doc Date: 5/8/2014
Doc Desc: Record of Site Condition for Vacant Land 123 3 AVE Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.03
Doc Date: 5/14/2010
Doc Desc: Email Reports Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.02
Doc Date: 7/10/2009
Doc Desc: EMAIL FROM AENV RE FILE REVIEW STATUS

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.47
Doc Date: 2/19/2009
Doc Desc: APPLICATION OF ORC PROPOSAL

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.26
Doc Date: 6/22/2009
Doc Desc: RECORD OF SITE CONDITION_2

Doc Name: PETRO-CANADA SERVICE STATION

Doc Type: pdf
Doc Size (Mb): 0.25
Doc Date: 6/22/2009
Doc Desc: REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.03
Doc Date: 6/22/2009
Doc Desc: EMAIL RE ATTACHED REPORTS AND RSC

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 6/22/2009
Doc Desc: EMAIL RE REMEDIATION REPORTS

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 1/7/2009
Doc Desc: LETTER OF CONSENT FOR OFF SITE REMEDIATION

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.26
Doc Date: 11/27/2008
Doc Desc: RECORD OF SITE CONDITION

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 3.36
Doc Date: 6/13/2008
Doc Desc: PHASE III ESA USING OPTIONAL TIER II CRITERIA

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
13	2 of 4	W/117.5	974.0 / 3.04	STRATHMORE ANTIQUE AUTO PARTS Strathmore 123 3 AVE AB	ESAR

ESA ID: 1345158
ESRD File: SCD01351
File Classification: SCD
Documents in File: 1
Name: STRATHMORE ANTIQUE AUTO PARTS
10tm Point Coordinate: 112521,5653504
LLD: 4810N;3;31-33
LINC: 0019384859
Map Link:
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD01351

--Details--
Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 5/9/2006
Doc Desc: CORRESPONDENCE_5

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: msg
Doc Size (Mb): 3.73
Doc Date: 7/20/2008
Doc Desc: Transmittal E-mail

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	txt
Doc Size (Mb):	0.00
Doc Date:	10/5/2017
Doc Desc:	Email to Jan for status of Report for RMP

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	txt
Doc Size (Mb):	0.00
Doc Date:	12/1/2016
Doc Desc:	Email Cover Letter for RMP and ROSC for 123 - 3 Avenue Strathmore.txt

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.58
Doc Date:	11/30/2016
Doc Desc:	Record of Site Condition Form Nov 30, 2016.pdf

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.86
Doc Date:	11/15/2004
Doc Desc:	LIMITED LEVEL II ESA

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	3.34
Doc Date:	5/12/2015
Doc Desc:	Risk Management Plan 2015

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.29
Doc Date:	6/13/2008
Doc Desc:	RECORD OF SITE CONDITION 123 3 AVE STRATHMORE

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	3.37
Doc Date:	6/13/2008
Doc Desc:	PHASE III ESA 123 3 AVE STRATHMORE

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	3.37
Doc Date:	6/13/2008
Doc Desc:	Phase III ESA

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	2.27
Doc Date:	9/8/2008
Doc Desc:	Phase III ESA_3

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	doc
Doc Size (Mb):	0.16
Doc Date:	7/22/2008
Doc Desc:	AENV Response to Phase III ESA

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.29
Doc Date:	6/13/2008
Doc Desc:	Record of Site Condition

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.04
Doc Date:	6/4/2008
Doc Desc:	ESA

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.25
Doc Date:	5/8/2006
Doc Desc:	CONFIRMATORY TESTING

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.14
Doc Date:	7/31/2008
Doc Desc:	Phase III ESA_2

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	msg
Doc Size (Mb):	0.02
Doc Date:	7/20/2008
Doc Desc:	E MAIL RE PHASE III ESA AND RECORD OF SITE CONDITION 123 3 AVE STRATHMORE

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.14
Doc Date:	9/28/2005
Doc Desc:	CORRESPONDENCE_4

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.31
Doc Date:	9/9/2008
Doc Desc:	Updated RSC

Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.04
Doc Date:	1/24/2005
Doc Desc:	CORRESPONDENCE_2

---

13 | ***3 of 4*** | ***W/117.5*** | ***974.0 / 3.04*** | ***PETRO-CANADA SERVICE STATION***
Strathmore 123 3 AVE
AB | ***ESAR***

ESA ID:	1340624
ESRD File:	00253506
File Classification:	PST
Documents in File:	1
Name:	PETRO-CANADA SERVICE STATION
10tm Point Coordinate:	112521,5653504
LLD:	4810N;3;31-33
LINC:	0019384859
Map Link:	http://www.esar.alberta.ca/esarmap.aspx?esaid=1340624
ESAR Link:	http://www.esar.alberta.ca/esarmain.aspx?esaid=00253506

--Details--

Doc Name:	PETRO-CANADA SERVICE STATION
Doc Type:	pdf
Doc Size (Mb):	0.60
Doc Date:	6/11/2009
Doc Desc:	SITE REMEDIATION PROGRAM ON-SITE EXCAVATION_2

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 3.36
Doc Date: 6/13/2008
Doc Desc: PHASE III ESA USING OPTIONAL TIER II CRITERIA

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.42
Doc Date: 5/13/2010
Doc Desc: Groundwater Monitoring Report Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.03
Doc Date: 6/22/2009
Doc Desc: EMAIL RE ATTACHED REPORTS AND RSC

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 1.27
Doc Date: 2/27/2009
Doc Desc: EMAIL RE REMEDIAL ACTION PLAN DOCUMENTS

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 2.24
Doc Date: 9/8/2008
Doc Desc: 2nd PHASE III ESA

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.03
Doc Date: 5/14/2010
Doc Desc: Email Reports Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 1.09
Doc Date: 10/19/2009
Doc Desc: EMAIL RE SUBMISSION OF GW MONITORING REPORT

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: txt
Doc Size (Mb): 0.00
Doc Date: 12/1/2016
Doc Desc: Email Cover Letter for RMP and ROSC for 123 - 3 Avenue Strathmore.txt

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.22
Doc Date: 5/13/2010
Doc Desc: Record of Site Condition Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.03
Doc Date: 2/18/2009
Doc Desc: EMAIL RE ORC PROPOSAL

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 1/7/2009
Doc Desc: LETTER OF CONSENT FOR OFF SITE REMEDIATION

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.06
Doc Date: 2/2/2010
Doc Desc: LETTER FROM AMA COST PROPOSAL FOR RISK MANAGEMENT MONITORING

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.34
Doc Date: 1/4/2010
Doc Desc: RECORD OF SITE CONDITION_4

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.95
Doc Date: 10/19/2009
Doc Desc: FIRST POST-INJECTION OF GROUNDWATER MONITORING

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.02
Doc Date: 7/10/2009
Doc Desc: EMAIL FROM AENV RE FILE REVIEW STATUS

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 6/22/2009
Doc Desc: EMAIL RE REMEDIATION REPORTS

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.58
Doc Date: 11/30/2016
Doc Desc: Record of Site Condition Form Nov 30, 2016.pdf

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 4/12/2016
Doc Desc: Email re 2014 investigation results

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 1.53
Doc Date: 10/20/2009
Doc Desc: EMAIL RE AMA SITE 9281 REPORT AND RSC

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.03
Doc Date: 6/24/2009
Doc Desc: LETTER FROM AMA RE CHEMICAL INJECTION REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.25
Doc Date: 6/22/2009
Doc Desc: REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 1.40
Doc Date: 6/18/2009
Doc Desc: BASELINE STUDY FOR ORC ADVANCED INJECTION

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.42
Doc Date: 5/8/2014
Doc Desc: Record of Site Condition for Vacant Land 123 3 AVE Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.50
Doc Date: 12/31/2009
Doc Desc: GROUNDWATER MONITORING PROGRAM

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 6/22/2009
Doc Desc: LETTER RE CHEMICAL INJECTION REPORT

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.26
Doc Date: 11/27/2008
Doc Desc: RECORD OF SITE CONDITION

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.99
Doc Date: 6/11/2009
Doc Desc: SITE REMEDIATION PROGRAM ON-SITE EXCAVATION

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 3.34
Doc Date: 5/12/2015
Doc Desc: Risk Management Plan 2015

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 5/8/2014
Doc Desc: Email Record of Site Condition & Supplementary Phase II ESA Report 123 3 Avenue Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 5.26
Doc Date: 5/8/2014
Doc Desc: Supplementary Phase II Environmental Site Assessment for 123 3 Avenue Strathmore

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.24
Doc Date: 11/20/2009
Doc Desc: LETTER FROM AMA RE COST PROPOSAL FOR RISK MANAGEMENT MONITORING

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.50
Doc Date: 10/19/2009
Doc Desc: RECORD OF SITE CONDITION_3

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.47
Doc Date: 2/19/2009
Doc Desc: APPLICATION OF ORC PROPOSAL

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.06
Doc Date: 1/14/2009
Doc Desc: LETTER FROM AMA RE STAGED REMEDIATION PLAN

Doc Name: PETRO-CANADA SERVICE STATION
Doc Type: pdf
Doc Size (Mb): 0.26
Doc Date: 6/22/2009
Doc Desc: RECORD OF SITE CONDITION_2

13	4 of 4	W/117.5	974.0 / 3.04	PETRO-CANADA SERVICE STATION Strathmore 123 3 AVE AB	ESAR

ESA ID: 1345158
ESRD File: 00253506
File Classification: PST
Documents in File: 1
Name: STRATHMORE ANTIQUE AUTO PARTS
10tm Point Coordinate: 112521,5653504
LLD: 4810N;3;31-33
LINC: 0019384859
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1345158
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00253506

--Details--
Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: txt
Doc Size (Mb): 0.00
Doc Date: 12/1/2016
Doc Desc: Email Cover Letter for RMP and ROSC for 123 - 3 Avenue Strathmore.txt

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 3.37
Doc Date: 6/13/2008
Doc Desc: Phase III ESA

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.14
Doc Date: 9/28/2005
Doc Desc: CORRESPONDENCE_4

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.58
Doc Date: 11/30/2016
Doc Desc: Record of Site Condition Form Nov 30, 2016.pdf

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: doc
Doc Size (Mb): 0.16
Doc Date: 7/22/2008
Doc Desc: AENV Response to Phase III ESA

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.86
Doc Date: 11/15/2004

Doc Desc:	LIMITED LEVEL II ESA
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.14
Doc Date:	7/31/2008
Doc Desc:	Phase III ESA_2
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	msg
Doc Size (Mb):	0.02
Doc Date:	7/20/2008
Doc Desc:	E MAIL RE PHASE III ESA AND RECORD OF SITE CONDITION 123 3 AVE STRATHMORE
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	msg
Doc Size (Mb):	3.73
Doc Date:	7/20/2008
Doc Desc:	Transmittal E-mail
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.29
Doc Date:	6/13/2008
Doc Desc:	RECORD OF SITE CONDITION 123 3 AVE STRATHMORE
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.04
Doc Date:	1/24/2005
Doc Desc:	CORRESPONDENCE_2
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	2.27
Doc Date:	9/8/2008
Doc Desc:	Phase III ESA_3
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.25
Doc Date:	5/8/2006
Doc Desc:	CONFIRMATORY TESTING
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	txt
Doc Size (Mb):	0.00
Doc Date:	10/5/2017
Doc Desc:	Email to Jan for status of Report for RMP
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	3.34
Doc Date:	5/12/2015
Doc Desc:	Risk Management Plan 2015
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	0.31
Doc Date:	9/9/2008
Doc Desc:	Updated RSC
Doc Name:	STRATHMORE ANTIQUE AUTO PARTS
Doc Type:	pdf
Doc Size (Mb):	3.37
Doc Date:	6/13/2008

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Doc Desc: PHASE III ESA 123 3 AVE STRATHMORE

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.29
Doc Date: 6/13/2008
Doc Desc: Record of Site Condition

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.04
Doc Date: 6/4/2008
Doc Desc: ESA

Doc Name: STRATHMORE ANTIQUE AUTO PARTS
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 5/9/2006
Doc Desc: CORRESPONDENCE_5

14	1 of 1	N/167.1	974.0 / 3.00	LAWRENCE ANDERSON Strathmore 10 THOMAS DR AB	ESAR

ESA ID: 1339015
ESRD File: 00144469
File Classification: PST
Documents in File: 1
Name: LAWRENCE ANDERSON
10tm Point Coordinate: 112789,5653842
LLD: 9310942;7;1
LINC: 0024898462
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1339015
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00144469

--Details--
Doc Name: LAWRENCE ANDERSON
Doc Type: pdf
Doc Size (Mb): 0.02
Doc Date: 3/22/2006
Doc Desc: CORRESPONDENCE

Doc Name: LAWRENCE ANDERSON
Doc Type: pdf
Doc Size (Mb): 1.96
Doc Date: 11/1/2004
Doc Desc: PHASE II ENVIRONMENTAL SITE ASSESSMENT

15	1 of 1	SSE/167.6	968.0 / -3.00	400 Ranch Market Strathmore AB T1P 0B2	EHS

Order No: 20070227020
Status: C
Report Type: CAN - Complete Report
Report Date: 3/2/2007
Date Received: 2/27/2007
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Fire Insur. Maps And /or Site Plans
Nearest Intersection:
Municipality:
Client Prov/State:
Search Radius (km): 0.25
X: -113.38506
Y: 51.038725

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
16	1 of 1	S/170.9	972.0 / 0.97	PETRO CANADA BULK KEYLOCK Strathmore 100 RIDGE RD AB	ESAR

ESA ID: 1337540
ESRD File: 00140476
File Classification: PST
Documents in File: 1
Name: PETRO CANADA BULK KEYLOCK
10tm Point Coordinate: 112843,5653059
LLD: 5276AV;30;1
LINC: 0033334798
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1337540
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00140476

--Details--

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 2.90
Doc Date: 4/25/2006
Doc Desc: 2003 - 2005 SITE MONITORING SUMMARY

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 1.51
Doc Date: 2/1/2002
Doc Desc: 2002 SITE MONITORING SUMMARY

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 1.36
Doc Date: 1/1/1998
Doc Desc: SITE INSPECTION AND UST REMOVAL

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 0.19
Doc Date: 4/1/1996
Doc Desc: SITE SENSITIVITY ASSESSMENT AND CLEAN-UP CRITERIA

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 0.30
Doc Date: 3/3/2006
Doc Desc: CORRESPONDENCE

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 1.12
Doc Date: 7/1/2000
Doc Desc: OFF-SITE SUBSURFACE INVESTIGATION

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 0.41
Doc Date: 2/1/2002
Doc Desc: 2001 SITE MONITORING SUMMARY

Doc Name: PETRO CANADA BULK KEYLOCK
Doc Type: pdf
Doc Size (Mb): 5.77
Doc Date: 4/25/2006
Doc Desc: SITE MONITORING REPORT - FALL 2005

Doc Name:	PETRO CANADA BULK KEYLOCK
Doc Type:	pdf
Doc Size (Mb):	0.63
Doc Date:	10/4/2004
Doc Desc:	SITE MONITORING REPORT
Doc Name:	PETRO CANADA BULK KEYLOCK
Doc Type:	pdf
Doc Size (Mb):	1.32
Doc Date:	2/1/2001
Doc Desc:	OFF-SITE DATA COMPILATION
Doc Name:	PETRO CANADA BULK KEYLOCK
Doc Type:	pdf
Doc Size (Mb):	8.20
Doc Date:	9/14/2005
Doc Desc:	SITE MONITORING REPORT_2
Doc Name:	PETRO CANADA BULK KEYLOCK
Doc Type:	pdf
Doc Size (Mb):	3.97
Doc Date:	4/25/2006
Doc Desc:	2003 - 2005 SITE MONITORING SUMMARY_2
Doc Name:	PETRO CANADA BULK KEYLOCK
Doc Type:	pdf
Doc Size (Mb):	5.70
Doc Date:	4/25/2006
Doc Desc:	SITE MONITORING REPORT - WINTER 2005

17 **1 of 1** **N/172.3** **974.0 / 3.00** **AB** **WWIS**

Well ID:	11659589	**Elevation Source:**	Hand held autonomous GPS 20-30m
Driller ID:	24227	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Hand held autonomous GPS 20-30m
GIC Well ID:	1476196	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):	3207	**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	No
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.390423
Flowing Well:		**Latitude:**	51.045441
Date Started:		**LSD:**	11
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	11-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	11659591	**Annular Seal Mat:**	Unknown
Well Owner ID:	11659590	**Annular Seal from:**	
Driller ID:	11633916	**Annular Seal to:**	
Drill Company ID:	24227	**Annular Seal Amt:**	
Drill Instance ID:	11633921	**Annular Seal Units:**	

Drill Comp Well ID:		***Drilling Method:***	Unknown
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	11/19/2007 0:00:00	***Drilling End Dt:***	
Type of Work:	Existing Well-Decommissioned	***Pack Type:***	Unknown
Plug Date:	10/19/2007 0:00:00	***Pack Grain Size:***	
Plug Material Type:	Bentonite Product	***Pack Amount:***	
Plug Mat Amount:	20	***Pack Units:***	Unknown
Plugged Units:	Bags	***Loc Verify Method:***	Not Verified
Well Use:	Unknown	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	78	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:	Steel	***Encounter Gas?:***	No
Casing OD:	5.5	***Flow Ctrl Install?:***	No
Casing Thickness:		***Recommended Rate:***	
Casing Bottom:		***Recom Intake Depth:***	
Liner Material:	Unknown	***Pump Installed?:***	No
Liner OD:		***Pump Install Depth:***	
Liner Thickness:		***Pump Model:***	
Liner Top:		***Pump Horsepower:***	
Liner Bottom:		***Well Disinfected?:***	No
Perforation by:	Unknown	***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:		***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	10/22/2007 0:00:00
Drilling Report Given to Owner:	Yes
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	DRILLING REPORT FOR ORIGINAL WELL NOT HELD IN GIC. GPS# 12U-0332439, 5657597 (6.1). WELL WAS CHLORINATED. WELL WAS ABANDONED WITH BENTONITE CHIPS FROM BOTTOM TO TOP, CASING OR LINER WAS NOT REMOVED. PLUGGING MATERIAL: HIGH SOLIDS BENTONITE (20 BAGS).

Well Owners

Well Owner ID:	11659590
Owner Name:	CRYSTAL RIDGE HOMES
PO Box:	2273
Address:	
City:	STRATHMORE
Postal Code:	T1P 1K2
Province:	ALBERTA
Country:	CA

Drillers

Driller ID:	11633916
Last Name:	HODGINS
Middle Initial:	
First Name:	BRAD
Journeyman No:	xxxxxxx
Is Active?:	No

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Drilling Companies

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Lithologies

Depth:	78
Water Bearing:	No
Colour:	
Description:	
Material:	Old Well

Pump Tests

Pump Test ID:	11659592
Test Date:	
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	16
End Water Level:	
Water Removal Type:	Unknown
Water Removal Rate:	
Removal Depth from:	
Reason for Short Test:	ABANDONED

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
18	*1 of 1*	*WNW/172.4*	*977.1 / 6.06*	***Strathmore Standard*** ***136 Second Ave*** ***Strathmore AB T1P***	***SCT***

Established:	01-JAN-09
Plant Size (ft²):	
Employment:	

--Details--

Description:	Newspaper Publishers
SIC/NAICS Code:	511110

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
19	*1 of 28*	*WSW/174.0*	*974.5 / 3.46*	***AB***	***WWIS***

Well ID:	122607	***Elevation Source:***	Not Obtained
Driller ID:	24227	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122607	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):	3176	***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:	35,36	***Validated?:***	Yes
Block:		***Submitted?:***	Yes

Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122607	**Annular Seal Mat:**	Driven
Well Owner ID:	10524623	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	167
Drill Company ID:	24227	**Annular Seal Amt:**	
Drill Instance ID:	8335390	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Rotary
Existing Well ID:		**Drilling Start Dt:**	8/20/1984 0:00:00
Date Received:	9/19/1984 0:00:00	**Drilling End Dt:**	8/22/1984 0:00:00
Type of Work:	New Well	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Not Verified
Well Use:	Domestic	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	195	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:		**Encounter Gas?:**	No
Casing OD:	0	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	13
Casing Bottom:	0	**Recom Intake Depth:**	120
Liner Material:	Steel	**Pump Installed?:**	No
Liner OD:	5.56	**Pump Install Depth:**	
Liner Thickness:	0.188	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	187	**Well Disinfected?:**	No
Perforation by:	Torch	**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	DRILLER REPORTS SOFT WATER

Well Owners

Well Owner ID:	10524623
Owner Name:	CHYSLER, ERIK

PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1475000
Ending Well ID: 1479999
Last Well ID Used: 1477040
Company Name: M&M DRILLING CO. LTD.
Street Address: BOX 1, SITE 22, RR 2
City: STRATHMORE
Province: AB
Country: CA
Postal Code: T1P 1K5
E-Mail: murraywh@mmdrilling.ca
Is Active?: Yes

Geophysical Logs

Geophysical Log ID: 5445875
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5848950
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547496
Diameter: 0
From: 0
To: 195

Lithologies

Depth: 10
Water Bearing: No
Colour:
Description:
Material: Sand

Lithologies

Depth: 195
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 167
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 55
Water Bearing: No
Colour:
Description:
Material: Clay & Rocks

Lithologies

Depth: 191
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 90
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Shale & Coal

Lithologies

Depth: 148
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 75
Water Bearing: No
Colour: Blue
Description:
Material: Shale

Lithologies

Depth: 120
Water Bearing: No
Colour:

Description:
Material: Shale

Pump Tests

Pump Test ID: 10249664
Test Date: 8/22/1984 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 87
End Water Level: 120
Water Removal Type: Bailer
Water Removal Rate: 13
Removal Depth from: 120
Reason for Short Test:

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19 | ***2 of 28*** | ***WSW/174.0*** | ***974.5 / 3.46*** | ***AB*** | ***WWIS***

Well ID:	122609	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122609	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID: 2014114
Well Report ID: 122609
Sample No: 627305
Sample Date: 8/6/1962 0:00:00
Analysis Date: 8/10/1962 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 76 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 516.75273

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 465

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 5.0055

Analysis Items

Chemical Analysis ID: 2014114
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 115

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.9996

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Nitrate

Element Symbol: NO3
Decimal Places: 4
Value: -0.9996

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.51

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 1

Analysis Items

Chemical Analysis ID: 2014114
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 1434

Well Reports

Well Report ID:	122609	***Annular Seal Mat:***	
Well Owner ID:	10524625	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Drilled
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	8/9/1962 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	105	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524625
Owner Name: OUCTION MART
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5848952
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5445877
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Boreholes

Borehole ID:	547498
Diameter:	0
From:	0
To:	105

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19 ***3 of 28*** ***WSW/174.0*** ***974.5 / 3.46*** ***AB*** ***WWIS***

Well ID:	122603	***Elevation Source:***	Estimated
Driller ID:	16349	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Field
GIC Well ID:	122603	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):	3176	***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122603	***Annular Seal Mat:***	Driven
Well Owner ID:	10524619	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	16349	***Annular Seal Amt:***	
Drill Instance ID:	8337776	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Rotary
Existing Well ID:		***Drilling Start Dt:***	
Date Received:		***Drilling End Dt:***	6/4/1965 0:00:00
Type of Work:	Well Inventory	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Field
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	227	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:	Unknown	***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	0
Casing Bottom:	62	***Recom Intake Depth:***	0
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	

Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:	OWNER REPORTS SOFT WATER		

Well Owners

Well Owner ID:	10524619
Owner Name:	ARCH & BEAM LTD
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	
Ending Well ID:	
Last Well ID Used:	
Company Name:	MURRAY R D DRLG
Street Address:	
City:	
Province:	
Country:	
Postal Code:	
E-Mail:	
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5445871
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5848946

Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547492
Diameter: 0
From: 0
To: 227

Lithologies

Depth: 225
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 10
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 35
Water Bearing: No
Colour: Blue
Description:
Material: Clay

Lithologies

Depth: 85
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 86
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 214
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth:	227
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone

Lithologies

Depth:	212
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Pump Tests

Pump Test ID:	10249661
Test Date:	6/4/1965 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	50
End Water Level:	158
Water Removal Type:	Pump
Water Removal Rate:	6
Removal Depth from:	160
Reason for Short Test:	

19 ***4 of 28*** ***WSW/174.0*** ***974.5 / 3.46*** ***AB*** ***WWIS***

Well ID:	122708	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122708	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014415
Well Report ID:	122708
Sample No:	613609
Sample Date:	5/2/1961 0:00:00
Analysis Date:	5/8/1961 0:00:00

Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 14 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODIUM

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.49

Analysis Items

Chemical Analysis ID: 2014415
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 65

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.9996

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: -0.9996

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 188.27302

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 2

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 700

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 3.0033

Analysis Items

Chemical Analysis ID: 2014415
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 360

Well Reports

Well Report ID: 122708
Well Owner ID: 10524723
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 5/2/1961 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Municipal
Other Well Use:
Total Depth Drill: 135
Finish Well Depth:
Casing Material:
Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No

Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524723
Owner Name: STRATHMORE, TOWN OF #WELL 2
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Geophysical Logs

Geophysical Log ID: 5849284
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5446209
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547830
Diameter: 0
From: 0
To: 135

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19 ***5 of 28*** ***WSW/174.0*** ***974.5 / 3.46*** ***AB*** ***WWIS***

Well ID: 122712
Driller ID: 11110
Licence No:
GIC Well ID: 122712
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Chemical Analysis

Chem Analysis ID: 2014412
Well Report ID: 122712
Sample No: 584
Sample Date: 1/22/1975 0:00:00
Analysis Date: 2/28/1975 0:00:00
Laboratory: AE
Water Level: 60
Aquifer:
Remarks:

Analysis Items

Chemical Analysis ID: 2014412

Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.1

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 20.999916

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 391

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 657.066942

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1700

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 1

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 2.001536

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 1.024

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.74

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0994

Analysis Items

Chemical Analysis ID: 2014412
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 1102

Analysis Items

Chemical Analysis ID: 2014412
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.3

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: -0.0994

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 349.50903

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 64

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 9.01345

Analysis Items

Chemical Analysis ID: 2014412
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 539

Well Reports

Well Report ID: 122712
Well Owner ID: 10524727
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 1/23/1975 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Domestic
Other Well Use:
Total Depth Drill: 105
Finish Well Depth:
Casing Material:
Casing OD: 0
Casing Thickness: 0
Casing Bottom: 0
Liner Material:

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No
Flow Ctrl Install?: No
Recommended Rate: 0
Recom Intake Depth: 0
Pump Installed?: No

Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524727
Owner Name: STRATHMORE SEED CLEANING PLANT
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5849288
Log Type: Gamma

Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5446213
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547834
Diameter: 0
From: 0
To: 105

Pump Tests

Pump Test ID: 10249729
Test Date: 1/22/1975 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 43
End Water Level:
Water Removal Type:
Water Removal Rate:
Removal Depth from: 0
Reason for Short Test:

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Well ID: 122702
Driller ID: 11110
Licence No:
GIC Well ID: 122702
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Chemical Analysis

Chem Analysis ID: 2014419
Well Report ID: 122702
Sample No: 621911
Sample Date: 2/21/1962 0:00:00

Analysis Date: 3/3/1962 0:00:00
Laboratory: UA
Water Level: 70
Aquifer:
Remarks: IGNITION LOSS 16 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014419
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.2

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 285.41578

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 375

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.25

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0

Value: 852

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 160

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014419
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 8.01235

Well Reports

Well Report ID: 122702
Well Owner ID: 10524717
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 3/1/1962 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Domestic
Other Well Use:
Total Depth Drill: 120
Finish Well Depth:
Casing Material: Unknown
Casing OD: 6
Casing Thickness: 0
Casing Bottom: 0
Liner Material:
Liner OD: 0
Liner Thickness: 0
Liner Top: 0
Liner Bottom: 0
Perforation by:
Screen Material:
Screen Size OD: 0
Screen Attachment:
Screen Top Fitting:
Screen Bot Fitting:
Encounter Saline Water?: No
Saline Water Depth:

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No
Flow Ctrl Install?: No
Recommended Rate: 0
Recom Intake Depth: 0
Pump Installed?: No
Pump Install Depth:
Pump Model:
Pump Horsepower:
Well Disinfected?: No
Other Log:
Divert Water Src:
Divert Water Amt:
Diversion Dt/Time:
Is Submitted?: Yes
Is Validated?: Yes

Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524717
Owner Name: THOMAS, DAVID
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5446203
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5849278
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547824
Diameter: 0
From: 0
To: 120

Pump Tests

Pump Test ID: 10249723
Test Date: 2/21/1962 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 50
End Water Level:
Water Removal Type:
Water Removal Rate:
Removal Depth from: 0
Reason for Short Test:

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Well ID: 296531
Driller ID: 24227
Licence No:
GIC Well ID: 296531
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Well Reports

Well Report ID: 296531
Well Owner ID: 10616787
Driller ID: 2533726
Drill Company ID: 24227
Drill Instance ID: 8335390
Drill Comp Well ID:
Existing Well ID:
Date Received: 8/2/2001 0:00:00
Type of Work: Existing Well-Decommissioned
Plug Date: 6/28/2001 0:00:00
Plug Material Type: Bentonite Product
Plug Mat Amount:
Plugged Units:
Well Use: Domestic
Other Well Use:
Total Depth Drill: 60

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Not Applicable
Drilling Start Dt: 6/28/2001 0:00:00
Drilling End Dt: 6/28/2001 0:00:00
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:

Finish Well Depth:		**Gas Depth:**	
Casing Material:	Steel	**Encounter Gas?:**	No
Casing OD:	6	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	
Casing Bottom:	0	**Recom Intake Depth:**	
Liner Material:		**Pump Installed?:**	No
Liner OD:	0	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments: DRILLER REPORTS HARWOOD LOT. INSTALLED BENTONITE CHIPS FROM BOTTOM TO TOP (17 BAGS).

Well Owners

Well Owner ID: 10616787
Owner Name: TRENDSETTER HOMES
PO Box: 2354
Address: STRATHMORE
City:
Postal Code: T1P 1K3
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1475000
Ending Well ID: 1479999
Last Well ID Used: 1477040
Company Name: M&M DRILLING CO. LTD.
Street Address: BOX 1, SITE 22, RR 2
City: STRATHMORE
Province: AB
Country: CA
Postal Code: T1P 1K5
E-Mail: murraywh@mmdrilling.ca
Is Active?: Yes

Geophysical Logs

Geophysical Log ID:	5655207
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	6058282
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	757280
Diameter:	0
From:	0
To:	60

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Well ID:	122710	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122710	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:	7-9	***Validated?:***	Yes
Block:	7	***Submitted?:***	Yes
Plan:	5894P	***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014410
Well Report ID:	122710
Sample No:	69863
Sample Date:	1/21/1969 0:00:00
Analysis Date:	1/30/1969 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 48 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.06

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014410
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 199.28792

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 754

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 376

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.13

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Total Phosphorus
Element Symbol: TP

Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 11

Analysis Items

Chemical Analysis ID: 2014410
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 12.01675

Chemical Analysis

Chem Analysis ID: 2014409
Well Report ID: 122710
Sample No: 681119
Sample Date: 1/22/1968 0:00:00
Analysis Date: 1/30/1968 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 60 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.1

Analysis Items

Chemical Analysis ID: 2014409
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 776

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Chloride
Element Symbol: CL

Decimal Places: 4
Value: 14.01895

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.15

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 36

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 172.25091

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 384

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014409
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Well Reports

Well Report ID: 122710
Well Owner ID: 10524725
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:

Date Received:	1/25/1968 0:00:00	**Drilling End Dt:**	
Type of Work:	Chemistry	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Not Verified
Well Use:	Domestic	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	200	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:	Unknown	**Encounter Gas?:**	No
Casing OD:	6	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	
Casing Bottom:	0	**Recom Intake Depth:**	
Liner Material:		**Pump Installed?:**	No
Liner OD:	0	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524725
Owner Name: MUZA, JAMES W.
PO Box: 712
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599

Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5849286
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5446211
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	547832
Diameter:	0
From:	0
To:	200

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Well ID:	122698	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122698	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014418
Well Report ID:	122698
Sample No:	6814516

Sample Date: 11/22/1968 0:00:00
Analysis Date: 12/3/1968 0:00:00
Laboratory: UA
Water Level: 80
Aquifer:
Remarks: IGNITION LOSS 86 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.18

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 315

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 157.22928

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 736

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 10

Analysis Items

Chemical Analysis ID: 2014418
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Chloride
Element Symbol: CL

Decimal Places: 4
Value: 54.07715

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 3.4

Analysis Items

Chemical Analysis ID: 2014418
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Chemical Analysis

Chem Analysis ID: 2014416
Well Report ID: 122698
Sample No: 6510983
Sample Date: 9/21/1965 0:00:00
Analysis Date: 10/1/1965 0:00:00
Laboratory: UA
Water Level: 80
Aquifer:
Remarks: IGNITION LOSS 50 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME,

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 161.23601

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Total Dissolved Solids
Element Symbol: TDS

Decimal Places: 0
Value: 732

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 150

Analysis Items

Chemical Analysis ID: 2014416
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 125.17655

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014416
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 250

Chemical Analysis

Chem Analysis ID: 2014414
Well Report ID: 122698
Sample No: 612643
Sample Date: 3/30/1961 0:00:00
Analysis Date: 4/5/1961 0:00:00
Laboratory: UA
Water Level: 80
Aquifer:
Remarks: IGNITION LOSS 44 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME,

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Iron
Element Symbol: FE

Decimal Places: 4
Value: 0.4

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 25

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014414
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.9996

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 2.78

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 754

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 207.30138

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 0.2996

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 300

Analysis Items

Chemical Analysis ID: 2014414
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 6.01015

Well Reports

Well Report ID: 122698
Well Owner ID: 10524713
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 3/30/1961 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Municipal
Other Well Use:
Total Depth Drill: 350
Finish Well Depth:
Casing Material: Unknown
Casing OD: 6
Casing Thickness: 0
Casing Bottom: 0
Liner Material:
Liner OD: 0
Liner Thickness: 0
Liner Top: 0
Liner Bottom: 0
Perforation by:
Screen Material:
Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No
Flow Ctrl Install?: No
Recommended Rate: 0
Recom Intake Depth: 0
Pump Installed?: No
Pump Install Depth:
Pump Model:
Pump Horsepower:
Well Disinfected?: No
Other Log:
Divert Water Src:

Screen Size OD: 0
Screen Attachment:
Screen Top Fitting:
Screen Bot Fitting:
Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Divert Water Amt:
Diversion Dt/Time:
Is Submitted?: Yes
Is Validated?: Yes

Well Owners

Well Owner ID: 10524713
Owner Name: STRATHMORE, TOWN OF #WELL 1
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5848955
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5445880

Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	547501
Diameter:	0
From:	0
To:	350

Pump Tests

Pump Test ID:	10249721
Test Date:	3/25/1961 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	80
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

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Well ID:	122606	**Elevation Source:**	Estimated
Driller ID:	24227	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Field
GIC Well ID:	122606	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):	3176	**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122606	**Annular Seal Mat:**	Driven
Well Owner ID:	10524622	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	59
Drill Company ID:	24227	**Annular Seal Amt:**	
Drill Instance ID:	8335390	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Rotary
Existing Well ID:		**Drilling Start Dt:**	9/16/1975 0:00:00
Date Received:	9/30/1975 0:00:00	**Drilling End Dt:**	9/19/1975 0:00:00
Type of Work:	New Well	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	

Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Field
Well Use:	Domestic & Stock	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	225	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:	Steel	***Encounter Gas?:***	No
Casing OD:	5.5	***Flow Ctrl Install?:***	No
Casing Thickness:	0.188	***Recommended Rate:***	0
Casing Bottom:	60	***Recom Intake Depth:***	203
Liner Material:	Steel	***Pump Installed?:***	No
Liner OD:	4.5	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	203	***Well Disinfected?:***	No
Perforation by:	Torch	***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	DRILLER REPORTS SOFT WATER

Well Owners

Well Owner ID:	10524622
Owner Name:	KANG, MALKIAT S.
PO Box:	54
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2

City: STRATHMORE
Province: AB
Country: CA
Postal Code: T1P 1K5
E-Mail: murraywh@mmdrilling.ca
Is Active?: Yes

Perforations

Perforation ID: 4165835
From: 185
To: 203
Diameter: 0
Interval: 0

Geophysical Logs

Geophysical Log ID: 5848949
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5445874
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547495
Diameter: 0
From: 0
To: 225

Lithologies

Depth: 66
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 45
Water Bearing: No
Colour: Brown
Description:
Material: Clay

Lithologies

Depth: 127
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 225
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 119
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 192
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 47
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 48
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 78
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 82
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 111

Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 137
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 103
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 134
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 170
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 195
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 60
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 180
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth:	210
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Pump Tests

Pump Test ID:	10249663
Test Date:	9/19/1975 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	40
End Water Level:	203
Water Removal Type:	Pump
Water Removal Rate:	4
Removal Depth from:	203
Reason for Short Test:	

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Well ID:	122605	***Elevation Source:***	Estimated
Driller ID:	24227	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Field
GIC Well ID:	122605	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):	3176	***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122605	***Annular Seal Mat:***	
Well Owner ID:	10524621	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	24227	***Annular Seal Amt:***	
Drill Instance ID:	8335390	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Rotary
Existing Well ID:		***Drilling Start Dt:***	9/10/1975 0:00:00
Date Received:	9/30/1975 0:00:00	***Drilling End Dt:***	9/16/1975 0:00:00
Type of Work:	New Well-Decommissioned	***Pack Type:***	
Plug Date:	9/16/1976 0:00:00	***Pack Grain Size:***	
Plug Material Type:	Unknown	***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	

Plugged Units:		***Loc Verify Method:***	Field
Well Use:	Domestic & Stock	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	476	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments: ABANDONED DUE TO INSUFFICIENT GOOD WATER

Well Owners

Well Owner ID: 10524621
Owner Name: KANG, MALKIAT S.
PO Box: 54
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1475000
Ending Well ID: 1479999
Last Well ID Used: 1477040
Company Name: M&M DRILLING CO. LTD.
Street Address: BOX 1, SITE 22, RR 2
City: STRATHMORE
Province: AB

Country: CA
Postal Code: T1P 1K5
E-Mail: murraywh@mmdrilling.ca
Is Active?: Yes

Geophysical Logs

Geophysical Log ID: 5848948
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5445873
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547494
Diameter: 0
From: 0
To: 476

Lithologies

Depth: 72
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 142
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 188
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 282
Water Bearing: No
Colour:
Description: Hard
Material: Sandstone

Lithologies

Depth: 476
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 181
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 125
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 370
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 389
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 90
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 45
Water Bearing: No
Colour: Blue
Description:
Material: Clay & Rocks

Lithologies

Depth: 62
Water Bearing: No
Colour:

Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 75
Water Bearing: No
Colour:
Description: Hard
Material: Sandstone

Lithologies

Depth: 88
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 297
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 130
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 48
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 50
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 55
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 114
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 32
Water Bearing: No
Colour: Brown
Description:
Material: Clay & Rocks

Lithologies

Depth: 276
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 145
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 148
Water Bearing: No
Colour:
Description:
Material: Sandstone

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19 ***12 of 28*** ***WSW/174.0*** ***974.5 / 3.46*** ***AB*** ***WWIS***

Well ID:	122709	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122709	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4

Drilling Company: ***DLS Coordinates:*** SW-14-24-25-4
Owner Mailing Address:
Driller Mailing Address:

Chemical Analysis

Chem Analysis ID: 2014480
Well Report ID: 122709
Sample No: 653078
Sample Date: 3/23/1965 0:00:00
Analysis Date: 3/30/1965 0:00:00
Laboratory: UA
Water Level: 63
Aquifer:
Remarks: IGNITION LOSS 68 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.42

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 18.0269

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 650

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 141.20717

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Total Phosphorus

Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.6

Analysis Items

Chemical Analysis ID: 2014480
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 125

Analysis Items

Chemical Analysis ID: 2014480
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 345

Well Reports

Well Report ID:	122709	***Annular Seal Mat:***	
Well Owner ID:	10524724	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Drilled
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	3/26/1965 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	150	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:	Unknown	***Encounter Gas?:***	No
Casing OD:	6	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	0
Casing Bottom:	0	***Recom Intake Depth:***	0
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	

Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524724
Owner Name: WALKER, K.H.
PO Box: 125
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5849285
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID:	5446210
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	547831
Diameter:	0
From:	0
To:	150

Pump Tests

Pump Test ID:	10249728
Test Date:	3/23/1965 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	87
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

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Well ID:	122611	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Map
GIC Well ID:	122611	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:	38,39	***Validated?:***	Yes
Block:	17	***Submitted?:***	Yes
Plan:	5894P	***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2115760
Well Report ID:	122611
Sample No:	8810057
Sample Date:	10/24/1988 0:00:00
Analysis Date:	11/4/1988 0:00:00
Laboratory:	AE

Water Level:
Aquifer: WELL
Remarks: CATIONS - 10.77; ANIONS - 10.78

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.61

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.6

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 0.5

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 1

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 10

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: 0.04

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 3

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 6

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: -0.01

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 243

Analysis Items

Chemical Analysis ID: 2115760
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.4

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 9.7

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: 0.04

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 620

Analysis Items

Chemical Analysis ID: 2115760

Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1024

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 431

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 364

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 36.9

Analysis Items

Chemical Analysis ID: 2115760
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 117

Well Reports

Well Report ID: 122611
Well Owner ID: 10524627
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 11/1/1988 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Domestic
Other Well Use:
Total Depth Drill: 120
Finish Well Depth:
Casing Material:
Casing OD: 0
Casing Thickness: 0
Casing Bottom: 0
Liner Material:
Liner OD: 0

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Map
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No
Flow Ctrl Install?: No
Recommended Rate:
Recom Intake Depth:
Pump Installed?: No
Pump Install Depth:

Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments: SEE VG CHEM SAMPLE #8810057

Well Owners

Well Owner ID: 10524627
Owner Name: GUTHRIE, JOY
PO Box:
Address: GEN DEL, STRATHMORE
City:
Postal Code: T0J 3H0
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5848954
Log Type: Gamma
Log Taken?: No

Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5445879
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547500
Diameter: 0
From: 0
To: 120

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19 ***14 of 28*** ***WSW/174.0*** ***974.5 / 3.46*** ***AB*** ***WWIS***

Well ID: 122610
Driller ID: 11110
Licence No:
GIC Well ID: 122610
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Chemical Analysis

Chem Analysis ID: 2014173
Well Report ID: 122610
Sample No: 603595
Sample Date: 5/13/1960 0:00:00
Analysis Date: 5/19/1960 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 188 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.9996

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 2.4976

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 380

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 1.3

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 340

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 17.02225

Analysis Items

Chemical Analysis ID: 2014173
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014173

Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 134.19419

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014173
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 686

Chemical Analysis

Chem Analysis ID: 2014174
Well Report ID: 122610
Sample No: 606254
Sample Date: 8/10/1960 0:00:00
Analysis Date: 8/18/1960 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 110 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014174
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 646

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014174

Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 117.1716

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 395

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 4.0044

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 1.2

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 195

Analysis Items

Chemical Analysis ID: 2014174
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 1.1998

Well Reports

Well Report ID: 122610
Well Owner ID: 10524626
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:

Drill Comp Well ID:		***Drilling Method:***	Unknown
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	5/19/1960 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	90	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10524626
Owner Name:	CONLET'S DRIVE-IN
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5445878
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5848953
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	547499
Diameter:	0
From:	0
To:	90

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Well ID:	122701	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122701	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2115762

Well Report ID: 122701
Sample No: 687119
Sample Date:
Analysis Date: 6/13/1968 0:00:00
Laboratory: RC
Water Level:
Aquifer:
Remarks: IGN. LOSS - 80;

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 738

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 327

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 33

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 16

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.06

Analysis Items

Chemical Analysis ID: 2115762

Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2115762
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 204

Chemical Analysis

Chem Analysis ID: 2115761
Well Report ID: 122701
Sample No: 9494
Sample Date:
Analysis Date: 10/19/1976 0:00:00
Laboratory: AE
Water Level:
Aquifer: WELL
Remarks:

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 683

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: 0.3

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.85

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 235

Analysis Items

Chemical Analysis ID: 2115761

Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 350

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: -0.1

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1030

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.6

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 229

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 2.35

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 6

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 15

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: -1

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 5

Analysis Items

Chemical Analysis ID: 2115761
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.6

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 396

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: -1

Analysis Items

Chemical Analysis ID: 2115761
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.1

Well Reports

Well Report ID: 122701
Well Owner ID: 10524716
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 6/10/1968 0:00:00
Type of Work: Chemistry

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Unknown
Drilling Start Dt:
Drilling End Dt:
Pack Type:

Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Municipal	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	0	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10524716
Owner Name:	STRATHMORE, TOWN OF
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER

Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5849277
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5446202
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	547823
Diameter:	0
From:	0
To:	0

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Well ID:	296530	**Elevation Source:**	Not Obtained
Driller ID:	24227	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	296530	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	296530	**Annular Seal Mat:**	
Well Owner ID:	10616786	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	0
Drill Company ID:	24227	**Annular Seal Amt:**	
Drill Instance ID:	8335390	**Annular Seal Units:**	

Drill Comp Well ID:		***Drilling Method:***	Not Applicable
Existing Well ID:		***Drilling Start Dt:***	6/28/2001 0:00:00
Date Received:	8/2/2001 0:00:00	***Drilling End Dt:***	6/28/2001 0:00:00
Type of Work:	Existing Well-Decommissioned	***Pack Type:***	
Plug Date:	6/28/2001 0:00:00	***Pack Grain Size:***	
Plug Material Type:	Bentonite Product	***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	15	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	ORIGINALLY DRILLED WELL REPORT NOT AT GIC. DRILLER REPORTS OLD DUG WELL HARWOOD SITE. INSTALLED 15 BAGS OF BENTONITE + FILLED C/W FILL.

Well Owners

Well Owner ID:	10616786
Owner Name:	TRENDSETTER HOMES
PO Box:	2354
Address:	STRATHMORE
City:	
Postal Code:	T1P 1K3
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Geophysical Logs

Geophysical Log ID:	5909983
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5506908
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	609117
Diameter:	0
From:	0
To:	15

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Well ID:	122711	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122711	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID: 2014411
Well Report ID: 122711
Sample No: 664421
Sample Date: 4/21/1966 0:00:00
Analysis Date: 4/29/1966 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 150 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 200

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 400

Analysis Items

Chemical Analysis ID: 2014411
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 11.01565

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 5

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 632

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.45

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014411
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 79.11488

Well Reports

Well Report ID:	122711	***Annular Seal Mat:***	
Well Owner ID:	10524726	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Unknown
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	4/25/1966 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	65	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	

Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			
Submitted by:			
Additional Comments:			

Well Owners

Well Owner ID:	10524726
Owner Name:	PAGETS DAIRY BAR & MOTEL
PO Box:	474
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5849287
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5446212
Log Type:	Electric
Log Taken?:	No

Sent to AENV?: No

Boreholes

Borehole ID: 547833
Diameter: 0
From: 0
To: 65

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Well ID:	122707	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122707	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID: 2014413
Well Report ID: 122707
Sample No: 607433
Sample Date: 9/26/1960 0:00:00
Analysis Date: 9/27/1960 0:00:00
Laboratory: UA
Water Level: 45
Aquifer:
Remarks: IGNITION LOSS 38 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 296.43068

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 5.0055

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.8

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 325

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.67

Analysis Items

Chemical Analysis ID: 2014413
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 25

Analysis Items

Chemical Analysis ID: 2014413
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID:	2014413
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	902

Well Reports

Well Report ID:	122707	**Annular Seal Mat:**	
Well Owner ID:	10524722	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	0
Drill Company ID:	11110	**Annular Seal Amt:**	
Drill Instance ID:	8337868	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Drilled
Existing Well ID:		**Drilling Start Dt:**	
Date Received:	9/26/1960 0:00:00	**Drilling End Dt:**	
Type of Work:	Chemistry	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Not Verified
Well Use:	Domestic	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	145	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:	Unknown	**Encounter Gas?:**	No
Casing OD:	4.5	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	0
Casing Bottom:	0	**Recom Intake Depth:**	0
Liner Material:		**Pump Installed?:**	No
Liner OD:	0	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10524722
Owner Name:	STRATHMORE SWIMMING POOL
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5849283
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5446208
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	547829
Diameter:	0
From:	0
To:	145

Pump Tests

Pump Test ID:	10249727
Test Date:	9/26/1960 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	100
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

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Well ID:	122604	**Elevation Source:**	Estimated
Driller ID:	24227	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Field
GIC Well ID:	122604	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):	3176	**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122604	**Annular Seal Mat:**	Driven
Well Owner ID:	10524620	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	47
Drill Company ID:	24227	**Annular Seal Amt:**	
Drill Instance ID:	8335390	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Rotary
Existing Well ID:		**Drilling Start Dt:**	4/13/1976 0:00:00
Date Received:	5/12/1976 0:00:00	**Drilling End Dt:**	4/15/1976 0:00:00
Type of Work:	New Well	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Field
Well Use:	Industrial	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	270	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:		**Encounter Gas?:**	No
Casing OD:	0	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	0
Casing Bottom:	0	**Recom Intake Depth:**	227
Liner Material:	Steel	**Pump Installed?:**	No
Liner OD:	5.5	**Pump Install Depth:**	
Liner Thickness:	0.188	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	227	**Well Disinfected?:**	No
Perforation by:	Torch	**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			

Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments: DRILLER REPORTS SOFT WATER

Well Owners

Well Owner ID: 10524620
Owner Name: STRATHMORE MOTOR PRODUCTS
PO Box:
Address: CALGARY
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1475000
Ending Well ID: 1479999
Last Well ID Used: 1477040
Company Name: M&M DRILLING CO. LTD.
Street Address: BOX 1, SITE 22, RR 2
City: STRATHMORE
Province: AB
Country: CA
Postal Code: T1P 1K5
E-Mail: murraywh@mmdrilling.ca
Is Active?: Yes

Perforations

Perforation ID: 4257246
From: 146
To: 151
Diameter: 0
Interval: 0

Perforations

Perforation ID: 4165834
From: 5
To: 56
Diameter: 0
Interval: 0

Perforations

Perforation ID: 4265895
From: 212

To: 227
Diameter: 0
Interval: 0

Geophysical Logs

Geophysical Log ID: 5445872
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5848947
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547493
Diameter: 0
From: 0
To: 270

Lithologies

Depth: 53
Water Bearing: No
Colour: Blue
Description:
Material: Shale

Lithologies

Depth: 148
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 266
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 55
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 151
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 247
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 265
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 31
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 246
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 256
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 9
Water Bearing: No
Colour: Brown
Description: Sandy
Material: Clay

Lithologies

Depth: 60
Water Bearing: No
Colour:
Description:

Material: Shale & Coal

Lithologies

Depth: 233
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 17
Water Bearing: No
Colour: Brown
Description:
Material: Clay

Lithologies

Depth: 77
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 192
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 72
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 255
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 270
Water Bearing: No
Colour:
Description:
Material: Shale

Pump Tests

Pump Test ID:	10249662
Test Date:	4/15/1976 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	40
End Water Level:	227
Water Removal Type:	Bailer
Water Removal Rate:	11
Removal Depth from:	227
Reason for Short Test:	

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Well ID:	122705	**Elevation Source:**	Not Obtained
Driller ID:	11110	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	122705	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014113
Well Report ID:	122705
Sample No:	6210554
Sample Date:	11/6/1962 0:00:00
Analysis Date:	11/14/1962 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	
Remarks:	IGNITION LOSS 136 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID:	2014113
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	3.3

Analysis Items

Chemical Analysis ID:	2014113
Element Name:	Total Dissolved Solids

Element Symbol: TDS
Decimal Places: 0
Value: 788

Analysis Items

Chemical Analysis ID: 2014113
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 195

Analysis Items

Chemical Analysis ID: 2014113
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 235.34368

Analysis Items

Chemical Analysis ID: 2014113
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014113
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014113
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014113
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 2

Analysis Items

Chemical Analysis ID: 2014113
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 9.01345

Analysis Items

Chemical Analysis ID:	2014113
Element Name:	Total Alkalinity
Element Symbol:	TA
Decimal Places:	4
Value:	300

Well Reports

Well Report ID:	122705	***Annular Seal Mat:***	
Well Owner ID:	10524720	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Drilled
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	11/13/1962 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	230	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10524720
Owner Name:	
PO Box:	
Address:	STRATHMORE
City:	

Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5446206
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5849281
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547827
Diameter: 0
From: 0
To: 230

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Well ID: 122699
Driller ID: 11110
Licence No:
GIC Well ID: 122699
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes

Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2115759
Well Report ID:	122699
Sample No:	658756
Sample Date:	
Analysis Date:	8/13/1965 0:00:00
Laboratory:	UA
Water Level:	
Aquifer:	WELL
Remarks:	IGN. LOSS - 44;

Analysis Items

Chemical Analysis ID:	2115759
Element Name:	Sulphate
Element Symbol:	SO4
Decimal Places:	4
Value:	234

Analysis Items

Chemical Analysis ID:	2115759
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	25

Analysis Items

Chemical Analysis ID:	2115759
Element Name:	Nitrite
Element Symbol:	NO2
Decimal Places:	4
Value:	0

Analysis Items

Chemical Analysis ID:	2115759
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	798

Analysis Items

Chemical Analysis ID:	2115759
Element Name:	Total Alkalinity

Element Symbol: TA
Decimal Places: 4
Value: 325

Analysis Items

Chemical Analysis ID: 2115759
Element Name: Nitrate
Element Symbol: NO3
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2115759
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 5

Well Reports

Well Report ID: 122699
Well Owner ID: 10524714
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 8/11/1965 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Municipal
Other Well Use:
Total Depth Drill: 0
Finish Well Depth:
Casing Material:
Casing OD: 0
Casing Thickness: 0
Casing Bottom: 0
Liner Material:
Liner OD: 0
Liner Thickness: 0
Liner Top: 0
Liner Bottom: 0
Perforation by:
Screen Material:
Screen Size OD: 0
Screen Attachment:
Screen Top Fitting:
Screen Bot Fitting:
Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Unknown
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No
Flow Ctrl Install?: No
Recommended Rate:
Recom Intake Depth:
Pump Installed?: No
Pump Install Depth:
Pump Model:
Pump Horsepower:
Well Disinfected?: No
Other Log:
Divert Water Src:
Divert Water Amt:
Diversion Dt/Time:
Is Submitted?: Yes
Is Validated?: Yes

Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524714
Owner Name:
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5445881
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5848956
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547502
Diameter: 0
From: 0
To: 0

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
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Well ID:	122704	**Elevation Source:**	Not Obtained
Driller ID:	11110	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	122704	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014420
Well Report ID:	122704
Sample No:	686353
Sample Date:	5/23/1968 0:00:00
Analysis Date:	5/29/1968 0:00:00
Laboratory:	UA
Water Level:	20
Aquifer:	
Remarks:	IGNITION LOSS 42 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID:	2014420
Element Name:	Total Dissolved Solids
Element Symbol:	TDS
Decimal Places:	0
Value:	720

Analysis Items

Chemical Analysis ID:	2014420
Element Name:	Chloride
Element Symbol:	CL
Decimal Places:	4
Value:	6.01015

Analysis Items

Chemical Analysis ID:	2014420
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	1.05

Analysis Items

Chemical Analysis ID: 2014420
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014420
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 22

Analysis Items

Chemical Analysis ID: 2014420
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014420
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014420
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.03

Analysis Items

Chemical Analysis ID: 2014420
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 191.27927

Analysis Items

Chemical Analysis ID: 2014420
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 375

Chemical Analysis

Chem Analysis ID: 2014421
Well Report ID: 122704

Sample No: 698175
Sample Date: 7/18/1969 0:00:00
Analysis Date: 8/25/1969 0:00:00
Laboratory: UA
Water Level: 40
Aquifer:
Remarks: IGNITION LOSS 56 MG/L, NATURE OF ALKALINITY BICARBONATE OF SODA,

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.02

Analysis Items

Chemical Analysis ID: 2014421
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 674

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 25

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.01

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Hydroxide

Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 154.22303

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 2.0022

Analysis Items

Chemical Analysis ID: 2014421
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 377

Well Reports

Well Report ID:	122704	***Annular Seal Mat:***	
Well Owner ID:	10524719	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Drilled
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	5/27/1968 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Domestic	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	100	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:	Unknown	***Encounter Gas?:***	No
Casing OD:	8	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	0
Casing Bottom:	0	***Recom Intake Depth:***	0
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524719
Owner Name: VOGELAAR, G.
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5446205
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5849280
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Boreholes

Borehole ID: 547826
Diameter: 0
From: 0
To: 100

Pump Tests

Pump Test ID: 10249725
Test Date: 5/23/1968 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 80
End Water Level:
Water Removal Type:
Water Removal Rate:
Removal Depth from: 0
Reason for Short Test:

Pump Tests

Pump Test ID: 10249726
Test Date: 7/18/1969 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 60
End Water Level:
Water Removal Type:
Water Removal Rate:
Removal Depth from: 0
Reason for Short Test:

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Well ID: 122713
Driller ID: 24227
Licence No:
GIC Well ID: 122713
GOA Well Tag No:
Elevation (ft): 3176
Depth (ft):
Date Completed:
Proposed Use:
Lot: 11
Block: 15
Plan: 5894P
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Estimated
Method of Drilling:
GPS Obtained: Field
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Well Reports

Well Report ID: 122713
Annular Seal Mat: Unknown

Well Owner ID:	10524728	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	145
Drill Company ID:	24227	**Annular Seal Amt:**	
Drill Instance ID:	8335390	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Rotary
Existing Well ID:		**Drilling Start Dt:**	
Date Received:		**Drilling End Dt:**	9/18/1967 0:00:00
Type of Work:	New Well	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Field
Well Use:	Municipal	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	255	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:	Steel	**Encounter Gas?:**	No
Casing OD:	5.13	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	0
Casing Bottom:	170	**Recom Intake Depth:**	180
Liner Material:		**Pump Installed?:**	Yes
Liner OD:	0	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	1.5
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	STA-RITE
Created by:	
Submitted by:	
Additional Comments:	DRILLER REPORTS SOFT, CLEAR WATER

Well Owners

Well Owner ID:	10524728
Owner Name:	STRATHMORE, TOWN OF
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1475000
Ending Well ID:	1479999
Last Well ID Used:	1477040
Company Name:	M&M DRILLING CO. LTD.
Street Address:	BOX 1, SITE 22, RR 2
City:	STRATHMORE
Province:	AB
Country:	CA
Postal Code:	T1P 1K5
E-Mail:	murraywh@mmdrilling.ca
Is Active?:	Yes

Geophysical Logs

Geophysical Log ID:	5851591
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5448516
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	550137
Diameter:	0
From:	0
To:	255

Lithologies

Depth:	30
Water Bearing:	No
Colour:	Brown
Description:	
Material:	Shale

Lithologies

Depth:	50
Water Bearing:	No
Colour:	
Description:	
Material:	Shale

Lithologies

Depth:	75
Water Bearing:	Yes
Colour:	Blue
Description:	Water Bearing
Material:	Shale

Lithologies

Depth: 25
Water Bearing: No
Colour:
Description: Sandy
Material: Clay

Lithologies

Depth: 97
Water Bearing: No
Colour:
Description:
Material: Coal

Lithologies

Depth: 186
Water Bearing: No
Colour:
Description: Soft
Material: Sandstone

Lithologies

Depth: 250
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 41
Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 40
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 37
Water Bearing: No
Colour: Blue
Description:
Material: Shale

Lithologies

Depth: 51

Water Bearing: No
Colour:
Description:
Material: Sandstone

Lithologies

Depth: 240
Water Bearing: No
Colour: Blue
Description:
Material: Shale

Lithologies

Depth: 38
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sand & Coal

Lithologies

Depth: 120
Water Bearing: No
Colour:
Description:
Material: Shale & Rocks

Lithologies

Depth: 255
Water Bearing: No
Colour:
Description:
Material: Shale

Lithologies

Depth: 210
Water Bearing: No
Colour:
Description: Soft
Material: Sandstone

Lithologies

Depth: 190
Water Bearing: Yes
Colour:
Description: Water Bearing
Material: Sandstone

Lithologies

Depth: 22
Water Bearing: No
Colour: Brown
Description:
Material: Clay

Lithologies

Depth:	95
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale

Lithologies

Depth:	170
Water Bearing:	No
Colour:	Blue
Description:	
Material:	Shale

Pump Tests

Pump Test ID:	10249730
Test Date:	9/18/1967 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	135
End Water Level:	
Water Removal Type:	Bailer
Water Removal Rate:	28
Removal Depth from:	0
Reason for Short Test:	

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Well ID:	122706	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	122706	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.394433
Flowing Well:		***Latitude:***	51.041523
Date Started:		***LSD:***	SW
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014417
Well Report ID:	122706
Sample No:	676796
Sample Date:	6/5/1967 0:00:00

Analysis Date: 6/15/1967 0:00:00
Laboratory: UA
Water Level:
Aquifer:
Remarks: IGNITION LOSS 50 MG/L, NATURE OF ALKALINITY BICARBONATE OF LIME,

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 1.63

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 1614

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 73.10719

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 49

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 799.1263

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 135

Analysis Items

Chemical Analysis ID: 2014417
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4

Value: 0

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 1.72

Analysis Items

Chemical Analysis ID: 2014417
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Well Reports

Well Report ID: 122706
Well Owner ID: 10524721
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 6/9/1967 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Municipal
Other Well Use:
Total Depth Drill: 437
Finish Well Depth:
Casing Material:
Casing OD: 0
Casing Thickness: 0
Casing Bottom: 0
Liner Material:
Liner OD: 0
Liner Thickness: 0
Liner Top: 0
Liner Bottom: 0
Perforation by:
Screen Material:
Screen Size OD: 0
Screen Attachment:
Screen Top Fitting:
Screen Bot Fitting:
Encounter Saline Water?: No
Saline Water Depth:

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:
Encounter Gas?: No
Flow Ctrl Install?: No
Recommended Rate:
Recom Intake Depth:
Pump Installed?: No
Pump Install Depth:
Pump Model:
Pump Horsepower:
Well Disinfected?: No
Other Log:
Divert Water Src:
Divert Water Amt:
Diversion Dt/Time:
Is Submitted?: Yes
Is Validated?: Yes

Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524721
Owner Name: STRATHMORE, TOWN
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5446207
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5849282
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID:	547828
Diameter:	0
From:	0
To:	437

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Well ID:	122700	**Elevation Source:**	Estimated
Driller ID:	24156	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	122700	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):	3185	**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:	27	**Validated?:**	Yes
Block:	2	**Submitted?:**	Yes
Plan:	4751R	**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122700	**Annular Seal Mat:**	Driven
Well Owner ID:	10524715	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	20
Drill Company ID:	24156	**Annular Seal Amt:**	
Drill Instance ID:	8335232	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Rotary
Existing Well ID:		**Drilling Start Dt:**	5/7/1979 0:00:00
Date Received:	6/15/1979 0:00:00	**Drilling End Dt:**	5/9/1979 0:00:00
Type of Work:	New Well	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Not Verified
Well Use:	Unknown	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	115	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:	Steel	**Encounter Gas?:**	No
Casing OD:	5.56	**Flow Ctrl Install?:**	No
Casing Thickness:	0.156	**Recommended Rate:**	0
Casing Bottom:	20	**Recom Intake Depth:**	100
Liner Material:	Plastic	**Pump Installed?:**	No
Liner OD:	4.5	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	115	**Well Disinfected?:**	No
Perforation by:	Machine	**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	

Screen Top Fitting:
Screen Bot Fitting:
Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:
Is Submitted?: Yes
Is Validated?: Yes

Well Owners

Well Owner ID: 10524715
Owner Name: RHODES, H.W.
PO Box: 64
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1240000
Ending Well ID: 1244999
Last Well ID Used: 1240329
Company Name: DEN-ALTA DRILLING LTD.
Street Address: SITE 2, SITE 21, R.R. 1
City: AIRDRIE
Province: AB
Country: CA
Postal Code: T4B 2A3
E-Mail: denalta@telusplanet.net
Is Active?: No

Perforations

Perforation ID: 4165951
From: 35
To: 55
Diameter: 0.25
Interval: 8

Perforations

Perforation ID: 4257257
From: 95

To: 115
Diameter: 0
Interval: 0

Geophysical Logs

Geophysical Log ID: 5446201
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5849276
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547822
Diameter: 0
From: 0
To: 115

Lithologies

Depth: 115
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone Ledges

Lithologies

Depth: 30
Water Bearing: No
Colour:
Description:
Material: Clay & Sand

Pump Tests

Pump Test ID: 10249722
Test Date: 5/9/1979 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 50
End Water Level: 98
Water Removal Type: Pump
Water Removal Rate: 15
Removal Depth from: 100
Reason for Short Test:

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Well ID: 122703
Driller ID: 24156
Licence No:
Elevation Source: Estimated
Method of Drilling:
GPS Obtained: Field

GIC Well ID:	122703	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):	3076	**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:	34,35	**Validated?:**	Yes
Block:	17	**Submitted?:**	Yes
Plan:	5894P	**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.394433
Flowing Well:		**Latitude:**	51.041523
Date Started:		**LSD:**	SW
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	SW-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122703	**Annular Seal Mat:**	
Well Owner ID:	10524718	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	0
Drill Company ID:	24156	**Annular Seal Amt:**	
Drill Instance ID:	8335232	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Rotary
Existing Well ID:		**Drilling Start Dt:**	7/30/1979 0:00:00
Date Received:	8/10/1979 0:00:00	**Drilling End Dt:**	7/30/1979 0:00:00
Type of Work:	Reconditioned	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Field
Well Use:	Domestic	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	155	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:		**Encounter Gas?:**	No
Casing OD:	0	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	0
Casing Bottom:	0	**Recom Intake Depth:**	145
Liner Material:	Plastic	**Pump Installed?:**	No
Liner OD:	4.5	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	155	**Well Disinfected?:**	No
Perforation by:	Machine	**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		
Approval Holder Sign Date:			
Drilling Report Given to Owner:	No		
Model Output Rating:			
Remedial Action:			
Flow Control Description:			
Pump Type Installed:			
Created by:			

Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524718
Owner Name: KERNAFHAN, GERRY
PO Box: 626
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1240000
Ending Well ID: 1244999
Last Well ID Used: 1240329
Company Name: DEN-ALTA DRILLING LTD.
Street Address: SITE 2, SITE 21, R.R. 1
City: AIRDRIE
Province: AB
Country: CA
Postal Code: T4B 2A3
E-Mail: denalta@telusplanet.net
Is Active?: No

Perforations

Perforation ID: 4165952
From: 95
To: 155
Diameter: 0.25
Interval: 8

Geophysical Logs

Geophysical Log ID: 5446204
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5849279
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547825
Diameter: 0
From: 0
To: 155

Lithologies

Depth: 155
Water Bearing: No
Colour:
Description:
Material: Shale & Sandstone

Pump Tests

Pump Test ID: 10249724
Test Date: 7/30/1979 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 33
End Water Level:
Water Removal Type: Pump
Water Removal Rate: 2
Removal Depth from: 0
Reason for Short Test:

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Well ID: 292892
Driller ID: 24297
Licence No:
GIC Well ID: 292892
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Well Reports

Well Report ID: 292892
Well Owner ID: 10609287
Driller ID: 2533726
Drill Company ID: 24297
Drill Instance ID: 8335358
Drill Comp Well ID:
Existing Well ID:

Annular Seal Mat: Driven
Annular Seal from: 0
Annular Seal to: 19
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Rotary
Drilling Start Dt: 6/28/1999 0:00:00

Date Received:	10/21/1999 0:00:00	**Drilling End Dt:**	6/28/1999 0:00:00
Type of Work:	New Well	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Not Verified
Well Use:	Domestic	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	78	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:	Steel	**Encounter Gas?:**	No
Casing OD:	6.62	**Flow Ctrl Install?:**	No
Casing Thickness:	0.188	**Recommended Rate:**	7
Casing Bottom:	19	**Recom Intake Depth:**	55
Liner Material:	Plastic	**Pump Installed?:**	No
Liner OD:	4.5	**Pump Install Depth:**	
Liner Thickness:	0.237	**Pump Model:**	
Liner Top:	18	**Pump Horsepower:**	
Liner Bottom:	78	**Well Disinfected?:**	No
Perforation by:	Hand Drill	**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments: DRILLER REPORTS DISTANCE FROM TOP OF CASING TO GROUND LEVEL: 16".

Well Owners

Well Owner ID: 10609287
Owner Name: KRALIK, RANDY
PO Box: 49
Address: SITE 8 RR1, STRATHMORE
City:
Postal Code: T1P 1J6
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1904300
Ending Well ID: 1904399

Last Well ID Used:	1904301
Company Name:	KRIEGER DRILLING LTD.
Street Address:	RR 6
City:	CALGARY
Province:	AB
Country:	CA
Postal Code:	T2M 4L5
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Perforations

Perforation ID:	4166619
From:	58
To:	78
Diameter:	0.375
Interval:	0.375

Geophysical Logs

Geophysical Log ID:	5851592
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5448517
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	550138
Diameter:	0
From:	0
To:	78

Lithologies

Depth:	76
Water Bearing:	Yes
Colour:	
Description:	Water Bearing
Material:	Sandstone

Lithologies

Depth:	2
Water Bearing:	No
Colour:	
Description:	
Material:	Topsoil

Lithologies

Depth:	12
Water Bearing:	No
Colour:	Brown

Description:
Material: Sand

Lithologies

Depth: 25
Water Bearing: No
Colour:
Description: Medium Grained
Material: Sandstone

Lithologies

Depth: 42
Water Bearing: No
Colour: Gray
Description:
Material: Shale

Lithologies

Depth: 52
Water Bearing: No
Colour: Gray
Description:
Material: Shale

Lithologies

Depth: 22
Water Bearing: No
Colour: Brown
Description:
Material: Sandstone

Lithologies

Depth: 47
Water Bearing: No
Colour: Gray
Description: Fine Grained
Material: Sandstone

Lithologies

Depth: 78
Water Bearing: No
Colour: Gray
Description: Fine Grained
Material: Siltstone & Sandstone

Pump Tests

Pump Test ID: 10299162
Test Date: 7/1/1999 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 14.8
End Water Level: 15
Water Removal Type: Pump

Water Removal Rate: 5
Removal Depth from: 75
Reason for Short Test:

Pump Test Items

Pump Test Item ID: 7908440
Minutes: 10
Pumping Depth: 14.79
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908443
Minutes: 20
Pumping Depth: 14.87
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908435
Minutes: 5
Pumping Depth: 14.72
Recovery Depth: 14.24

Pump Test Items

Pump Test Item ID: 7908436
Minutes: 6
Pumping Depth: 14.73
Recovery Depth: 14.18

Pump Test Items

Pump Test Item ID: 7908437
Minutes: 7
Pumping Depth: 14.74
Recovery Depth: 14.14

Pump Test Items

Pump Test Item ID: 7908439
Minutes: 9
Pumping Depth: 14.75
Recovery Depth: 14.08

Pump Test Items

Pump Test Item ID: 7908441
Minutes: 12
Pumping Depth: 14.83
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908445
Minutes: 40
Pumping Depth: 14.96
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908433
Minutes: 3
Pumping Depth: 14.72
Recovery Depth: 14.4

Pump Test Items

Pump Test Item ID: 7908434
Minutes: 4
Pumping Depth: 14.72
Recovery Depth: 14.3

Pump Test Items

Pump Test Item ID: 7908442
Minutes: 14
Pumping Depth: 14.85
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908430
Minutes: 0
Pumping Depth: 14.8
Recovery Depth: 15

Pump Test Items

Pump Test Item ID: 7908431
Minutes: 1
Pumping Depth: 14.81
Recovery Depth: 14.59

Pump Test Items

Pump Test Item ID: 7908432
Minutes: 2
Pumping Depth: 14.81
Recovery Depth: 14.45

Pump Test Items

Pump Test Item ID: 7908444
Minutes: 30
Pumping Depth: 14.91
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908447
Minutes: 90
Pumping Depth: 15
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908448
Minutes: 120
Pumping Depth: 15
Recovery Depth:

Pump Test Items

Pump Test Item ID: 7908438
Minutes: 8
Pumping Depth: 14.74
Recovery Depth: 14.16

Pump Test Items

Pump Test Item ID: 7908446
Minutes: 60
Pumping Depth: 14.99
Recovery Depth:

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19 | ***28 of 28*** | ***WSW/174.0*** | ***974.5 / 3.46*** | ***AB*** | ***WWIS***

Well ID: 122608
Driller ID: 11110
Licence No:
GIC Well ID: 122608
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Map
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.394433
Latitude: 51.041523
LSD: SW
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: SW-14-24-25-4

Chemical Analysis

Chem Analysis ID: 2014175
Well Report ID: 122608
Sample No: 6402W
Sample Date: 4/23/1986 0:00:00
Analysis Date: 5/28/1986 0:00:00
Laboratory: AE
Water Level:
Aquifer:
Remarks:

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Total Dissolved Solids

Element Symbol: TDS
Decimal Places: 0
Value: 589

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 40.05465

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 360

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 439.045454

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 9.6

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 999

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: -1.000768

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 230

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 3.999984

Analysis Items

Chemical Analysis ID: 2014175
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 10

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: -0.02

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014175

Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.2

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.99

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.716

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 98.14324

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.56

Analysis Items

Chemical Analysis ID: 2014175
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Well Reports

Well Report ID: 122608
Well Owner ID: 10524624
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 5/16/1986 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Domestic

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Drilled
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Map
Dist Casing Ground:

Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	120	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:		**Encounter Gas?:**	No
Casing OD:	0	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	
Casing Bottom:	0	**Recom Intake Depth:**	
Liner Material:		**Pump Installed?:**	No
Liner OD:	0	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524624
Owner Name: GIROUX, NOVA
PO Box: 1475
Address: STRATHMORE
City:
Postal Code: T0J 3H0
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:

E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5848951
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5445876
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 547497
Diameter: 0
From: 0
To: 120

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20 | **1 of 1** | **SSE/175.5** | **970.7 / -0.31** | **LEROY-S RACE TRAC GAS**
Strathmore 750 LAKESIDE BLVD
AB | **ESAR**

ESA ID: 1340038
ESRD File: 00189030
File Classification: PST
Documents in File: 1
Name: LEROY-S RACE TRAC GAS
10tm Point Coordinate: 112938,5653082
LLD: 7260JK;31
LINC: 0033334780
Map Link: http://www.esar.alberta.ca/esarmap.aspx?esaid=1340038
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=00189030

--Details--
Doc Name: LEROY-S RACE TRAC GAS
Doc Type: pdf
Doc Size (Mb): 1.51
Doc Date: 2/1/2002
Doc Desc: ENVIRONMENTAL SITE ASSESSMENT

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21 | **1 of 1** | **SSE/181.8** | **970.1 / -0.88** | **400 Ranch Market**
Strathmore AB T1P 0B2 | **EHS**

Order No: 20100720010
Status: C
Report Type: Standard Select Report
Report Date: 7/21/2010
Date Received: 7/20/2010
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:
Nearest Intersection:
Municipality:
Client Prov/State: AB
Search Radius (km): 0.25
X: -113.38811
Y: 51.038537

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
22	1 of 1	S/182.4	972.0 / 0.97	STRATHMORE PETRO-PASS 28447 100-RIDGE RD (HWY 1) STRATHMORE T1P 1B8 AB AB	FST

Site No:	195	**Dt Form Rcvd:**	
Tank No:		**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:		**Located 200m:**	
Tank Status:		**Located 500m:**	
Site Status:	Active	**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:		**Plan:**	
Other Contents:		**Municipality:**	
Capacity:		**Postal:**	
Other Capacity:		**Facility 1:**	
UST Secondary:		**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:		**Facility 4:**	
LLD:	Lot 1-10 Block 30 Plan 5273AV		
Spill Containment:			
Tank Status by Site Name:			

Active Tank Sites

UST/AST: 0 / 4

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	1 of 5	S/182.5	972.0 / 0.97	STRATHMORE PETRO-PASS 28447 100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	FST

Site No:	195	**Dt Form Rcvd:**	2007/10/23
Tank No:	5	**Date Removed:**	199511
No of Tanks:		**Removal Reason:**	Tank Replacement
Tank Type:	Aboveground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1-10
UST/AST:		**Block:**	30
Contents:		**Plan:**	5273AV
Other Contents:		**Municipality:**	
Capacity:		**Postal:**	
Other Capacity:		**Facility 1:**	Cardlock or Keylock
UST Secondary:		**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:		**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	2 of 5	S/182.5	972.0 / 0.97	STRATHMORE PETRO-PASS 28447 100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	FST

Site No:	195	**Dt Form Rcvd:**	2007/10/23
Tank No:	4	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Aboveground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1-10
UST/AST:		**Block:**	30
Contents:	Diesel	**Plan:**	5273AV

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Other Contents:		**Municipality:**	
Capacity:	Other - specify in liters	**Postal:**	
Other Capacity:	14,250 litres	**Facility 1:**	Cardlock or Keylock
UST Secondary:		**Facility 2:**	
AST Secondary:	Steel	**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	3 of 5	S/182.5	972.0 / 0.97	STRATHMORE PETRO-PASS 28447 100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	FST

Site No:	195	**Dt Form Rcvd:**	2007/10/23
Tank No:	1	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Aboveground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1-10
UST/AST:		**Block:**	30
Contents:	Gasoline	**Plan:**	5273AV
Other Contents:		**Municipality:**	
Capacity:	Other - specify in liters	**Postal:**	
Other Capacity:	14,250 litres	**Facility 1:**	Cardlock or Keylock
UST Secondary:		**Facility 2:**	
AST Secondary:	Steel	**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	4 of 5	S/182.5	972.0 / 0.97	STRATHMORE PETRO-PASS 28447 100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	FST

Site No:	195	**Dt Form Rcvd:**	2007/10/23
Tank No:	3	**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:	Aboveground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1-10
UST/AST:		**Block:**	30
Contents:	Diesel	**Plan:**	5273AV
Other Contents:		**Municipality:**	
Capacity:	Other - specify in liters	**Postal:**	
Other Capacity:	32,395 litres	**Facility 1:**	Cardlock or Keylock
UST Secondary:		**Facility 2:**	
AST Secondary:	Steel	**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
23	5 of 5	S/182.5	972.0 / 0.97	STRATHMORE PETRO-PASS 28447 100-RIDGE RD. (HWY 1) STRATHMORE TOWN (P) AB T1P 1B8	FST

Site No:	195	**Dt Form Rcvd:**	2007/10/23
Tank No:	2	**Date Removed:**	
No of Tanks:		**Removal Reason:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Tank Type:	Aboveground	**Located 200m:**	NO
Tank Status:	Currently in service	**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1-10
UST/AST:		**Block:**	30
Contents:	Gasoline	**Plan:**	5273AV
Other Contents:		**Municipality:**	
Capacity:	Other - specify in liters	**Postal:**	
Other Capacity:	14,250 litres	**Facility 1:**	Cardlock or Keylock
UST Secondary:		**Facility 2:**	
AST Secondary:	Steel	**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

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24 **1 of 2** **WNW/185.2** **977.1 / 6.06** **TELUS - STRATHMORE TELEPHONE EXCHANGE**
2 STR. & 2 AVE.
STRATHMORE TOWN (P) AB **FST**

Site No:	162	**Dt Form Rcvd:**	
Tank No:		**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:		**Located 200m:**	
Tank Status:		**Located 500m:**	
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	5 TO 6
UST/AST:		**Block:**	10
Contents:		**Plan:**	5894P
Other Contents:		**Municipality:**	STRATHMORE TOWN (P)
Capacity:		**Postal:**	
Other Capacity:		**Facility 1:**	
UST Secondary:		**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:		**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

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24 **2 of 2** **WNW/185.2** **977.1 / 6.06** **TELUS - STRATHMORE TELEPHONE EXCHANGE**
2 STR. & 2 AVE.
STRATHMORE TOWN (P) AB **FST**

Site No:	162	**Dt Form Rcvd:**	1999/07/26
Tank No:	1	**Date Removed:**	199908
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:		**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	5 TO 6
UST/AST:		**Block:**	10
Contents:		**Plan:**	5894P
Other Contents:		**Municipality:**	
Capacity:		**Postal:**	
Other Capacity:		**Facility 1:**	
UST Secondary:		**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:		**Facility 4:**	Commercial / Industrial
LLD:			
Spill Containment:			
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
25	1 of 7	NNE/190.9	976.0 / 5.03	AB	WWIS

Well ID:	122621	**Elevation Source:**	Not Obtained
Driller ID:	11110	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	122621	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.388696
Flowing Well:		**Latitude:**	51.045139
Date Started:		**LSD:**	
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122621	**Annular Seal Mat:**	
Well Owner ID:	10524637	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	0
Drill Company ID:	11110	**Annular Seal Amt:**	
Drill Instance ID:	8337868	**Annular Seal Units:**	
Drill Comp Well ID:		**Drilling Method:**	Drilled
Existing Well ID:		**Drilling Start Dt:**	
Date Received:		**Drilling End Dt:**	7/5/1913 0:00:00
Type of Work:	Well Inventory	**Pack Type:**	
Plug Date:		**Pack Grain Size:**	
Plug Material Type:		**Pack Amount:**	
Plug Mat Amount:		**Pack Units:**	
Plugged Units:		**Loc Verify Method:**	Not Verified
Well Use:	Unknown	**Dist Casing Ground:**	
Other Well Use:		**Artesian Flow?:**	No
Total Depth Drill:	296	**Artesian Flow Rate:**	
Finish Well Depth:		**Gas Depth:**	
Casing Material:		**Encounter Gas?:**	No
Casing OD:	0	**Flow Ctrl Install?:**	No
Casing Thickness:	0	**Recommended Rate:**	0
Casing Bottom:	0	**Recom Intake Depth:**	0
Liner Material:		**Pump Installed?:**	No
Liner OD:	0	**Pump Install Depth:**	
Liner Thickness:	0	**Pump Model:**	
Liner Top:	0	**Pump Horsepower:**	
Liner Bottom:	0	**Well Disinfected?:**	No
Perforation by:		**Other Log:**	
Screen Material:		**Divert Water Src:**	
Screen Size OD:	0	**Divert Water Amt:**	
Screen Attachment:		**Diversion Dt/Time:**	
Screen Top Fitting:		**Is Submitted?:**	Yes
Screen Bot Fitting:		**Is Validated?:**	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		

Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10524637
Owner Name: #WELL 1 TOWER
PO Box:
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5447509
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5850584
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 549130

Diameter: 0
From: 0
To: 296

Pump Tests

Pump Test ID: 10249674
Test Date: 7/5/1913 0:00:00
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 0
End Water Level:
Water Removal Type:
Water Removal Rate: 4
Removal Depth from: 0
Reason for Short Test:

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25 ***2 of 7*** ***NNE/190.9*** ***976.0 / 5.03*** ***AB*** ***WWIS***

Well ID: 239592
Driller ID: 11110
Licence No:
GIC Well ID: 239592
GOA Well Tag No:
Elevation (ft):
Depth (ft):
Date Completed:
Proposed Use:
Lot:
Block:
Plan:
Type of Work:
Flowing Well:
Date Started:
Water Req Per Day:
Gas Present:
Oil Present:
Flow Rate:
Drilling Company:
Owner Mailing Address:
Driller Mailing Address:

Elevation Source: Not Obtained
Method of Drilling:
GPS Obtained: Not Verified
Boundary From:
Distance North:
Distance South:
Distance East:
Distance West:
Additional Desc:
Validated?: Yes
Submitted?: Yes
Location Locked?: Yes
Longitude: -113.388696
Latitude: 51.045139
LSD:
Section: 14
Township: 24
Range: 25
Meridian: 4
DLS Coordinates: -14-24-25-4

Chemical Analysis

Chem Analysis ID: 2014105
Well Report ID: 239592
Sample No: 10669
Sample Date: 10/6/1980 0:00:00
Analysis Date: 10/17/1980 0:00:00
Laboratory: AE
Water Level:
Aquifer:
Remarks:

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 220

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 65.09373

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.37

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 1.4

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014105
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.3

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 151.01494

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.24

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 1

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 31.999872

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.82

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 133

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 13.0112

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 124

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4

Value: 0

Analysis Items

Chemical Analysis ID: 2014105
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 388

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 5.0055

Analysis Items

Chemical Analysis ID: 2014105
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 29.9989

Well Reports

Well Report ID: 239592
Well Owner ID: 10499923
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 10/9/1980 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Plugged Units:
Well Use: Municipal
Other Well Use:
Total Depth Drill: 0
Finish Well Depth:

Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Unknown
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:
Loc Verify Method: Not Verified
Dist Casing Ground:
Artesian Flow?: No
Artesian Flow Rate:
Gas Depth:

Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?: No
Saline Water Depth:
Potability Sample Taken?: No
Potable Sample Sent to AENV?: No
Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10499923
Owner Name: BRENTWOOD SCHOOL
PO Box: 359
Address: STRATHMORE
City:
Postal Code:
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID:	5447514
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5850589
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	549135
Diameter:	0
From:	0
To:	0

25 ***3 of 7*** ***NNE/190.9*** ***976.0 / 5.03*** ***AB*** ***WWIS***

Well ID:	239588	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	239588	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	
Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.388696
Flowing Well:		***Latitude:***	51.045139
Date Started:		***LSD:***	
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014102
Well Report ID:	239588
Sample No:	3113
Sample Date:	4/1/1980 0:00:00
Analysis Date:	4/15/1980 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	
Remarks:	

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1088

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 186.27206

Analysis Items

Chemical Analysis ID: 2014102
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.98

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 1.228

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 462.046154

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4

Value: 0.7

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 668

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 235.0002

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.03

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 50

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 5.00384

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 379

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 8.7

Analysis Items

Chemical Analysis ID: 2014102
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.3

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 11.999952

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 2.0022

Analysis Items

Chemical Analysis ID: 2014102
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Well Reports

Well Report ID: 239588
Well Owner ID: 10499920
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 4/9/1980 0:00:00
Type of Work: Chemistry
Plug Date:
Plug Material Type:
Plug Mat Amount:
Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Unknown
Drilling Start Dt:
Drilling End Dt:
Pack Type:
Pack Grain Size:
Pack Amount:
Pack Units:

Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Municipal	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	0	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10499920
Owner Name:	STRATHMORE, TOWN OF
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB

Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5447511
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5850586
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 549132
Diameter: 0
From: 0
To: 0

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25 **4 of 7** **NNE/190.9** **976.0 / 5.03** **AB** ***WWIS***

Well ID:	239593	**Elevation Source:**	Not Obtained
Driller ID:	11110	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	239593	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.388696
Flowing Well:		**Latitude:**	51.045139
Date Started:		**LSD:**	
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID: 2014101
Well Report ID: 239593
Sample No: 1631
Sample Date: 2/18/1980 0:00:00
Analysis Date: 2/28/1980 0:00:00
Laboratory: AE
Water Level: 94.5
Aquifer:

Remarks:

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 866

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: -1.000768

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 1.999992

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 9.6

Analysis Items

Chemical Analysis ID: 2014101
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.9

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: -5

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 386.038271

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014101
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.92

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4
Value: 0.8

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: 0.0602

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 83.12161

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Total Dissolved Solids
Element Symbol: TDS

Decimal Places: 0
Value: 501

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 190.9989

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.03

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 2.0022

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.308

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 33

Analysis Items

Chemical Analysis ID: 2014101
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 373

Well Reports

Well Report ID:	239593	***Annular Seal Mat:***	
Well Owner ID:	10499925	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Unknown
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	2/22/1980 0:00:00	***Drilling End Dt:***	
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Municipal	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	270	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	0
Casing Bottom:	0	***Recom Intake Depth:***	0
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10499925
Owner Name:	STRATHMORE, TOWN OF
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA

First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599
Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5850590
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5447515
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	549136
Diameter:	0
From:	0
To:	270

Pump Tests

Pump Test ID:	10234087
Test Date:	2/18/1980 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	94.5
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

25	***5 of 7***	***NNE/190.9***	***976.0 / 5.03***	***AB***	***WWIS***

Well ID:	239590	***Elevation Source:***	Not Obtained
Driller ID:	11110	***Method of Drilling:***	
Licence No:		***GPS Obtained:***	Not Verified
GIC Well ID:	239590	***Boundary From:***	
GOA Well Tag No:		***Distance North:***	
Elevation (ft):		***Distance South:***	

Depth (ft):		***Distance East:***	
Date Completed:		***Distance West:***	
Proposed Use:		***Additional Desc:***	
Lot:		***Validated?:***	Yes
Block:		***Submitted?:***	Yes
Plan:		***Location Locked?:***	Yes
Type of Work:		***Longitude:***	-113.388696
Flowing Well:		***Latitude:***	51.045139
Date Started:		***LSD:***	
Water Req Per Day:		***Section:***	14
Gas Present:		***Township:***	24
Oil Present:		***Range:***	25
Flow Rate:		***Meridian:***	4
Drilling Company:		***DLS Coordinates:***	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014104
Well Report ID:	239590
Sample No:	3051
Sample Date:	4/1/1980 0:00:00
Analysis Date:	4/15/1980 0:00:00
Laboratory:	AE
Water Level:	94
Aquifer:	
Remarks:	

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	Total Phosphorus
Element Symbol:	TP
Decimal Places:	4
Value:	0

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	Fluoride
Element Symbol:	F
Decimal Places:	4
Value:	0.75

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	Silica
Element Symbol:	SIO2
Decimal Places:	4
Value:	9.2

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	total Kjeldahl nitrogen
Element Symbol:	TKN
Decimal Places:	4
Value:	0

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 4.99998

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 427.04164

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 367

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Hydroxide
Element Symbol: OH
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 2.001536

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Sodium

Element Symbol: NA
Decimal Places: 4
Value: 200.0011

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 127.18602

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.15

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 2.0022

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.91

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.82

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 557

Analysis Items

Chemical Analysis ID: 2014104
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 9.999

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	pH
Element Symbol:	PH
Decimal Places:	2
Value:	8.7

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	Total Hardness
Element Symbol:	TH
Decimal Places:	4
Value:	23

Analysis Items

Chemical Analysis ID:	2014104
Element Name:	Electrical Conductivity
Element Symbol:	EC
Decimal Places:	0
Value:	946

Well Reports

Well Report ID:	239590	***Annular Seal Mat:***	
Well Owner ID:	10499922	***Annular Seal from:***	0
Driller ID:	2533726	***Annular Seal to:***	0
Drill Company ID:	11110	***Annular Seal Amt:***	
Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Unknown
Existing Well ID:		***Drilling Start Dt:***	
Date Received:	4/9/1980 0:00:00	***Drilling End Dt:***	6/1/1979 0:00:00
Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Municipal	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	255	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	0
Casing Bottom:	0	***Recom Intake Depth:***	0
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes
Encounter Saline Water?:	No		
Saline Water Depth:			
Potability Sample Taken?:	No		
Potable Sample Sent to AENV?:	No		

Approval Holder Sign Date:
Drilling Report Given to Owner: No
Model Output Rating:
Remedial Action:
Flow Control Description:
Pump Type Installed:
Created by:
Submitted by:
Additional Comments:

Well Owners

Well Owner ID: 10499922
Owner Name: STRATHMORE, TOWN OF
PO Box: 359
Address: STRATHMORE
City:
Postal Code: T0J 3H0
Province:
Country:

Drillers

Driller ID: 2533726
Last Name: DRILLER
Middle Initial: NA
First Name: UNKNOWN
Journeyman No: 1
Is Active?: Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5850588
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5447513
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 549134

Diameter:	0
From:	0
To:	255

Pump Tests

Pump Test ID:	10234086
Test Date:	4/1/1980 0:00:00
Start Time:	1/12/1900 0:00:00
Taken from Top of Casing:	No
Static Water Level:	94
End Water Level:	
Water Removal Type:	
Water Removal Rate:	
Removal Depth from:	0
Reason for Short Test:	

---

25 | ***6 of 7*** | ***NNE/190.9*** | ***976.0 / 5.03*** | ***AB*** | ***WWIS***

Well ID:	239589	**Elevation Source:**	Not Obtained
Driller ID:	11110	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	239589	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.388696
Flowing Well:		**Latitude:**	51.045139
Date Started:		**LSD:**	
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Chemical Analysis

Chem Analysis ID:	2014103
Well Report ID:	239589
Sample No:	3114
Sample Date:	4/1/1980 0:00:00
Analysis Date:	4/15/1980 0:00:00
Laboratory:	AE
Water Level:	
Aquifer:	
Remarks:	

Analysis Items

Chemical Analysis ID:	2014103
Element Name:	Hydroxide
Element Symbol:	OH
Decimal Places:	4
Value:	0

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Total Dissolved Solids
Element Symbol: TDS
Decimal Places: 0
Value: 614

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Electrical Conductivity
Element Symbol: EC
Decimal Places: 0
Value: 1019

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Ion Balance
Element Symbol: IONBAL
Decimal Places: 4
Value: 0.97

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Total Hardness
Element Symbol: TH
Decimal Places: 4
Value: 13

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Silica
Element Symbol: SIO2
Decimal Places: 4
Value: 7.7

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Sulphate
Element Symbol: SO4
Decimal Places: 4
Value: 166.24322

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Nitrate plus Nitrite
Element Symbol: NO2_NO3_N
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Carbonate
Element Symbol: CO3
Decimal Places: 4
Value: 14.001

Analysis Items

Chemical Analysis ID: 2014103
Element Name: total Kjeldahl nitrogen
Element Symbol: TKN
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Magnesium
Element Symbol: MG
Decimal Places: 4
Value: 1.000768

Analysis Items

Chemical Analysis ID: 2014103
Element Name: pH
Element Symbol: PH
Decimal Places: 2
Value: 8.8

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Nitrite
Element Symbol: NO2
Decimal Places: 4
Value: -0.0504

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Chloride
Element Symbol: CL
Decimal Places: 4
Value: 3.0033

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Total Alkalinity
Element Symbol: TA
Decimal Places: 4
Value: 350

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Fluoride
Element Symbol: F
Decimal Places: 4

Value: 1.53

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Iron
Element Symbol: FE
Decimal Places: 4
Value: 0.04

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Total Phosphorus
Element Symbol: TP
Decimal Places: 4
Value: 0

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Sodium
Element Symbol: NA
Decimal Places: 4
Value: 230

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Bicarbonate
Element Symbol: HCO3
Decimal Places: 4
Value: 397.041259

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Potassium
Element Symbol: K
Decimal Places: 4
Value: 0.716

Analysis Items

Chemical Analysis ID: 2014103
Element Name: Calcium
Element Symbol: CA
Decimal Places: 4
Value: 2.999988

Well Reports

Well Report ID: 239589
Well Owner ID: 10499921
Driller ID: 2533726
Drill Company ID: 11110
Drill Instance ID: 8337868
Drill Comp Well ID:
Existing Well ID:
Date Received: 4/9/1980 0:00:00
Annular Seal Mat:
Annular Seal from: 0
Annular Seal to: 0
Annular Seal Amt:
Annular Seal Units:
Drilling Method: Unknown
Drilling Start Dt:
Drilling End Dt: 5/1/1972 0:00:00

Type of Work:	Chemistry	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Municipal	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	150	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	
Casing Bottom:	0	***Recom Intake Depth:***	
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10499921
Owner Name:	STRATHMORE, TOWN OF#NORTH WELL
PO Box:	359
Address:	STRATHMORE
City:	
Postal Code:	T0J 3H0
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID:	1973500
Ending Well ID:	1973599
Last Well ID Used:	1973599

Company Name:	UNKNOWN DRILLER
Street Address:	UNKNOWN
City:	UNKNOWN
Province:	AB
Country:	CA
Postal Code:	
E-Mail:	gwinfo@gov.ab.ca
Is Active?:	No

Geophysical Logs

Geophysical Log ID:	5850587
Log Type:	Gamma
Log Taken?:	No
Sent to AENV?:	No

Geophysical Logs

Geophysical Log ID:	5447512
Log Type:	Electric
Log Taken?:	No
Sent to AENV?:	No

Boreholes

Borehole ID:	549133
Diameter:	0
From:	0
To:	150

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25 ***7 of 7*** ***NNE/190.9*** ***976.0 / 5.03*** ***AB*** ***WWIS***

Well ID:	122620	**Elevation Source:**	Not Obtained
Driller ID:	11110	**Method of Drilling:**	
Licence No:		**GPS Obtained:**	Not Verified
GIC Well ID:	122620	**Boundary From:**	
GOA Well Tag No:		**Distance North:**	
Elevation (ft):		**Distance South:**	
Depth (ft):		**Distance East:**	
Date Completed:		**Distance West:**	
Proposed Use:		**Additional Desc:**	
Lot:		**Validated?:**	Yes
Block:		**Submitted?:**	Yes
Plan:		**Location Locked?:**	Yes
Type of Work:		**Longitude:**	-113.388696
Flowing Well:		**Latitude:**	51.045139
Date Started:		**LSD:**	
Water Req Per Day:		**Section:**	14
Gas Present:		**Township:**	24
Oil Present:		**Range:**	25
Flow Rate:		**Meridian:**	4
Drilling Company:		**DLS Coordinates:**	-14-24-25-4
Owner Mailing Address:			
Driller Mailing Address:			

Well Reports

Well Report ID:	122620	**Annular Seal Mat:**	
Well Owner ID:	10524636	**Annular Seal from:**	0
Driller ID:	2533726	**Annular Seal to:**	0
Drill Company ID:	11110	**Annular Seal Amt:**	

Drill Instance ID:	8337868	***Annular Seal Units:***	
Drill Comp Well ID:		***Drilling Method:***	Drilled
Existing Well ID:		***Drilling Start Dt:***	
Date Received:		***Drilling End Dt:***	
Type of Work:	Well Inventory	***Pack Type:***	
Plug Date:		***Pack Grain Size:***	
Plug Material Type:		***Pack Amount:***	
Plug Mat Amount:		***Pack Units:***	
Plugged Units:		***Loc Verify Method:***	Not Verified
Well Use:	Unknown	***Dist Casing Ground:***	
Other Well Use:		***Artesian Flow?:***	No
Total Depth Drill:	210	***Artesian Flow Rate:***	
Finish Well Depth:		***Gas Depth:***	
Casing Material:		***Encounter Gas?:***	No
Casing OD:	0	***Flow Ctrl Install?:***	No
Casing Thickness:	0	***Recommended Rate:***	0
Casing Bottom:	0	***Recom Intake Depth:***	0
Liner Material:		***Pump Installed?:***	No
Liner OD:	0	***Pump Install Depth:***	
Liner Thickness:	0	***Pump Model:***	
Liner Top:	0	***Pump Horsepower:***	
Liner Bottom:	0	***Well Disinfected?:***	No
Perforation by:		***Other Log:***	
Screen Material:		***Divert Water Src:***	
Screen Size OD:	0	***Divert Water Amt:***	
Screen Attachment:		***Diversion Dt/Time:***	
Screen Top Fitting:		***Is Submitted?:***	Yes
Screen Bot Fitting:		***Is Validated?:***	Yes

Encounter Saline Water?:	No
Saline Water Depth:	
Potability Sample Taken?:	No
Potable Sample Sent to AENV?:	No
Approval Holder Sign Date:	
Drilling Report Given to Owner:	No
Model Output Rating:	
Remedial Action:	
Flow Control Description:	
Pump Type Installed:	
Created by:	
Submitted by:	
Additional Comments:	

Well Owners

Well Owner ID:	10524636
Owner Name:	#WELL 3 DITCHRIDER
PO Box:	
Address:	STRATHMORE
City:	
Postal Code:	
Province:	
Country:	

Drillers

Driller ID:	2533726
Last Name:	DRILLER
Middle Initial:	NA
First Name:	UNKNOWN
Journeyman No:	1
Is Active?:	Yes

Drilling Companies

Starting Well ID: 1973500
Ending Well ID: 1973599
Last Well ID Used: 1973599
Company Name: UNKNOWN DRILLER
Street Address: UNKNOWN
City: UNKNOWN
Province: AB
Country: CA
Postal Code:
E-Mail: gwinfo@gov.ab.ca
Is Active?: No

Geophysical Logs

Geophysical Log ID: 5447508
Log Type: Electric
Log Taken?: No
Sent to AENV?: No

Geophysical Logs

Geophysical Log ID: 5850583
Log Type: Gamma
Log Taken?: No
Sent to AENV?: No

Boreholes

Borehole ID: 549129
Diameter: 0
From: 0
To: 210

Pump Tests

Pump Test ID: 10249673
Test Date:
Start Time: 1/12/1900 0:00:00
Taken from Top of Casing: No
Static Water Level: 190
End Water Level:
Water Removal Type:
Water Removal Rate:
Removal Depth from: 0
Reason for Short Test:

26	*1 of 1*	*W/198.9*	*976.2 / 5.15*	***CALGARY CO-OPERATIVE ASSOCIATION LTD*** ***320 2 ST*** ***STRATHMORE AB T2H 0M5***	***RST***

Headcode: 1186800
Headcode Desc: Service Stations-Gasoline, Oil & Natural Gas
Phone: 4039343044
List Name:
Description:

27	*1 of 1*	*W/200.8*	*975.0 / 4.00*	***216 A 4 Ave*** ***Strathmore AB T1P1B9***	***EHS***

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Order No:	20130812017	**Nearest Intersection:**	
Status:	C	**Municipality:**	
Report Type:	Standard Report	**Client Prov/State:**	AB
Report Date:	21-AUG-13	**Search Radius (km):**	.25
Date Received:	12-AUG-13	**X:**	-113.395029
Previous Site Name:		**Y:**	51.041701
Lot/Building Size:			
Additional Info Ordered:	Fire Insur. Maps and/or Site Plans		

28 | **1 of 1** | **SSW/212.4** | **973.0 / 2.00** | **STRATHMORE ESSO & GENERAL STORE**
Strathmore 200 RIDGE RD
AB | **ESAR**

ESA ID:	4994390
ESRD File:	00308284
File Classification:	PST
Documents in File:	1
Name:	STRATHMORE ESSO & GENERAL STORE
10tm Point Coordinate:	112677,5653047
LLD:	5276AV;29;1
LINC:	0013891619
Map Link:	http://www.esar.alberta.ca/esarmap.aspx?esaid=4994390
ESAR Link:	http://www.esar.alberta.ca/esarmain.aspx?esaid=00308284

--Details--

Doc Name:	STRATHMORE ESSO & GENERAL STORE
Doc Type:	PDF
Doc Size (Mb):	0.56
Doc Date:	5/21/2008
Doc Desc:	PTMAA Report

29 | **1 of 1** | **WNW/223.9** | **977.8 / 6.76** | **STRATHMORE COOP GROCERY STORE**
Strathmore 320 2 ST
AB | **ESAR**

ESA ID:	9472233
ESRD File:	SCD02372
File Classification:	SCD
Documents in File:	4
Name:	STRATHMORE COOP GROCERY STORE
10tm Point Coordinate:	112341,5653629
LLD:	4;25;24;14;SW 8810016;9;34 5894P;9;OT & 1-12
LINC:	0013061866 0021892179 0021964382 0019074228
Map Link:	
ESAR Link:	http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD02372

--Details--

Doc Name:	STRATHMORE COOP GROCERY STORE
Doc Type:	pdf
Doc Size (Mb):	0.41
Doc Date:	10/27/2014
Doc Desc:	Record of Site Condition 320 2 Street Strathmore
Doc Name:	STRATHMORE COOP GROCERY STORE
Doc Type:	pdf
Doc Size (Mb):	2.06
Doc Date:	10/1/2014
Doc Desc:	Phase II Environmental Site Assessment 320 2 Street Strathmore
Doc Name:	STRATHMORE COOP GROCERY STORE
Doc Type:	msg

Doc Size (Mb): 0.04
Doc Date: 11/20/2014
Doc Desc: Email Phase II ESA Report and RSC 320 2 ST Strathmore

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30 **1 of 6** **SSW/224.4** **973.0 / 2.00** **STRATHMORE ESSO & GENERAL STORE** **FST**
200-RIDGE RD.
STRATHMORE TOWN (P) AB T1P 1B6

Site No:	4744	**Dt Form Rcvd:**	2003/07/25
Tank No:	3	**Date Removed:**	200805
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Diesel	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	22,700 litres (5,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	Commercial / Industrial
LLD:			
Spill Containment:	Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

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30 **2 of 6** **SSW/224.4** **973.0 / 2.00** **STRATHMORE ESSO & GENERAL STORE** **FST**
200-RIDGE RD.
STRATHMORE TOWN (P) AB

Site No:	4744	**Dt Form Rcvd:**	
Tank No:		**Date Removed:**	
No of Tanks:		**Removal Reason:**	
Tank Type:		**Located 200m:**	
Tank Status:		**Located 500m:**	
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:		**Plan:**	
Other Contents:		**Municipality:**	STRATHMORE TOWN (P)
Capacity:		**Postal:**	
Other Capacity:		**Facility 1:**	
UST Secondary:		**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:		**Facility 4:**	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

---

30 **3 of 6** **SSW/224.4** **973.0 / 2.00** **STRATHMORE ESSO & GENERAL STORE** **FST**
200-RIDGE RD.
STRATHMORE TOWN (P) AB T1P 1B6

Site No:	4744	**Dt Form Rcvd:**	2003/07/25
Tank No:	4	**Date Removed:**	200805
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	22,700 litres (5,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	Commercial / Industrial
LLD:			
Spill Containment:	Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

30	4 of 6	SSW/224.4	973.0 / 2.00	**STRATHMORE ESSO & GENERAL STORE** **200-RIDGE RD.** **STRATHMORE TOWN (P) AB T1P 1B6**	FST

Site No:	4744	**Dt Form Rcvd:**	2003/07/25
Tank No:	1	**Date Removed:**	200805
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	36,400 litres (8,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	Commercial / Industrial
LLD:			
Spill Containment:	Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

30	5 of 6	SSW/224.4	973.0 / 2.00	**STRATHMORE ESSO & GENERAL STORE** **200-RIDGE RD.** **STRATHMORE TOWN (P) AB T1P 1B6**	FST

Site No:	4744	**Dt Form Rcvd:**	2003/07/25
Tank No:	2	**Date Removed:**	200805
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	
UST/AST:		**Block:**	
Contents:	Gasoline	**Plan:**	
Other Contents:		**Municipality:**	
Capacity:	36,400 litres (8,000 gal.)	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Unknown	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	Commercial / Industrial
LLD:			
Spill Containment:	Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

30	6 of 6	SSW/224.4	973.0 / 2.00	**STRATHMORE ESSO & GENERAL STORE** **200 RIDGE RD** **STRATHMORE AB T1P 1B6**	RST

Headcode:	1186800
Headcode Desc:	Service Stations-Gasoline, Oil & Natural Gas

Phone: 4039344866
List Name:
Description:

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31 | **1 of 1** | **W/224.6** | **976.7 / 5.69** | **STRATHMORE COOP GROCERY STORE**
Strathmore 320 2 ST
AB | **ESAR**

ESA ID: 9472233
ESRD File: SCD02372
File Classification: SCD
Documents in File: 4
Name: STRATHMORE COOP GROCERY STORE
10tm Point Coordinate: 112378,5653536
LLD: 4;25;24;14;SW 8810016;9;34 5894P;9;OT & 1-12
LINC: 0013061866 0021892179 0021964382 0019074228
Map Link:
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD02372

--Details--
Doc Name: STRATHMORE COOP GROCERY STORE
Doc Type: pdf
Doc Size (Mb): 0.41
Doc Date: 10/27/2014
Doc Desc: Record of Site Condition 320 2 Street Strathmore

Doc Name: STRATHMORE COOP GROCERY STORE
Doc Type: pdf
Doc Size (Mb): 2.06
Doc Date: 10/1/2014
Doc Desc: Phase II Environmental Site Assessment 320 2 Street Strathmore

Doc Name: STRATHMORE COOP GROCERY STORE
Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 11/20/2014
Doc Desc: Email Phase II ESA Report and RSC 320 2 ST Strathmore

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32 | **1 of 3** | **S/225.3** | **972.0 / 1.00** | **D.C.'S MOHAWK**
510 N HWY 1-COUNTRY LANE MALL
STRATHMORE TOWN (P) AB | **FST**

Site No:	6715	**Dt Form Rcvd:**	2007/11/07
Tank No:	3	**Date Removed:**	200811
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1
UST/AST:		**Block:**	17
Contents:	Diesel	**Plan:**	9411613
Other Contents:		**Municipality:**	
Capacity:	15,000 litres	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Double Walled Tank	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	

LLD:
Spill Containment: Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes
Tank Status by Site Name:

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
32	2 of 3	S/225.3	972.0 / 1.00	D.C.'S MOHAWK 510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	FST

Site No:	6715	**Dt Form Rcvd:**	2007/11/07
Tank No:	1	**Date Removed:**	200811
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1
UST/AST:		**Block:**	17
Contents:	Gasoline	**Plan:**	9411613
Other Contents:		**Municipality:**	
Capacity:	Other - specify in liters	**Postal:**	
Other Capacity:	40,000 litres	**Facility 1:**	Retail
UST Secondary:	Double Walled Tank	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:	Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
32	3 of 3	S/225.3	972.0 / 1.00	D.C.'S MOHAWK 510 N HWY 1-COUNTRY LANE MALL STRATHMORE TOWN (P) AB	FST

Site No:	6715	**Dt Form Rcvd:**	2007/11/07
Tank No:	2	**Date Removed:**	200811
No of Tanks:		**Removal Reason:**	No Longer Required
Tank Type:	Underground	**Located 200m:**	NO
Tank Status:		**Located 500m:**	NO
Site Status:		**DLS Coord:**	
Date Last Used:		**Lot:**	1
UST/AST:		**Block:**	17
Contents:	Gasoline	**Plan:**	9411613
Other Contents:		**Municipality:**	
Capacity:	25,000 litres	**Postal:**	
Other Capacity:		**Facility 1:**	Retail
UST Secondary:	Double Walled Tank	**Facility 2:**	
AST Secondary:		**Facility 3:**	
Overfill Prevention:	Liquid - Tight Fill Box	**Facility 4:**	
LLD:			
Spill Containment:	Liquid - Tight Fill Box; Liquid / Vapour Tight Couplings On Fill Pipes		
Tank Status by Site Name:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
33	1 of 1	W/226.0	975.0 / 4.00	216 4 Avenue Strathmore AB T1P 1B9	EHS

Order No:	20180925185	**Nearest Intersection:**	
Status:	C	**Municipality:**	Strathmore
Report Type:	Standard Report	**Client Prov/State:**	AB
Report Date:	01-OCT-18	**Search Radius (km):**	.25
Date Received:	25-SEP-18	**X:**	-113.395368
Previous Site Name:		**Y:**	51.041619
Lot/Building Size:			
Additional Info Ordered:			

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
34	1 of 1	E/233.2	971.0 / 0.00	100 Ranchwood Lane Strathmore AB T1P 1M8	EHS

Order No:	20100901049	**Nearest Intersection:**	

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB

Status:	C	**Municipality:**	
Report Type:	Custom Report	**Client Prov/State:**	AB
Report Date:	9/13/2010	**Search Radius (km):**	0.25
Date Received:	9/1/2010	**X:**	-113.38587
Previous Site Name:		**Y:**	51.042442
Lot/Building Size:			
Additional Info Ordered:			

35 | **1 of 1** | **WNW/234.9** | **977.8 / 6.76** | **AGT SWITCHING STATION** **Strathmore 2 AVE 3 ST** **AB** | **ESAR**

ESA ID:	1339017
ESRD File:	00144471
File Classification:	PST
Documents in File:	1
Name:	AGT SWITCHING STATION
10tm Point Coordinate:	112343,5653581
LLD:	5894P;10;5,6
LINC:	0019068923
Map Link:	http://www.esar.alberta.ca/esarmap.aspx?esaid=1339017
ESAR Link:	http://www.esar.alberta.ca/esarmain.aspx?esaid=00144471

--Details--

Doc Name:	AGT SWITCHING STATION
Doc Type:	pdf
Doc Size (Mb):	0.04
Doc Date:	3/22/2006
Doc Desc:	CORRESPONDENCE
Doc Name:	AGT SWITCHING STATION
Doc Type:	pdf
Doc Size (Mb):	1.75
Doc Date:	7/1/1995
Doc Desc:	SOIL CLEANUP AND INSTALLATION OF PASSIVE VENTILATION
Doc Name:	AGT SWITCHING STATION
Doc Type:	pdf
Doc Size (Mb):	1.78
Doc Date:	12/1/1994
Doc Desc:	PHASE II ENVIRONMENTAL SITE ASSESSMENT

36 | **1 of 1** | **W/235.1** | **976.7 / 5.69** | **STRATHMORE COOP GROCERY STORE** **Strathmore 320 2 ST** **AB** | **ESAR**

ESA ID:	9472233
ESRD File:	SCD02372
File Classification:	SCD
Documents in File:	4
Name:	STRATHMORE COOP GROCERY STORE
10tm Point Coordinate:	112380,5653512
LLD:	4;25;24;14;SW 8810016;9;34 5894P;9;OT & 1-12
LINC:	0013061866 0021892179 0021964382 0019074228
Map Link:	
ESAR Link:	http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD02372

--Details--

Doc Name:	STRATHMORE COOP GROCERY STORE
Doc Type:	pdf
Doc Size (Mb):	0.41

Doc Date: 10/27/2014
Doc Desc: Record of Site Condition 320 2 Street Strathmore

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Doc Type: msg
Doc Size (Mb): 0.04
Doc Date: 11/20/2014
Doc Desc: Email Phase II ESA Report and RSC 320 2 ST Strathmore

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37 | **1 of 1** | **W/261.6** | **976.3 / 5.31** | **Units 1 &2, 232 -3rd Avenue Strathmore AB** | **EHS**

Order No: 20070807011
Status: C
Report Type: CAN - Complete Report
Report Date: 8/16/2007
Date Received: 8/7/2007
Previous Site Name:
Lot/Building Size:
Additional Info Ordered:

Nearest Intersection: 3rd Ave &2nd Street
Municipality:
Client Prov/State:
Search Radius (km): 0.25
X: -113.396488
Y: 51.042226

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38 | **1 of 1** | **W/272.2** | **977.0 / 6.02** | **STRATHMORE COOP GROCERY STORE Strathmore 320 2 ST AB** | **ESAR**

ESA ID: 9472233
ESRD File: SCD02372
File Classification: SCD
Documents in File: 4
Name: STRATHMORE COOP GROCERY STORE
10tm Point Coordinate: 112337,5653512
LLD: 4;25;24;14;SW 8810016;9;34 5894P;9;OT & 1-12
LINC: 0013061866 0021892179 0021964382 0019074228
Map Link:
ESAR Link: http://www.esar.alberta.ca/esarmain.aspx?esaid=SCD02372

--Details--
Doc Name: STRATHMORE COOP GROCERY STORE
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Doc Name: STRATHMORE COOP GROCERY STORE
Doc Type: pdf
Doc Size (Mb): 2.06
Doc Date: 10/1/2014
Doc Desc: Phase II Environmental Site Assessment 320 2 Street Strathmore

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
39	1 of 3	SSW/292.2	974.0 / 2.97	220 Ridge Rd. Strathmore AB T1P 1B6	EHS

Order No: 20030210066
Status: C
Report Type: Site Report
Report Date: 2/19/03
Date Received: 2/10/03
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Fire Insur. Maps and/or Site Plans and/or Inspection Reports

Nearest Intersection:
Municipality:
Client Prov/State: ON
Search Radius (km): 0.25
X: -113.392503
Y: 51.038063

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
39	2 of 3	SSW/292.2	974.0 / 2.97	220 Ridge Road Strathmore AB T1P 1B6	EHS

Order No: 20050112029
Status: C
Report Type:
Report Date: 1/14/2005
Date Received: 1/12/2005
Previous Site Name:
Lot/Building Size:
Additional Info Ordered: Fire Insur. Maps and/or Site Plans

Nearest Intersection:
Municipality:
Client Prov/State: AB
Search Radius (km): 0.25
X: -113.39332
Y: 51.038146

Map Key	Number of Records	Direction/ Distance (m)	Elev/Diff (m)	Site	DB
39	3 of 3	SSW/292.2	974.0 / 2.97	GOLDER ASSOCIATES 220 RIDGE RD STRATHMORE AB T1P 1B6	GEN

Approval No:
Record ID: 1584
Approval Year: 2005

DLS:
Phone:
Contact:

--Details--
Material Code: 9.00
Material Description: Miscellaneous Dangerous Goods

Unplottable Summary

Total: 4 Unplottable sites

DB	Company Name/Site Name	Address	City	Postal
FST	MILLER AG SUPPLY ESSO BULK 88706	HWY 1	STRATHMORE TOWN (P) AB	
PES	WHEATLAND COUNTY	HWY 1 RR 1	Strathmore AB	T1P 1J6
PES	Wheatland County, Strathmore	HWY 1 RR 1	Strathmore AB	T1P 1J6
SCT	Cora Lynn Drilling LP	Hwy 1, Box 48, Site 8, R.R. 1	Strathmore AB	T1P 1J6

Unplottable Report

Site: ***MILLER AG SUPPLY ESSO BULK 88706***
HWY 1 STRATHMORE TOWN (P) AB

Database: ***FST***

Site No:	3146	***Dt Form Rcvd:***	
Tank No:		***Date Removed:***	
No of Tanks:		***Removal Reason:***	
Tank Type:		***Located 200m:***	
Tank Status:		***Located 500m:***	
Site Status:		***DLS Coord:***	NE-11-24-25-4
Date Last Used:		***Lot:***	
UST/AST:		***Block:***	
Contents:		***Plan:***	
Other Contents:		***Municipality:***	STRATHMORE TOWN (P)
Capacity:		***Postal:***	
Other Capacity:		***Facility 1:***	
UST Secondary:		***Facility 2:***	
AST Secondary:		***Facility 3:***	
Overfill Prevention:		***Facility 4:***	
LLD:			
Spill Containment:			
Tank Status by Site Name:			

Site: ***WHEATLAND COUNTY***
HWY 1 RR 1 Strathmore AB T1P 1J6

Database: ***PES***

Approval NO:		***Region:***	
AWSA NO:		***Vendor Type:***	
Block:		***Lot:***	
Expiry Date:		***Plan:***	
Approval Vendor Name:	WHEATLAND COUNTY PESTICIDE SERVICE AND VENDOR, STRATHMORE		
Approval Holder:	WHEATLAND COUNTY		

Site: ***Wheatland County, Strathmore***
HWY 1 RR 1 Strathmore AB T1P 1J6

Database: ***PES***

Approval NO:		***Region:***	
AWSA NO:	n/a	***Vendor Type:***	
Block:		***Lot:***	
Expiry Date:	31-Mar-2014	***Plan:***	
Approval Vendor Name:			
Approval Holder:			

Site: ***Cora Lynn Drilling LP***
Hwy 1, Box 48, Site 8, R.R. 1 Strathmore AB T1P 1J6

Database: ***SCT***

Established:
Plant Size (ft²):
Employment:

--Details--

Description:	Oil and Gas Contract Drilling
SIC/NAICS Code:	213111

Appendix: Database Descriptions

Environmental Risk Information Services (ERIS) can search the following databases. The extent of historical information varies with each database and current information is determined by what is publicly available to ERIS at the time of update. ***Note:*** *Databases denoted with " * " indicates that the database will no longer be updated. See the individual database description for more information.*

Well Licenses: Provincial AER OGW

Locations of Well Licenses made available by the Alberta Energy Regulator (AER) as ST37. Includes Active, Suspended, Abandoned, Drilled and Cased Oil, Gas, Crude Bitumen well licenses, as well as Observation, Injection, Disposal, and Undefined well licences.

Government Publication Date: Sep 30, 2018

Agriculture and Fisheries - Certificates of Approval: Provincial AGR

This database contains approvals for processes pertaining to drying of alfalfa/forage/peat, feedlots, fish farms and feed/seed mills. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Oil and Gas Wells: Provincial AOGW

The Alberta Energy Utilities Board - now the Alberta Energy Regulator (AER) - maintained a database of oil and gas wells drilled in the province of Alberta. The database contains information on well name, licensee name, license number, location, status, total well depth and date of final drilling. Please note that this database will not be updated, information on wells drilled after September 2003 can be found in the Oil and Gas Wells (OGW) database under the 'Private Source Database' section.

Government Publication Date: 1883-Sept 2003*

Automobile Wrecking & Supplies: Private AUWR

This database provides an inventory of known locations that are involved in the scrap metal, automobile wrecking/recycling, and automobile parts & supplies industry. Information is provided on the company name, location and business type.

Government Publication Date: 1999-Jan 31, 2019

Waste Management Facilities - Certificates of Approval: Provincial CAWD

This database contains approvals for processes pertaining to waste management facilities (hazardous waste manifesting, waste disposal/incineration/open burning/processing/storage/treatment). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993 - Jan 2018

Confined Feeding Operations: Provincial CFO

In 1991, the Natural Resources Conservation Board (NRCB) was created to review applications for approval of major natural resource development projects in Alberta. In January 2002, the NRCB was given the responsibility to regulate the Confined Feeding Operation industry. The Agricultural Operation Practices Act defines a confined feeding operation to be: "an activity on land that is fenced or enclosed or within buildings where livestock are confined for the purpose of growing, sustaining, finishing or breeding by means other than grazing, but does not include seasonal feeding and bedding sites." Under the AOPA regulations, all new or expanding confined feeding operations (CFOs) or manure storage facilities are required to make an application for Approval, Registration or Authorization to the NRCB before construction or expansion commences. Geographic coordinates were provided in DLS (Dominion Land Survey) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the Quarter section only.

Government Publication Date: 2002-Jan 2019

Chemical Processing Operations - Certificates of Approval: Provincial CHEM

This database contains approvals for processes pertaining to the manufacturing and use of chemical products and pesticides. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Compressed Natural Gas Stations: Private CNG

Canada has a network of public access compressed natural gas (CNG) refuelling stations. These stations dispense natural gas in compressed form at 3,000 pounds per square inch (psi), the pressure which is allowed within the current Canadian codes and standards. The majority of natural gas refuelling is located at existing retail gasoline that have a separate refuelling island for natural gas. This list of stations is made available by the Canadian Natural Gas Vehicle Alliance.

Government Publication Date: Dec 2012 - Dec 2018

Compliance and Convictions: Provincial CONV

This database summarizes the penalties and convictions handed down by the Alberta courts. This database identifies companies and/or individuals that have been found guilty of environmental offenses under Alberta's Environmental Protection Legislation. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Unfortunately, from state of the data, the location that the address pertains to cannot be confirmed.

Government Publication Date: 1993-Sep 2018

Dry Cleaning Facilities: Federal DRYCLEANERS

List of dry cleaning facilities made available by Environment and Climate Change Canada. Environment and Climate Change Canada's Tetrachloroethylene (Use in Dry Cleaning and Reporting Requirements) Regulations (SOR/2003-79) are intended to reduce releases of tetrachloroethylene to the environment from dry cleaning facilities.

Government Publication Date: Jan 2004-Dec 2017

Enforcement Action Summary: Provincial EAS

This database maintained by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB) - summarizes high risk enforcement action 1, high risk enforcement action 2 (persistent noncompliance), high risk enforcement action 3 (failure to comply or demonstrated disregard), low risk enforcement action - global REFER and legislative/regulatory enforcement action. Fields will include licensee/company name, non-compliance event, date of enforcement, location, etc.

Government Publication Date: 2007-Jan 2019

Environmental Effects Monitoring: Federal EEM

The Environmental Effects Monitoring program assesses the effects of effluent from industrial or other sources on fish, fish habitat and human usage of fisheries resources. Since 1992, pulp and paper mills have been required to conduct EEM studies under the Pulp and Paper Effluent Regulations. This database provides information on the mill name, geographical location and sub-lethal toxicity data.

Government Publication Date: 1992-2007*

ERIS Historical Searches: Private EHS

ERIS has compiled a database of all environmental risk reports completed since March 1999. Available fields for this database include: site location, date of report, type of report, and search radius. As per all other databases, the ERIS database can be referenced on both the map and "Statistical Profile" page.

Government Publication Date: 1999-Jan 31, 2019

Environmental Issues Inventory System: Federal EIIS

The Environmental Issues Inventory System was developed through the implementation of the Environmental Issues and Remediation Plan. This plan was established to determine the location and severity of contaminated sites on inhabited First Nation reserves, and where necessary, to remediate those that posed a risk to health and safety; and to prevent future environmental problems. The EIIS provides information on the reserve under investigation, inventory number, name of site, environmental issue, site action (Remediation, Site Assessment), and date investigation completed.

Government Publication Date: 1992-2001*

Alberta Environment & Parks Storage Tanks: Provincial EPST

List of storage tanks under the purview of Alberta Environment and Parks.

Government Publication Date: Jul 31, 2016

Environment Protection & Enhancement Act and Water Act Public Notices: Provincial EPWN

A list of Public Notices of Applications, Decisions, and Revisions pertaining to applications made to Alberta Environment and Parks under the Water Act (WA) and Alberta Environment Protection and Enhancement Act (EPEA). Dominion Land Survey (DLS) locations provided by the source are subject to accuracy limitations inherent to the DLS system.

Government Publication Date: Jan 31, 2019

Environmental Site Assessment Repository: Provincial ESAR

Environmental site assessments determine the quality of soil and groundwater of a site, particularly at retail gas stations and other commercial and industrial sites. A site assessment does not necessarily mean a site is, or ever was, contaminated. Alberta's Environmental Site Assessment Repository (ESAR) is an online, searchable database that provides scientific and technical information about assessed and/or reclaimed sites throughout Alberta. Search Alberta's ESAR using meridian, range, township, and section values at http://www.esar.alberta.ca/esarmain.aspx to gain access to reclamation certificates and/or associated files (applications, reports).

Government Publication Date: 1960-Jun 2018

Facility List: Provincial FAC

This database contains a complete list of new, active and suspended facilities in Alberta including batteries, gas plants, meter stations, and other facilities. Information provided includes: facility id, facility name, operator name, sub type description, location, facility l license no, and operational status; now includes EDCT (Energy Development Category Type) type and description. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Government Publication Date: Up to Dec 31, 2018

Federal Convictions: Federal FCON

Environment Canada maintains a database referred to as the "Environmental Registry" that details prosecutions under the Canadian Environmental Protection Act (CEPA) and the Fisheries Act (FA). Information is provided on the company name, location, charge date, offence and penalty.

Government Publication Date: 1988-Jun 2007*

Contaminated Sites on Federal Land: Federal FCS

The Federal Contaminated Sites Inventory includes information on known federal contaminated sites under the custodianship of departments, agencies and consolidated Crown corporations as well as those that are being or have been investigated to determine whether they have contamination arising from past use that could pose a risk to human health or the environment. The inventory also includes non-federal contaminated sites for which the Government of Canada has accepted some or all financial responsibility. It does not include sites where contamination has been caused by, and which are under the control of, enterprise Crown corporations, private individuals, firms or other levels of government.

Government Publication Date: Jun 2000-Oct 2018

Field Inspection Incident Report: Provincial FIS

Received from the Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) and EUB (Energy Utilities Board) - this database, which used to be called EISL (Environmental Information System Listing), contains reported environmental incidents beginning in 1975. Descriptions include noise infractions, air quality emissions, oil spills and failures for pipelines, wells, plants, and batteries. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1975-Jan 2019

Food Processing Operations - Certificates of Approval: Provincial FOOD

This database contains approvals for processes pertaining to the manufacturing of food products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

PTMAA Fuel Storage Tanks: Provincial FST

List of active tank sites, sites with tanks temporarily out of service, and sites at which tanks have been removed from the ground. Information in this database was collected according to Alberta Regulation AR 291/95 Storage Tank System Management and to AR 52/98 Fire Code which was formerly the Alberta Fire Code Regulation, 1992 (AR 204/92). This information was received from the Petroleum Tank Management Association of Alberta (PTMAA) which has regulated Storage Tanks since 1994.

Government Publication Date: 1985-Dec 2018

Waste Generators Summary: Provincial GEN

Under Alberta's Waste Control Regulation, Alta. Reg. 192/96, a generator is a person who consigns hazardous waste for storage, transport, treatment or disposal. As of 2007, Alberta Environment no longer provides detailed information on each waste generator, such as approval number, class, and class description.

Government Publication Date: 1993-Aug 2018

Greenhouse Gas Emissions from Large Facilities: Federal GHG

List of greenhouse gas emissions from large facilities made available by Environment Canada. Greenhouse gas emissions in kilotonnes of carbon dioxide equivalents (kt CO2 eq).

Government Publication Date: 2013-Dec 2016

Gas Processing Plants: Provincial GPP

The Alberta Energy Regulator (AER) - formerly the ERCB (Energy Resources Conservation Board) - has an inventory of all Gas Processing Plants in Alberta, with information such as location, names of plant, facility type, operator name, facility license, design capacities, etc.

Government Publication Date: Oct 2016-Oct 31, 2018

Alberta Environment's H.E.L.P. (Help End Landfill Pollution) Program Database: Provincial HELP

The H.E.L.P. Data Tracking and Management Control System was created to provide tracking and management capabilities of industrial landfills in Alberta for the Department of Environment. Detailed information including company name, location, type of landfill, priority, score, status, use and much more is included in this database.

Government Publication Date: June 1988*

Horizontal Wells: Provincial HORW

Defined as drilling directionally at a wellbore inclination angle exceeding 85 degrees, horizontal drilling can help increase resource recovery while minimizing surface impact. Recent improvements in the technology have made it possible to combine horizontal drilling with hydraulic fracturing to help coax oil and natural gas out of tight rock. Today, more than half of western Canada's wells are being drilled horizontally. Data includes: well locations (LE,LS,SE,TWP,RG,M,E), licence numbers, well names, Business Associate (BA) codes, licensee abbreviations, spud dates, final drilling dates, total depth, true vertical depth, and last updated dates. Made available by the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB).

Government Publication Date: Mar 2015-Sep 30, 2018

Indian & Northern Affairs Fuel Tanks: Federal IAFT

The Department of Indian & Northern Affairs Canada (INAC) maintains an inventory of aboveground & underground fuel storage tanks located on both federal and crown land. Our inventory provides information on the reserve name, location, facility type, site/facility name, tank type, material & ID number, tank contents & capacity, and date of tank installation.

Government Publication Date: 1950-Aug 2003*

Identification and Verification of Active and Inactive Land Disposal Sites: Provincial LDS

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. A point scoring system was used to classify the sites into potential priority 1, priority 2 or priority 3 groups on the basis of the type of waste received at the sites and the site environment. Sites that, according to available information, may pose a hazard to public health and safety or the environment are classified as potential priority 1 sites.

Government Publication Date: Oct 1982*

Land Disposal Sites on Indian Reserves: Provincial LDSI

In late 1981, Environment Canada and Alberta Environment initiated a project to identify and verify land disposal sites in the province of Alberta. This database specifically identifies land disposal sites on Indian Reserves. Information on each site is limited to: location, band, size and general comments.

Government Publication Date: Oct 1982*

Lumber Related Operations - Certificates of Approval: Provincial LUM

This database contains approvals for processes pertaining to the manufacturing of wood products, pulp and paper including the associated water treatment processes. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Canadian Mine Locations: Private MINE

This information is collected from the Canadian & American Mines Handbook. The Mines database is a national database that provides over 290 listings on mines (listed as public companies) dealing primarily with precious metals and hard rocks. Listed are mines that are currently in operation, closed, suspended, or are still being developed (advanced projects). Their locations are provided as geographic coordinates (x, y and/or longitude, latitude). As of 2002, data pertaining to Canadian smelters and refineries has been appended to this database.

Government Publication Date: 1998-2009*

Metals, Minerals and Building Materials Operations - Certificates of Approval: Provincial MMB

This database contains approvals for processes pertaining to the manufacturing of building materials, metals, and mineral products. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Mineral Occurrences: Provincial MNR

The AMDO (Alberta Mineral Deposits and Occurrences) application was created by the Minerals and Coal Geoscience Section of the Alberta Geological Survey as a database for mineral deposits in Alberta in the early 1990s. This is a one time inventory and will not be updated.

Government Publication Date: 1993-2003*

National Analysis of Trends in Emergencies System (NATES): Federal NATE

In 1974 Environment Canada established the National Analysis of Trends in Emergencies System (NATES) database, for the voluntary reporting of significant spill incidents. The data was to be used to assist in directing the work of the emergencies program. NATES ran from 1974 to 1994. Extensive information is available within this database including company names, place where the spill occurred, date of spill, cause, reason and source of spill, damage incurred, and amount, concentration, and volume of materials released.

Government Publication Date: 1974-1994*

PTMAA Non-Compliant Storage Tanks: Provincial NCST

The Alberta Fire Code requires that storage tanks be registered. Tanks may not be registered because they do not meet minimum equipment standards or the owners have not made the annual registration application or paid the necessary registration fees. Some tank owners have installed tanks without a permit. This source contains information on facilities which have tanks that have ceased to be registered or have never been registered. It is maintained and updated by the Petroleum Tank Management Association of Alberta (PTMAA).

Government Publication Date: Sep 2016-Jan 31, 2019

National Defense & Canadian Forces Fuel Tanks: Federal NDFT

The Department of National Defense and the Canadian Forces maintains an inventory of all aboveground & underground fuel storage tanks located on DND lands. Our inventory provides information on the base name, location, tank type & capacity, tank contents, tank class, date of tank installation, date tank last used, and status of tank as of May 2001. This database will no longer be updated due to the new National Security protocols which have prohibited any release of this database.

Government Publication Date: Up to May 2001*

National Defense & Canadian Forces Spills: Federal NDSP

The Department of National Defense and the Canadian Forces maintains an inventory of spills to land and water. All spill sites have been classified under the "Transportation of Dangerous Goods Act - 1992". Our inventory provides information on the facility name, location, spill ID #, spill date, type of spill, as well as the quantity of substance spilled & recovered.

Government Publication Date: Mar 1999-Apr 2018

National Defence & Canadian Forces Waste Disposal Sites: Federal NDWD

The Department of National Defence and the Canadian Forces maintains an inventory of waste disposal sites located on DND lands. Where available, our inventory provides information on the base name, location, type of waste received, area of site, depth of site, year site opened/closed and status.

Government Publication Date: 2001-Apr 2007*

National Energy Board Pipeline Incidents: Federal NEBI

Locations of pipeline incidents from 2008 to present, made available by the National Energy Board (NEB). Includes incidents reported under the Onshore Pipeline Regulations and the Processing Plant Regulations related to pipelines under federal jurisdiction, does not include incident data related to pipelines under provincial or territorial jurisdiction.

Government Publication Date: 2008-Sep 30, 2018

National Energy Board Wells: Federal NEBW

The NEBW database contains information on onshore & offshore oil and gas wells that are outside provincial jurisdiction(s) and are thereby regulated by the National Energy Board. Data is provided regarding the operator, well name, well ID No./UWI, status, classification, well depth, spud and release date.

Government Publication Date: 1920-Feb 2003*

National Environmental Emergencies System (NEES): Federal NEES

In 2000, the Emergencies program implemented NEES, a reporting system for spills of hazardous substances. For the most part, this system only captured data from the Atlantic Provinces, some from Quebec and Ontario and a portion from British Columbia. Data for Alberta, Saskatchewan, Manitoba and the Territories was not captured. However, NEES is also a repository for previous Environment Canada spill datasets. NEES is composed of the historic datasets ' or Trends ' which dates from approximately 1974 to present. NEES Trends is a compilation of historic databases, which were merged and includes data from NATES (National Analysis of Trends in Emergencies System), ARTS (Atlantic Regional Trends System), and NEES. In 2001, the Emergencies Program determined that variations in reporting regimes and requirements between federal and provincial agencies made national spill reporting and trend analysis difficult to achieve. As a consequence, the department has focused efforts on capturing data on spills of substances which fall under its legislative authority only (CEPA and FA). As such, the NEES database will be decommissioned in December 2004.

Government Publication Date: 1974-2003*

National PCB Inventory: Federal NPCB

Environment Canada's National PCB inventory includes information on in-use PCB containing equipment in Canada including federal, provincial and private facilities. Federal out-of-service PCB containing equipment and PCB waste owned by the federal government or by federally regulated industries such as airlines, railway companies, broadcasting companies, telephone and telecommunications companies, pipeline companies, etc. are also listed. Although it is not Environment Canada's mandate to collect data on non-federal PCB waste, the National PCB inventory includes some information on provincial and private PCB waste and storage sites. Some addresses provided may be Head Office addresses and are not necessarily the location of where the waste is being used or stored.

Government Publication Date: 1988-2008*

National Pollutant Release Inventory: Federal NPRI

Environment Canada has defined the National Pollutant Release Inventory ("NPRI") as a federal government initiative designed to collect comprehensive national data regarding releases to air, water, or land, and waste transfers for recycling for more than 300 listed substances.

Government Publication Date: 1993-May 2017

Operating and Abandoned Mines: Provincial OAM

This data is based on the 2001 edition (revised in 2003), published by the Alberta Energy and Utilities Board (EUB) now the Alberta Energy Regulator (AER). It was a one time inventory of Operating and Abandoned Coal Mines in Alberta. In 1905, Alberta began to catalogue coal mines by assigning a unique number to each operation. This database will provide information on location, mine #, mine name, mine company, life span, amount of coal produced, depth, thickness and other important information concerning the mine.

Government Publication Date: 2001, 2003*

Oil and Gas Wells: Private OGW

The Nickle's Energy Group (publisher of the Daily Oil Bulletin) collects information on drilling activity including operator and well statistics. The well information database includes name, location, class, status and depth. The main Nickle's database is updated on a daily basis, however, this database is updated on a monthly basis. More information is available at www.nickles.com.

Government Publication Date: 1988-Feb 28, 2019

Oil and Gas Facilities - ST102 & ST50: Provincial OIL & GAS FACS

List of batteries, gas plants, meter stations, and other facilities in the province of Alberta, made available as ST102 (Parts A and B) and ST50 (B) by the Alberta Energy Regulator (AER).

Government Publication Date: Jan 31, 2019

Alberta Orphan Wells: Provincial ORP

Orphan wells are wells that have not been properly abandoned and whose operators are defunct or insolvent. In Alberta, orphan wells fall under the responsibility of the Orphan Well Association, which works under the the delegated authority of the Alberta Energy Regulator (AER) - formerly the Energy Resources Conservation Board (ERCB). The data includes Location, Well ID, License Name and License Number.

Government Publication Date: Jan 2007-Aug 31, 2018

Canadian Pulp and Paper: Private PAP

This information is part of the Pulp and Paper Canada Directory. The Directory provides a comprehensive listing of the locations of pulp and paper mills and the products that they produce.

Government Publication Date: 1999, 2002, 2004, 2005, 2009-2014

Parks Canada Fuel Storage Tanks: Federal PCFT

Canadian Heritage maintains an inventory of known fuel storage tanks operated by Parks Canada, in both National Parks and at National Historic Sites. The database details information on site name, location, tank install/removal date, capacity, fuel type, facility type, tank design and owner/operator.

Government Publication Date: 1920-Jan 2005*

Petrochemical, Coal and Gas Operations - Certificates of Approval: Provincial PCG

This database contains approvals for processes pertaining to petroleum, coal, and oil and gas processing. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Pesticide Register: Provincial PES

This is a list of all Registered Pesticide Vendors in Alberta (retail and wholesale). The pesticide vendor list is comprised of vendors who have both audited AWSA pesticide storage facilities as part of their operation, and those vendors that do not have an audited AWSA pesticide storage facilities. Non-audited retail and wholesale vendors may be selling products that are not covered by the AWSA program, or may be utilizing external AWSA pesticide warehouses. Registration numbers and expiry dates are identified for each operation. If a registration number is not present, the operation's vendor registration is in the process of renewal.

Government Publication Date: 1998-Aug 2015

Conglomerate and Waste Management Facilities: Provincial PITS

This database contains approvals for processes pertaining to the use of gravel pits, sand pits, and clay pits. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Private Sewage Disposal Permits: Provincial PSP

These permits are private sewage disposal permits that have been issued to owners and contractors. They would include various types of installations including holding tanks, septic tanks, packaged treatment plants, sand filters, fields, mounds, lagoons and open discharges. In 2003 Alberta Municipal Affairs started collecting information and issuing permits using an electronic permitting system. These records include all private sewage disposal permits within the jurisdiction of Alberta Municipal Affairs.

Government Publication Date: 2003-2013

PTMAA Approved (Open) Permits: Provincial PTAP

The Petroleum Tank Management Association of Alberta maintains a list of open permits it has issued within its jurisdiction. Prior to installing, removing, or altering tanks, storage tanks owners must receive approval in the form of a permit from the Authority Having Jurisdiction (in this case, PTMAA).

Government Publication Date: Apr 2016-Dec 31, 2018

Hazardous Waste Receivers Summary: Provincial REC

A waste receiving location is any site or facility to which waste is transferred through a waste carrier. A receiver of regulated waste is required to register the waste receiving facility. This database represents receivers of regulated wastes under Alberta's Waste Control Regulation, Alta. Reg. 192/96. As of 2007, Alberta Environment no longer provides detailed information on each waste receiver, such as approval number, class, and class description.

Government Publication Date: 1993-Aug 2018

Retail Fuel Storage Tanks: Private RST

This database includes an inventory of retail fuel outlet locations (including marinas) that have on their property gasoline, oil, waste oil, natural gas and / or propane storage tanks.

Government Publication Date: 1999-Jan 31, 2019

Scott's Manufacturing Directory: Private SCT

Scott's Directories is a data bank containing information on over 200,000 manufacturers across Canada. Even though Scott's listings are voluntary, it is the most comprehensive database of Canadian manufacturers available. Information concerning a company's address, plant size, and main products are included in this database.

Government Publication Date: 1992-Mar 2011*

Special Operation Classifications - Certificates of Approval: Provincial SPEC

This database contains approvals for processes pertaining to classifications listed as special operations (i.e. locations owned/operated by municipalities, operations that involve the presence of pesticides). Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Inventory of Waste Disposal Sites: Private WDS

This one time inventory is a compilation of information collected from each region and pertains to active, regulated waste disposal sites within the province of Alberta. In the past, waste disposal sites were registered with both regional and health offices. That process was dissolved and regional landfills were developed. There is no central source of this information. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1998*

Wastewater Operations: Provincial WSTE

This database contains approvals for processes pertaining to wastewater treatment systems. Please note that, as per the source of this database, some of the geographic information may pertain to a head office or mailing address and not necessarily the site of operations to which the certificate applies. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location. Therefore, locations will be accurate to the quarter section only.

Government Publication Date: 1993-2012

Alberta Water Well Information Database: Provincial WWIS

List of wells in the Alberta Water Well Information Database made available by Alberta Environment and Parks, containing approximately 500,000 records with nearly 5,000 drilling reports added annually. Some geographic coordinates have been provided in ATS (Alberta Township Survey system) format but do not contain offsets that are necessary to pinpoint a specific location; some locations will be accurate to the quarter section only. The Province of Alberta advises that the data may not be fully checked, and disclaims all responsibility for its accuracy. This data was previously collected from the Groundwater Information Center of the Natural Resource Service.

Government Publication Date: 1880-Oct 31, 2018

Definitions

Database Descriptions: This section provides a detailed explanation for each database including: source, information available, time coverage, and acronyms used. They are listed in alphabetic order.

Detail Report: This is the section of the report which provides the most detail for each individual record. Records are summarized by location, starting with the project property followed by records in closest proximity.

Distance: The distance value is the distance between plotted points, not necessarily the distance between the sites' boundaries. All values are an approximation.

Direction: The direction value is the compass direction of the site in respect to the project property and/or center point of the report.

Elevation: The elevation value is taken from the location at which the records for the site address have been plotted. All values are an approximation. Source: Google Elevation API.

Executive Summary: This portion of the report is divided into 3 sections:

'Report Summary'- Displays a chart indicating how many records fall on the project property and, within the report search radii.

'Site Report Summary'-Project Property'- This section lists all the records which fall on the project property. For more details, see the 'Detail Report' section.

'Site Report Summary-Surrounding Properties'- This section summarizes all records on adjacent properties, listing them in order of proximity from the project property. For more details, see the 'Detail Report' section.

Map Key: The map key number is assigned according to closest proximity from the project property. Map Key numbers always start at #1. The project property will always have a map key of '1' if records are available. If there is a number in brackets beside the main number, this will indicate the number of records on that specific property. If there is no number in brackets, there is only one record for that property.

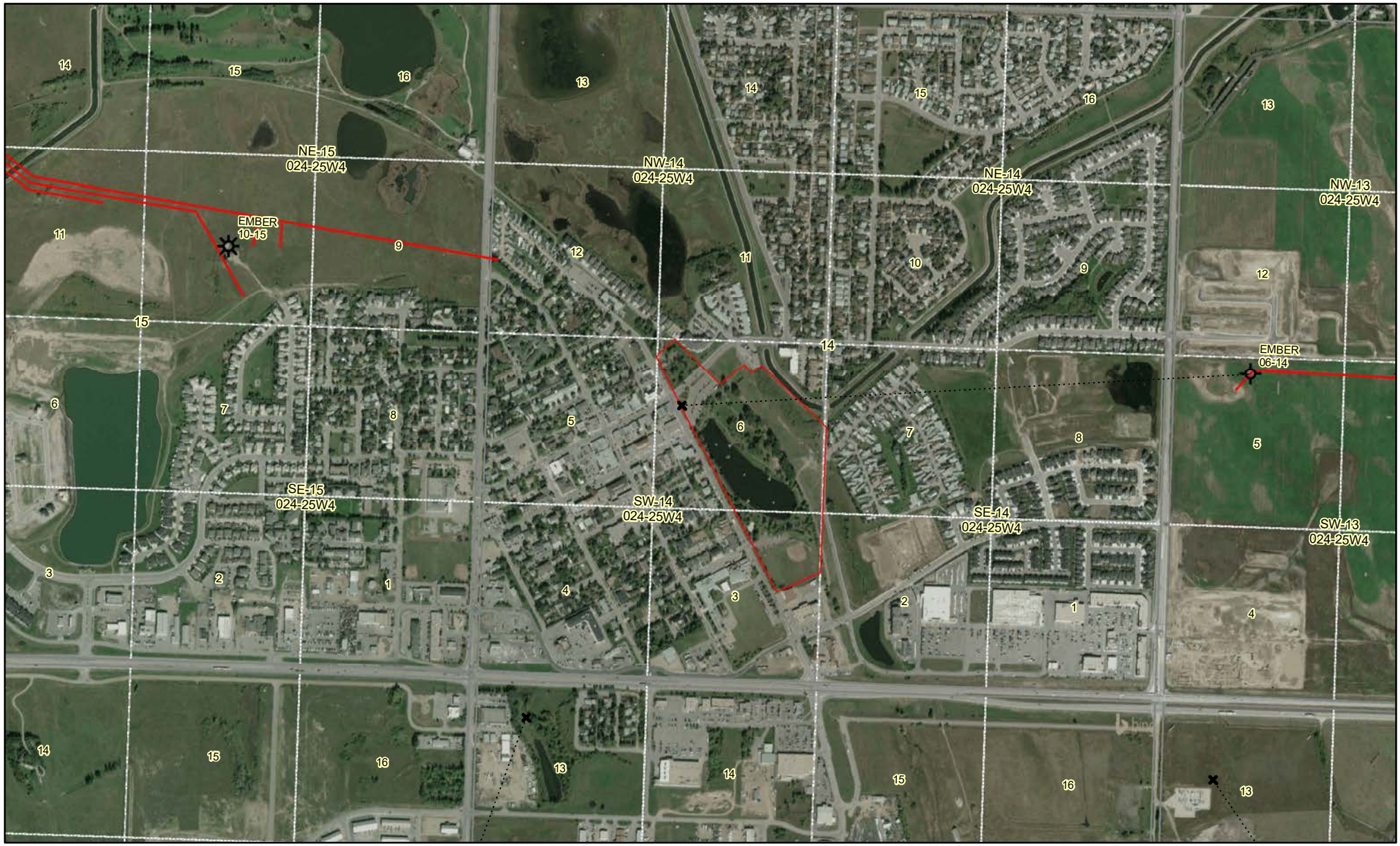
The symbol and colour used indicates 'elevation': the red inverted triangle will dictate 'ERIS Sites with Lower Elevation', the yellow triangle will dictate 'ERIS Sites with Higher Elevation' and the orange square will dictate 'ERIS Sites with Same Elevation.'

Unplottables: These are records that could not be mapped due to various reasons, including limited geographic information. These records may or may not be in your study area, and are included as reference.

Appendix E
Alberta Energy Regulator

Clifton

CG3198_PIIESA



Monday, April 29, 2019

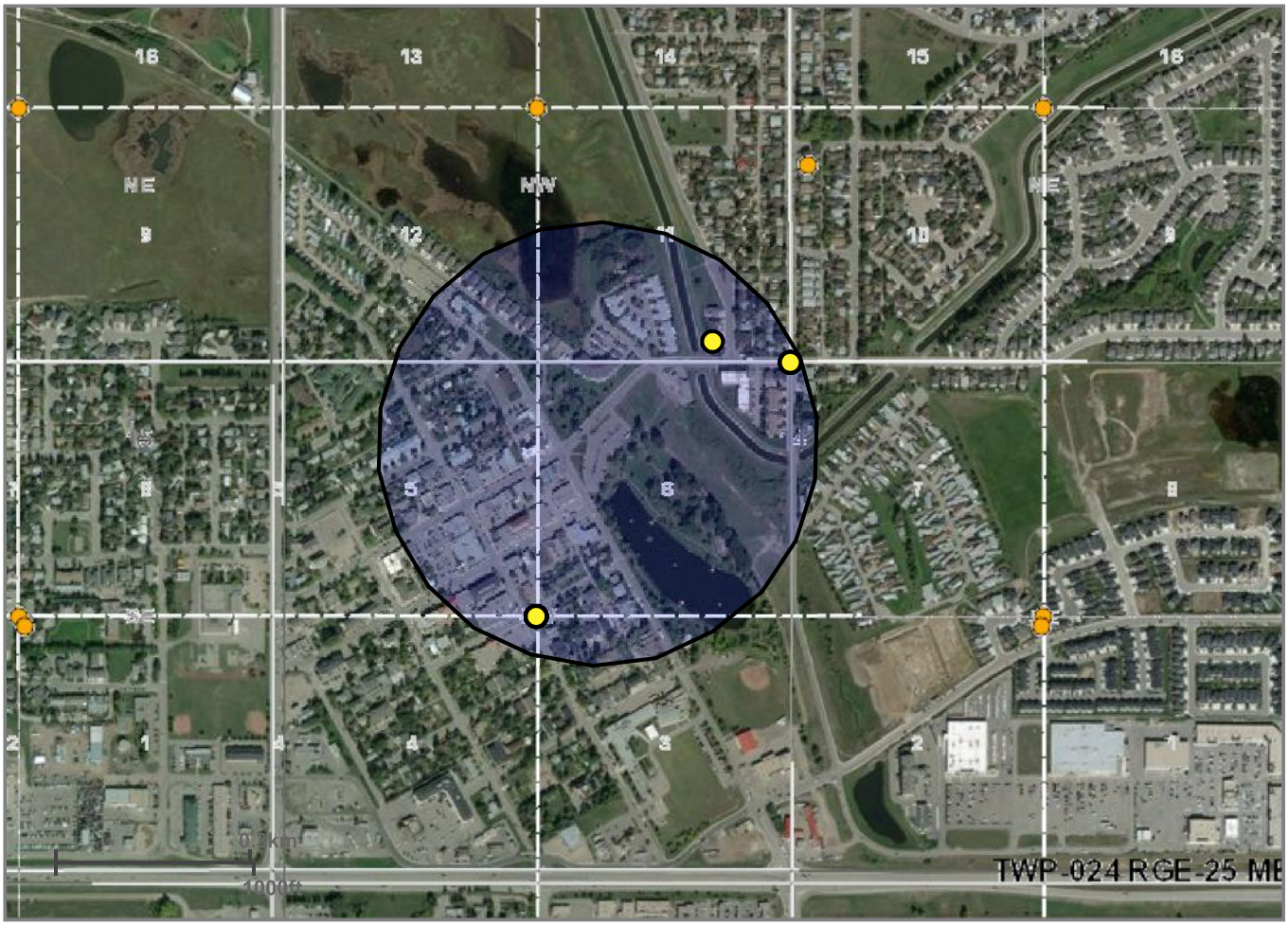
1:12,385

0 150 300 600 m

AbaData

Appendix F
AEP Water Well Records

Clifton



Alberta Water Well Information Database Map

Projection
Web Mercator (Auxillary Sphere)

Datum
WGS 84

Date
3/11/2019, 3:01:41 PM

Legend
- Groundwater Drilling Report
- Baseline Water Well Report

http://groundwater.alberta.ca/WaterWells/d/

Information as depicted is subject to change, therefore the Government of Alberta assumes no responsibility for discrepancies at time of use.

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Reconnaissance Report

View in Metric

Export to Excel

Groundwater Wells

Please click the water Well ID to generate the Water Well Drilling Report.

GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)	SC_DIA (in)
122603	SW	14	24	25	4	MURRAY R D DRLG	1965-06-04	227.00	Well Inventory	Domestic		8		ARCH & BEAM LTD	50.00	6.00	0.00
122604	SW	14	24	25	4	M&M DRILLING CO. LTD.	1976-04-15	270.00	New Well	Industrial		19		STRATHMORE MOTOR PRODUCTS	40.00	11.00	0.00
122605	SW	14	24	25	4	M&M DRILLING CO. LTD.	1975-09-16	476.00	New Well-Decommissioned	Domestic & Stock		24		KANG, MALKIAT S.			0.00
122606	SW	14	24	25	4	M&M DRILLING CO. LTD.	1975-09-19	225.00	New Well	Domestic & Stock		19		KANG, MALKIAT S.	40.00	4.00	5.50
122607	SW	14	24	25	4	M&M DRILLING CO. LTD.	1984-08-22	195.00	New Well	Domestic		9		CHYSLER, ERIK	87.00	13.00	0.00
122608	SW	14	24	25	4	UNKNOWN DRILLER		120.00	Chemistry	Domestic	1			GIROUX, NOVA			0.00
122609	SW	14	24	25	4	UNKNOWN DRILLER		105.00	Chemistry	Domestic	1			OUCTION MART			0.00
122610	SW	14	24	25	4	UNKNOWN DRILLER		90.00	Chemistry	Domestic	2			CONLET'S DRIVE-IN			0.00
122611	SW	14	24	25	4	UNKNOWN DRILLER		120.00	Chemistry	Domestic	1			GUTHRIE, JOY			0.00
122620		14	24	25	4	UNKNOWN DRILLER		210.00	Well Inventory	Unknown				#WELL 3 DITCHRIDER	190.00		0.00
122621		14	24	25	4	UNKNOWN DRILLER	1913-07-05	296.00	Well Inventory	Unknown				#WELL 1 TOWER	0.00	4.00	0.00
122698	SW	14	24	25	4	UNKNOWN DRILLER		350.00	Chemistry	Municipal	3			STRATHMORE, TOWN OF #WELL 1	80.00		6.00
122699	SW	14	24	25	4	UNKNOWN DRILLER		0.00	Chemistry	Municipal	1						0.00
122700	SW	14	24	25	4	DEN-ALTA DRILLING LTD.	1979-05-09	115.00	New Well	Unknown		2		RHODES, H.W.	50.00	15.00	5.56
122701	SW	14	24	25	4	UNKNOWN DRILLER		0.00	Chemistry	Municipal	2			STRATHMORE, TOWN OF			0.00
122702	SW	14	24	25	4	UNKNOWN DRILLER		120.00	Chemistry	Domestic	1			THOMAS, DAVID	50.00		6.00
122703	SW	14	24	25	4	DEN-ALTA DRILLING LTD.	1979-07-30	155.00	Reconditioned	Domestic		1		KERNAFHAN, GERRY	33.00	2.00	0.00
122704	SW	14	24	25	4	UNKNOWN DRILLER		100.00	Chemistry	Domestic	2			VOGELAAR, G.	80.00		8.00
122704	SW	14	24	25	4	UNKNOWN DRILLER		100.00	Chemistry	Domestic	2			VOGELAAR, G.	60.00		8.00
122705	SW	14	24	25	4	UNKNOWN DRILLER		230.00	Chemistry	Domestic	1						0.00

Reconnaissance Report

View in Metric

Export to Excel

GIC Well ID	LSD	SEC	TWP	RGE	M	DRILLING COMPANY	DATE COMPLETED	DEPTH (ft)	TYPE OF WORK	USE	CHM	LT	PT	WELL OWNER	STATIC LEVEL (ft)	TEST RATE (igpm)	SC_DIA (in)
122706	SW	14	24	25	4	UNKNOWN DRILLER		437.00	Chemistry	Municipal	1			STRATHMORE, TOWN			0.00
122707	SW	14	24	25	4	UNKNOWN DRILLER		145.00	Chemistry	Domestic	1			STRATHMORE SWIMMING POOL	100.00		4.50
122708	SW	14	24	25	4	UNKNOWN DRILLER		135.00	Chemistry	Municipal	1			STRATHMORE, TOWN OF #WELL 2			0.00
122709	SW	14	24	25	4	UNKNOWN DRILLER		150.00	Chemistry	Domestic	1			WALKER, K.H.	87.00		6.00
122710	SW	14	24	25	4	UNKNOWN DRILLER		200.00	Chemistry	Domestic	2			MUZA, JAMES W.			6.00
122711	SW	14	24	25	4	UNKNOWN DRILLER		65.00	Chemistry	Domestic	1			PAGETS DAIRY BAR & MOTEL			0.00
122712	SW	14	24	25	4	UNKNOWN DRILLER		105.00	Chemistry	Domestic	1			STRATHMORE SEED CLEANING PLANT	43.00		0.00
122713	SW	14	24	25	4	M&M DRILLING CO. LTD.	1967-09-18	255.00	New Well	Municipal		20		STRATHMORE, TOWN OF	135.00	28.00	5.13
239588		14	24	25	4	UNKNOWN DRILLER		0.00	Chemistry	Municipal	1			STRATHMORE, TOWN OF			0.00
239589		14	24	25	4	UNKNOWN DRILLER	1972-05-01	150.00	Chemistry	Municipal	1			STRATHMORE, TOWN OF#NORTH WELL			0.00
239590		14	24	25	4	UNKNOWN DRILLER	1979-06-01	255.00	Chemistry	Municipal	1			STRATHMORE, TOWN OF	94.00		0.00
239592		14	24	25	4	UNKNOWN DRILLER		0.00	Chemistry	Municipal	1			BRENTWOOD SCHOOL			0.00
239593		14	24	25	4	UNKNOWN DRILLER		270.00	Chemistry	Municipal	1			STRATHMORE, TOWN OF	94.50		0.00
292892	SW	14	24	25	4	KRIEGER DRILLING LTD.	1999-06-28	78.00	New Well	Domestic		9	19	KRALIK, RANDY	14.80	5.00	6.62
296530	SW	14	24	25	4	M&M DRILLING CO. LTD.	2001-06-28	15.00	Existing Well-Decommissioned	Domestic				TRENDSETTER HOMES			0.00
296531	SW	14	24	25	4	M&M DRILLING CO. LTD.	2001-06-28	60.00	Existing Well-Decommissioned	Domestic				TRENDSETTER HOMES			6.00
1476196	11	14	24	25	4	M&M DRILLING CO. LTD.		78.00	Existing Well-Decommissioned	Unknown		1		CRYSTAL RIDGE HOMES	16.00		5.50

Appendix G
Regulatory Approval Results

Clifton

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- Government of Alberta Home |

Authorization Viewer **Traditional Agriculture Registration Viewer** **Public Notices Viewer** **Help**

Authorization Viewer - Search Results

The Search Used the Following Values:	
Legal Land Location:	6 SW 14-024-25-W4
Act / Document Type:	Water Act, EPEA
Show Inactive Authorizations:	Yes

The resulting Authorizations based on the search criteria will be displayed below. A will appear next to the Authorization when documentation is available for viewing or downloading. Please click Viewer Help if you encounter problems viewing the Authorization document.

0 Result(s)

Clear & Return

Comments regarding the Authorization Viewer page may be directed to the Regulatory Approvals Centre RAC.Environment@gov.ab.ca.

Alberta Environment and Parks

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Authorization Viewer - Search Results

The Search Used the Following Values:	
Legal Land Location:	SW 14-024-25-W4
Act / Document Type:	Water Act, EPEA
Show Inactive Authorizations:	Yes

The resulting Authorizations based on the search criteria will be displayed below. A will appear next to the Authorization when documentation is available for viewing or downloading. Please click Viewer Help if you encounter problems viewing the Authorization document.

Clear & Return

101 Result(s)

	This consolidation document for TOWN OF STRATHMORE has been provided for your convenience only. It's intended purpose is to summarize all Amendments that have been applied to the master Approval. Anyone making use of a consolidation is reminded that it has no legal standing and that you must refer to the original Approval and Amendments for purposes of interpretation and application.
	Document 00001190-00-00 STRATHMORE WASTEWATER SYSTEM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-00-01 STRATHMORE WASTEWATER SYSTEM - 2 STORMWATER PONDS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-00-02 STRATHMORE WASTEWATER SYSTEM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-00 STRATHMORE WASTEWATER SYSTEM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-01 STRATHMORE WASTEWATER SYSTEM-STRATHAVEN PHASE 3 SUBDIV STORM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-02 STRATHMORE WASTEWATER-EMERGENCY DISCHARGE TO WID CANAL is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-03 STRATHMORE WASTEWATER -HILLVIEW SUBDIVISION 3 STORM PONDS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-04 STRATHMORE WASTEWATER -DISCHARGE TO WID CANAL IN 2000/01 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-05 STRATHMORE WASTEWATER -ASPEN CREEK STORMWATER OUTFALL is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-06 STRATHMORE WASTEWATER - NEW TREATMENT PLANT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-07 STRATHMORE WASTEWATER SYSTEM - ADDITIONAL DEFINITION OF "COMPOSITE" is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently

	renewed.
	Document 00001190-01-08 STRATHMORE WASTEWATER SYSTEM - CONSTRUCT SCUM HOLDING TANKS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-09 STRATHMORE WASTEWATER SYSTEM - HILLVIEW ESTATES STORM POND is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-10 STRATHMORE WASTEWATER SYSTEM - CLAUSE 6.1.15 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-11 STRATHMORE WASTEWATER SYSTEM - ROYOP STRATHMORE COMMERCIAL SITE, STORM OUTFALL RECONSTRUCTION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-12 STRATHMORE WASTEWATER SYSTEM - REMOVE LETTER OF AUTHORIZATION REQUIREMENT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-13 STRATHMORE WASTEWATER SYSTEM - TREATED EFFLUENT OUTFALL TO BOW RIVER is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-14 STRATHMORE WASTEWATER SYSTEM - STORM DRAINAGE SYSTEM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Registration is currently renewed.
	Document 00001190-01-15 STRATHMORE WASTEWATER SYSTEM - MINISTERIAL ORDER 11/2007 (REGARDING APPROVAL 1190-01-13) is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-01-16 STRATHMORE WASTEWATER SYSTEM - EXTENSION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently renewed.
	Document 00001190-02-00 STRATHMORE WASTEWATER SYSTEM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently issued as of Mar. 01, 2009 and expires on Feb. 01, 2020.
	Document 00001190-02-01 STRATHMORE WASTEWATER SYSTEM - EXPIRY DATE EXTENSION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Approval is currently issued as of Jan. 31, 2019 and expires on Feb. 01, 2020.
	Document 00049716-00-00 STRATHMORE/MUNICIPAL - STRATHMORE LAKES ESTATES PHASE 2 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Feb. 24, 1998 and does not expire.
	Document 00049716-00-01 STRATHMORE/MUNICIPAL - STRATHMORE LAKES SUBDIV, PHASE 8 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 27, 2002 and does not expire.
	Document 00049716-00-02 STRATHMORE/MUNICIPAL - STRATHMORE LAKES ESTATES, PHASE 5 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Nov. 15, 2002 and does not expire.
	Document 00068530-00-00 STRATHMORE/MUNICIPAL - MITZNER SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 06, 1998 and does not expire.
	Document 00069807-00-00 STRATHMORE/MUNICIPAL - STRATHMORE INDUSTRIAL SUBDIV is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 18, 1998 and does not expire.
	Document 00069807-00-02 STRATHMORE/MUNICIPAL - STRATHMORE MOTOR PRODUCTS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 26, 2001 and does not expire.
	Document 00069807-00-03 STRATHMORE/MUNICIPAL - ORCHARD PARK INDUSTRIAL PARK PHASE 1 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 03, 2001 and does not expire.
	Document 00069807-00-04 STRATHMORE/MUNICIPAL - ROYOP COMMERCIAL SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 03, 2003 and does not expire.
	Document 00069807-00-05 STRATHMORE/MUNICIPAL - CANAL CROSSING COMMERCIAL SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 03, 2003 and does not expire.
	Document 00069940-00-00 STRATHMORE/MUNICIPAL - WATERWORKS CHEMICAL USE is held by Town of Strathmore,

	under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently renewed.
	Document 00069940-01-00 STRATHMORE/MUNICIPAL - WATERWORKS CHEMICAL USE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently expired and renewable.
	Document 00069940-01-01 STRATHMORE/MUNICIPAL - WATERWORKS CHEMICAL,KMN04 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently expired.
	Document 00069940-01-02 STRATHMORE/MUNICIPAL - WATERWORKS CHEMICAL,COPPER SULPHATE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently expired.
	Document 00071183-00-00 STRATHMORE/MUNICIPAL - CRYSTAL RIDGE SUBDIV is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Dec. 18, 1998 and does not expire.
	Document 00073508-00-00 STRATHMORE/MUNICIPAL - STRATHAVEN SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 27, 1993 and does not expire.
	Document 00073508-00-01 STRATHMORE/MUNICIPAL - STRATHAVEN PHASE 2 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Mar. 25, 1996 and does not expire.
	Document 00073508-00-02 STRATHMORE/MUNICIPAL - STRATHAVEN PHASE 3 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 04, 1998 and does not expire.
	Document 00073508-00-03 STRATHMORE/MUNICIPAL - STRATHAVEN PHASE 4 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 30, 1999 and does not expire.
	Document 00073508-00-04 STRATHMORE/MUNICIPAL - STRATHAVEN SUBDIV, PHASE 5A & 5B is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 16, 2000 and does not expire.
	Document 00073508-00-05 STRATHMORE/MUNICIPAL - HILLVIEW AND STRATHAVEN STUBDIVISIONS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 17, 2001 and does not expire.
	Document 00073508-00-06 STRATHMORE/MUNICIPAL - STRATHAVEN SUBDIVISION,PHASE 5C is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Apr. 23, 2003 and does not expire.
	Document 00073513-00-00 STRATHMORE/MUNICIPAL - STRATHMORE LAKES, LAKESIDE VILLAS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Apr. 06, 1993 and does not expire.
	Document 00073513-00-01 STRATHMORE/MUNICIPAL - STRATHMORE LAKES ESTATES PH 4 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 22, 1997 and does not expire.
	Document 00073513-00-02 STRATHMORE/MUNICIPAL - STRATHMORE LAKES ESTATES PH 7 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 04, 1998 and does not expire.
	Document 00073513-00-03 STRATHMORE/MUNICIPAL - STRATHMORE LAKE ESTATES,PH 7 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 30, 1999 and does not expire.
	Document 00073513-00-04 STRATHMORE/MUNICIPAL - STRATHMORE LAKES ESTATES,PHASE 6 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Apr. 19, 2001 and does not expire.
	Document 00073517-00-00 STRATHMORE/MUNICIPAL - BIRCHWOOD SUBDIV PHASE 1 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 20, 1997 and does not expire.
	Document 00073517-00-01 STRATHMORE/MUNICIPAL - BIRCHWOOD SUBDIV, CANAL CROSSING is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 20, 1997 and does not expire.
	Document 00073517-00-02 STRATHMORE/MUNICIPAL - ASPEN CREEK PHASE 2 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 26, 1998 and does not expire.
	Document 00073517-00-03 STRATHMORE/MUNICIPAL -ASPEN CREEK SUBDIVISION, PHASE 3 is held by Town of

	Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 31, 2000 and does not expire.
	Document 00073517-00-04 STRATHMORE/MUNICIPAL - ASPEN CREEK SUBDIVISION,PHASE 3B is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Nov. 04, 2002 and does not expire.
	Document 00073791-00-00 STRATHMORE/MUNICIPAL - HILLVIEW ESTATES SUBDIV is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 30, 1999 and does not expire.
	Document 00073791-00-01 STRATHMORE/MUNICIPAL - HILLVIEW ESTATES SUBDIV is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 16, 1999 and does not expire.
	Document 00073791-00-02 STRATHMORE/MUNICIPAL - HILLVIEW SUBDIVISION, PHASE 2 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Mar. 15, 2001 and does not expire.
	Document 00073791-00-03 STRATHMORE/MUNICIPAL - HILLVIEW ESTATES SUBDIV 1E is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 22, 2002 and does not expire.
	Document 00073791-00-04 STRATHMORE/MUNICIPAL - HILLVIEW ESTATES SUBDIV, PHASE 3 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Apr. 01, 2003 and does not expire.
	Document 00073791-00-05 STRATHMORE/MUNICIPAL - HILLVIEW ESTATES SUBDIV, PHASE 4 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Apr. 07, 2003 and does not expire.
	Document 00075159-00-00 STRATHMORE/MUNICIPAL - STRATHFORD MEADOW ESTATES,PH 2&3 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 30, 1999 and does not expire.
	Document 00075160-00-00 STRATHMORE/MUNICIPAL - CAMBRIDGE GLEN SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jan. 20, 1993 and does not expire.
	Document 00075160-00-01 STRATHMORE/MUNICIPAL - CAMBRIDGE GLEN SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 08, 1993 and does not expire.
	Document 00075160-00-02 STRATHMORE/MUNICIPAL - CAMBRIDGE GLEN,PHASE 2 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Mar. 25, 1996 and does not expire.
	Document 00075160-00-03 STRATHMORE/MUNICIPAL - CAMBRIDGE GLEN,PH 3,STAGE 1 & 2 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 30, 1999 and does not expire.
	Document 00075160-00-04 STRATHMORE/MUNICIPAL - CAMBRIDGE GLEN SUBDIV WATER MAIN LOOPING, FROM PHASE 3 TO BRENT BOULEVARD is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 02, 2001 and does not expire.
	Document 00075160-00-05 STRATHMORE/MUNICIPAL - CAMBRIDGE GLEN SUBDIV, PHASE 4 AND 5 is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Feb. 18, 2003 and does not expire.
	Document 00075867-00-00 STRATHMORE/MUNICIPAL - WASTEWATER CHEMICAL USE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 18, 1999 and does not expire.
	Document 00075867-00-01 STRATHMORE/MUNICIPAL - WASTEWATER CHEMICAL USE, ALUMINUM SULPHATE IN THE LAGOONS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 10, 2000 and does not expire.
	Document 00083021-00-00 STRATHMORE/MUNICIPAL -VILLAGE ESTATES SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 15, 2000 and does not expire.
	Document 00135773-00-00 STRATHMORE/MUNICIPAL -GRANDE POINT ESTATES SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 14, 1991 and does not expire.
	Document 00135773-00-01 STRATHMORE/MUNICIPAL -GRANDE POINT ESTATES, PHASE 2 is held by Town of Strathmore,

	under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jan. 27, 1993 and does not expire.
	Document 00135775-00-00 STRATHMORE/MUNICIPAL -WILDFLOWER HEIGHTS, STAGE I & II is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Mar. 25, 1996 and does not expire.
	Document 00135777-00-00 STRATHMORE/MUNICIPAL - MADISON COURT RESIDENTIAL SUBDIVISION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 22, 1997 and does not expire.
	Document 00135780-00-00 STRATHMORE/MUNICIPAL -GREEN MEADOW DRIVE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 15, 1991 and does not expire.
	Document 00135780-00-01 STRATHMORE/MUNICIPAL -PARKLANE SOUTH SANITARY TRUNK MAIN is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Dec. 23, 1991 and does not expire.
	Document 00135780-00-02 STRATHMORE/MUNICIPAL -STRATHMORE JR. HIGH is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 24, 1992 and does not expire.
	Document 00135780-00-03 STRATHMORE/MUNICIPAL -CONDOMINIUM DEVELOPMENT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 27, 1993 and does not expire.
	Document 00135780-00-04 STRATHMORE/MUNICIPAL -BRIARGLEN MOBILE HOME PARK is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Dec. 20, 1993 and does not expire.
	Document 00135780-00-05 STRATHMORE/MUNICIPAL -MAIN REPLACEMENT: SECOND STR TO VILLAGE WAY,BAYVIEW CRESC,LAKESIDE BLVD is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 11, 1995 and does not expire.
	Document 00135780-00-06 STRATHMORE/MUNICIPAL -WATERMAIN REPLACEMENT,3RD AVE TO TRANS CANADA HIGHWAY-WADDY LANE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 15, 1996 and does not expire.
	Document 00135780-00-07 STRATHMORE/MUNICIPAL -LAMBERT PARK SENIORS APT EXTENSIONS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 26, 1996 and does not expire.
	Document 00135780-00-08 STRATHMORE/MUNICIPAL -WHEATLAND TRAIL UTILITY CORRIDOR UPGRADE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 15, 1997 and does not expire.
	Document 00135780-00-09 STRATHMORE/MUNICIPAL -VILLAGE WAY WATERMAIN LOOP is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 27, 1993 and does not expire.
	Document 00135780-00-10 STRATHMORE/MUNICIPAL -EXTENSIONS: BRENT BLVD SCHOOL AND ACCESS ROAD is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jun. 12, 2000 and does not expire.
	Document 00135780-00-11 STRATHMORE/MUNICIPAL - WATER MAINS TO NEW WASTEWATER TREATMENT FACILITY is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Nov. 09, 2000 and does not expire.
	Document 00135780-00-12 STRATHMORE/MUNICIPAL - 2001 STREET IMPROVEMENTS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Jul. 20, 2001 and does not expire.
	Document 00135780-00-13 STRATHMORE/MUNICIPAL - USE TREATED EFFLUENT FOR DUST CONTROL IN THE 2001 ROAD BUILDING PROJECTS, WHEATLAND COUNTY is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 27, 2001 and does not expire.
	Document 00135780-00-14 STRATHMORE/MUNICIPAL - 2003 INFRASTRUCTURE IMPROVEMENTS is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 08, 2003 and does not expire.
	Document 00153729-00-00 STRATHMORE/MUNICIPAL - SLUDGE DISPOSAL AT BONNYBROOK SEPTAGE STATION is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently renewed.
	Document 00153729-00-01 STRATHMORE/MUNICIPAL - 2002 BIOSOLIDS TO LAND PROGRAM is held by Town of

	Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently expired.
	Document 00153729-01-00 STRATHMORE/MUNICIPAL - 2003 BIOSOLIDS TO LAND PROGRAM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently expired and renewable.
	Document 00153732-00-00 STRATHMORE/MUNICIPAL - 1991 IRRIGATION PROJECT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 07, 1991 and does not expire.
	Document 00153732-00-01 STRATHMORE/MUNICIPAL - 1991 IRRIGATION PROJECT, ADDITIONAL SITE is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 07, 1991 and does not expire.
	Document 00153732-00-02 STRATHMORE/MUNICIPAL - 1990 IRRIGATION PROGRAM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 07, 1991 and does not expire.
	Document 00153732-00-03 STRATHMORE/MUNICIPAL - 1992 IRRIGATION PROGRAM is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Sep. 22, 1992 and does not expire.
	Document 00153732-00-04 STRATHMORE/MUNICIPAL - 1993 IRRIGATION PROJECT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Aug. 05, 1993 and does not expire.
	Document 00153732-00-05 STRATHMORE/MUNICIPAL - 1994 IRRIGATION PROJECT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of May. 16, 1994 and does not expire.
	Document 00153732-00-06 STRATHMORE/MUNICIPAL - WASTEWATER DISPOSAL TO AID THIRWELL WETLAND PROJECT is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Authorization is currently issued as of Oct. 04, 2001 and does not expire.
	Document 00235532-00-00 STRATHMORE/BOW RIVER HYDROLOGIC TRACING ANALYSIS STUDY is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Registration is currently issued as of Dec. 05, 2006 and does not expire.
	Document 00322671-00-00 STRATHMORE STORM DRAINAGE SYSTEM - LAKEWOOD MEADOWS SUBDIVISION STORM POND is held by Town of Strathmore, under the provisions of the *Environmental Protection & Enhancement Act.* This Registration is currently issued as of Jun. 10, 2013 and does not expire.

Clear & Return

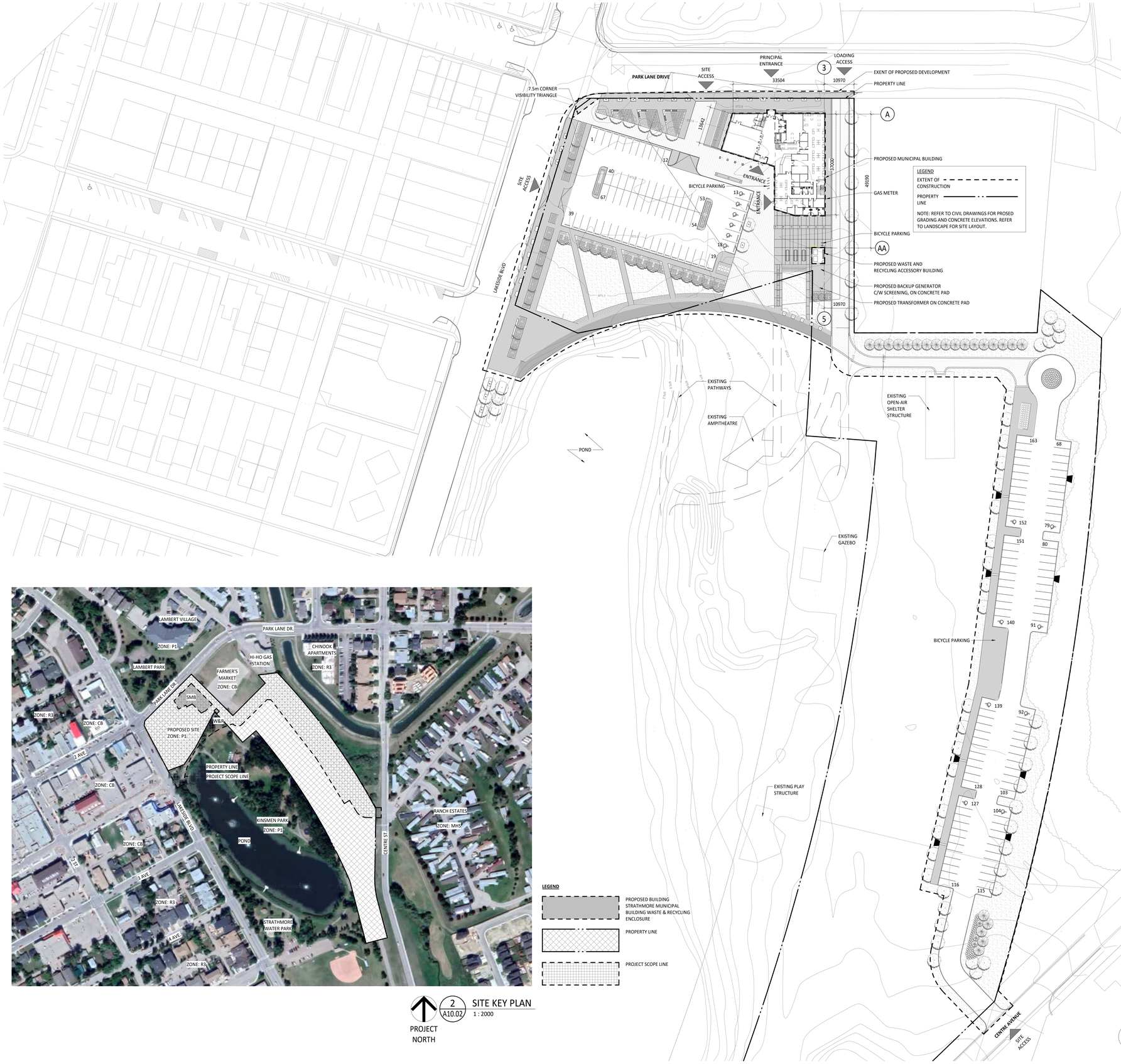
Comments regarding the Authorization Viewer page may be directed to the Regulatory Approvals Centre RAC.Environment@gov.ab.ca.

Alberta Environment and Parks

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Appendix H
Proposed Site Plan

Clifton



SITE INFORMATION

LEGAL DESCRIPTION

BLOCK 3; PLAN 941 1772; SW 1/4 14 - 24 - 25 - 4

CIVIC ADDRESS

1 PARK LANE DRIVE, STRATHMORE AB

ZONING

P1 - PUBLIC SERVICE DISTRICT
|CHWY - HIGHWAY COMMERCIAL DISTRICT SHOWN, FOR REFERENCE ONLY

SITE ANALYSIS

SITE AREA = 19,640 SQ.M. (4.85 ACRES/ 1.96 HECTARES)

GROSS AREA MUNICIPAL BUILDING	= 2,787.1 SQ.M (30,000 SQ.FT)
GROSS AREA WASTE & RECYCLING BUILDING	= 28.2 SQ.M (303.5 SQ.FT)
FOOTPRINT MUNICIPAL BUILDING	= 1,114.8 SQ.M (12,000 SQ.FT)
FOOTPRINT WASTE & RECYCLING BUILDING	= 28.2 SQ.M (303.5 SQ.FT)
NUMBER OF BUILDINGS	= 2
F.A.R.	= TOATL FLOOR AREA/ SITE AREA = 2,815.3/ 19640 = 0.143
SITE COVERAGE	= TOTAL BUILDING FOOTPRINT/ SITE AREA = 1,143/ 19640 = 5.8%

VEHICLE PARKING ANALYSIS

PARKING REQUIREMENT

PORTION OF PARKING COUNT IS ON SEPARATE PARCEL, SUBSEQUENT PARCEL SUBDIVISION TO FOLLOW AT LATER DATE.

BASED ON TOWN OF STRATHMORE LAND USE BYLAW NO. 14-11
TABLE 3.9A - PARKING REQUIREMENTS

PROFESSIONAL OFFICES 1 PARKING SPACE/37 SQ.M GROSS FLOOR AREA

3.9.1(a) ii. THE APPROVING AUTHORITY SHALL REQUIRE THE NEXT HIGHER WHOLE NUMBER OF PARKING STALLS, WHEN THE CALCULATION RESULTS IN A FRACTIONAL NUMBER OF PARKING SPACES.

3.9.1(a) v. FOR COMMERCIAL AND INDUSTRIAL USES, PARKING SHALL BE CALCULATED ON THE BASIS OF GROSS FLOOR AREA LESS 15% FOR HALLS, STAIRWAYS AND MECHANICAL ROOM.

GROSS FLOOR AREA	= 2026.0 SQ.M
LESS 15% (2026.0 x 0.85)	= 1722.1 SQ.M
2,026.0 SQ.M / 37 SQ.M	= 46.54
ROUND UP TO NEAREST WHOLE NUMBER	= 47 PARKING SPACES REQUIRED
WEST PARKING LOT - STALLS PROVIDED	= 67
SOUTH PARKING LOT - STALLS PROVIDED	= 96
TOTAL PARKING STALLS PROVIDED ON SITE	= 163

LOADING STALL REQUIREMENTS

BASED ON LOADING REQUIRMENTS DERIVED FROM 3.9.1.(a) x.

GROSS FLOOR AREA	= 2026.0 SQ.M
LESS 15% (2026.0 x 0.85)	= 1722.1 SQ.M
1722.1 / 1860 SQ. M	= 1 LOADING STALL REQUIRED

BICYCLE PARKING ANALYSIS

PARKING REQUIREMENT

PORTION OF PARKING COUNT IS ON SEPARATE PARCEL, SUBSEQUENT PARCEL SUBDIVISION TO FOLLOW AT LATER DATE.

BASED ON TOWN OF STRATHMORE LAND USE BYLAW NO. 14-11
SCHEDULE 3.12A - BICYCLE PARKING AND FACILITIES

OFFICE 6 SPACES PER 2,000 SQ.M

GROSS FLOOR AREA	= 2,026.0 SQ.M
2,026.0 SQ.M / 2,000	= 1.013
ROUND UP TO NEAREST WHOLE NUMBER	= 2
2 X 6 BICYCLE STALLS	= 12
WEST PARKING LOT - BICYCLE STALLS PROVIDED	= 5
SOUTH PARKING LOT - BICYCLE STALLS PROVIDED	= 7
TOTAL BICYCLE PARKING STALLS PROVIDED ON SITE	= 12

Notes:
- Dimension to face of stud (interior partitions), concrete, concrete block, exterior wall sheathing - unless noted otherwise
- Note when required minimum clear dimensions will be identified.
- Verify all dimensions, elevations, and datum; report any errors and/ or discrepancies to the architect prior to construction.
- Do not scale drawings.
- This drawing supercedes previous issues.

PRELIMINARY - NOT FOR CONSTRUCTION

No.	Description	Date (YYYY-MM-DD)
A	DEVELOPMENT PERMIT	2019-07-23

Issued For / Revisions

Project: Strathmore Municipal Building
Project Number: 17063
1 Park Lane Drive
Strathmore, Alberta

Legal Description: BL3; PL 941 1772; SW 1/4 14 - 24 - 25 - 4	Building Permit No.: TBD
Development Permit No.: TBD	DSSP No.: TBD

Gibbs Gage ARCHITECTS
350,140 10 Ave SE, Calgary, Alberta. T2G 0R1
Ph: 403.233.2000 Fax: 403-264-2077

Drawing Title: PROPOSED SITE PLAN

Drawn by: MJ	Scale: As indicated
Reviewed by: MJ	Date (YYYY-MM-DD): 2019-07-23
Manager: KH	
Peer Review: SC	

Drawing Number: A10.02
Revision Number: A

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Appendix I
Photographs

Clifton



Photograph 1
Kinsmen Park.



Photograph 2
Playground at Kinsmen Park.



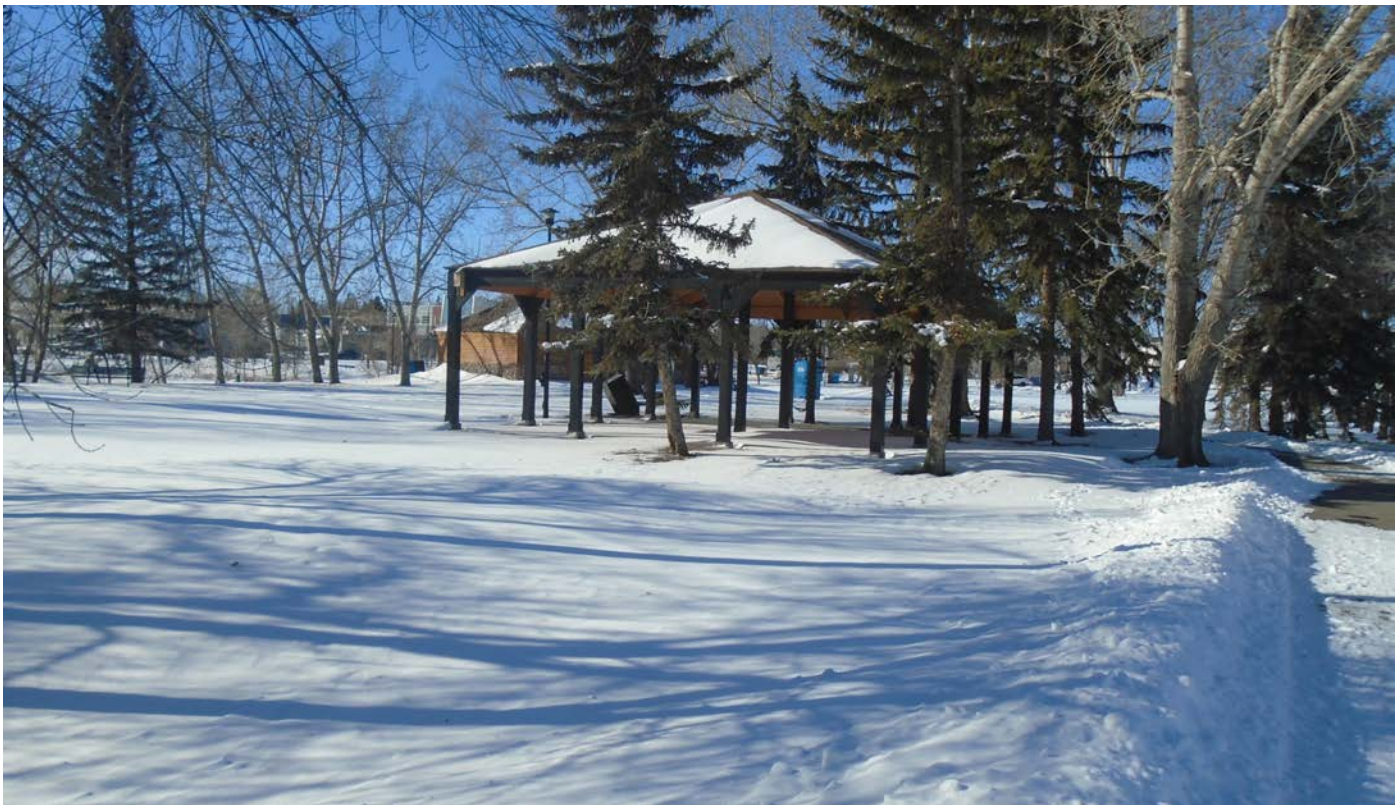
Photograph 3
Splash Park at Kinsmen Park.



Photograph 4
Kinsmen Lake.



Photograph 5
Covered structure on the east side of Kinsmen Park.



Photograph 6
Covered structure located centrally in Kinsmen Park.



Photograph 7
Amphitheatre in Kinsmen Park.



Photograph 8
Pump house structure on the west side of Kinsmen Park.



Photograph 9
Public restrooms on the south side of Kinsmen Park.



Photograph 10
Hi Ho Gas Station, northeast of the Site (Property #1).



Photograph 11
Western Irrigation District Canal.



Photograph 12
Parking lot in the northwestern corner of Kinsmen Park.

Appendix J
Tables

Clifton

Table 1 - Summary of Soil Samples for Laboratory Analyses

Borehole ID	Sample ID	Depth (m bgs)	Analytes	Rationale
MW101	101-3		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
	101-5		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
MW102	102-1		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
	102-4		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
	102-14		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
MW103	103-1		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
	103-5		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
MW104	104-3		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
	104-7		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
MW105	105-5		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	
	105-9		BTEX Metals PHCs fractions F1 - F4 Salinity VOCs	

Notes:

m bgs meters below ground surface

Table 1 - Summary of Soil Samples for Laboratory Analyses

Borehole ID	Sample ID	Depth (m bgs)	Analytes		Rationale
MW106	106-2		BTEX PHCs fractions F1 - F4 VOCs	Metals Salinity	
	106-5		BTEX PHCs fractions F1 - F4 VOCs	Metals Salinity	
MW107	107-3		BTEX PHCs fractions F1 - F4 VOCs	Metals Salinity	
	107-5		BTEX PHCs fractions F1 - F4 VOCs	Metals Salinity	
MW108	108-2		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
	108-5		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
MW109	109-2		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
	109-5		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
MW110	110-2		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
	110-5		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	

Notes:

m bgs meters below ground surface

Table 1 - Summary of Soil Samples for Laboratory Analyses

Borehole ID	Sample ID	Depth (m bgs)	Analytes		Rationale
MW111	MW111-2		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
	MW111-5		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
MW112	MW112-2		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	
	MW112-4		BTEX PHC fractions F1 - F4 PAHs VOCs	Metals Herbicides Pesticides Nutrients	

Notes:

m bgs meters below ground surface

Table 2 - Summary of Soil Laboratory Analyses
QA/QC - Field Duplicate Samples

Sample ID	102-4	102-14	RPD [1] (%)	RDL [2]	Acceptable Range [3] (%)
Sample Date	17-Apr-19				
Hydrocarbons					
Benzene	<0.0050	<0.0050	NC	0.0050	80
Toluene	<0.050	<0.050	NC	0.020	80
Ethylbenzene	<0.010	<0.010	NC	0.010	80
Xylenes(Total)	<0.045	<0.045	NC	0.040	80
F1 minus BTEX (C6 - C10)	<10	<10	NC	10	80
F2 (C10 - C16)	<10	<10	NC	10	80
F3 (C16-C34)	<50	<50	NC	50	80
F4 (C34-C50)	<50	<50	NC	50	80
Calculated Parameters					
Cation/EC Ratio	9.9	10	1.0	0.10	60
Ion Balance	1.3	1.0	26	0.010	60
Calcium	8.1	8.4	3.6	0.47	60
Magnesium	2.5	3.8	41	0.32	60
Sodium	41	42	2.4	0.79	60
Potassium	2.4	2.9	19	0.41	60
Boron	0.13	0.13	0.00	0.032	60
Chloride	42	36	15	1.6	60
Sulphate	32	34	6.1	1.6	60
Soluble Parameters					
Chloride	150	110	31	5.0	60
Conductivity (dS/m)	0.86	0.81	6.0	0.020	60
pH	7.95	7.87	1.01	N/A	60
Sodium Adsorption Ratio	6.0	5.4	11	0.10	60
Calcium	28	27	3.6	1.5	60
Magnesium	8.6	12	33	1.0	60
Sodium	140	130	7.4	2.5	60
Potassium	8.4	9.2	9.1	1.3	60
Saturation %	29	32	9.8	N/A	60
Sulphate	110	110	0.00	N/A	60
Theoretical Gypsum Requirement	<0.20	<0.20	NC	5.0	60

Notes:

1 Relative percent difference = $((X_1-X_2) / ((X_1 + X_2) / 2)) \times 100$

2 Reportable detection limit as published in the laboratory report.

3 Acceptable range is 1.5 x Maxxam's acceptable RPD range.

Bold The RPD is outside of the acceptable range.

NC Not Calculated

All results in mg/kg unless otherwise noted.

Table 2 - Summary of Soil Laboratory Analyses
QA/QC - Field Duplicate Samples

Sample ID	102-4	102-14	RPD [1] (%)	RDL [2]	Acceptable Range [3] (%)
Sample Date	17-Apr-19				
VOCs					
1,1,1,2-tetrachloroethane	<0.050	<0.050	NC	0.050	80
1,1,1-trichloroethane	<0.020	<0.020	NC	0.020	80
1,1,2,2-tetrachloroethane	<0.050	<0.050	NC	0.050	80
1,1,2-trichloroethane	<0.020	<0.020	NC	0.020	80
1,1-dichloroethane	<0.020	<0.020	NC	0.020	80
1,1-dichloroethene	<0.020	<0.020	NC	0.020	80
1,2,3-trichlorobenzene	<0.040	<0.040	NC	0.040	80
1,2,4-trichlorobenzene	<0.040	<0.040	NC	0.040	80
1,2,4-trimethylbenzene	<0.50	<0.50	NC	0.50	80
1,2-dibromoethane	<0.0020	<0.0020	NC	0.0020	80
1,2-dichlorobenzene	<0.020	<0.020	NC	0.020	80
1,2-dichloroethane	<0.0020	<0.0020	NC	0.0020	80
1,2-dichloropropane	<0.020	<0.020	NC	0.020	80
1,3,5-trichlorobenzene	<0.040	<0.040	NC	0.040	80
1,3,5-trimethylbenzene	<0.50	<0.50	NC	0.50	80
1,3-dichlorobenzene	<0.020	<0.020	NC	0.020	80
1,4-dichlorobenzene	<0.020	<0.020	NC	0.020	80
Bromodichloromethane	<0.030	<0.030	NC	0.030	80
Bromoform	<0.050	<0.050	NC	0.050	80
Bromomethane	<0.020	<0.020	NC	0.020	80
Carbon tetrachloride	<0.00050	<0.00050	NC	0.00050	80
Chlorobenzene	<0.0010	<0.0010	NC	0.0010	80
Chlorodibromomethane	<0.020	<0.020	NC	0.020	80
Chloroethane	<0.020	<0.020	NC	0.020	80
Chloroform	<0.010	<0.010	NC	0.010	80
Chloromethane	<0.030	<0.030	NC	0.030	80
cis-1,2-dichloroethene	<0.020	<0.020	NC	0.020	80
cis-1,3-dichloropropene	<0.020	<0.020	NC	0.020	80
Dichloromethane	<0.030	<0.030	NC	0.030	80
Methyl methacrylate	<0.040	<0.040	NC	0.040	80
Methyl-tert-butylether (MTBE)	<0.030	<0.030	NC	0.030	80
Styrene	<0.020	<0.020	NC	0.020	80
Tetrachloroethene	<0.010	<0.010	NC	0.010	80
trans-1,2-dichloroethene	<0.020	<0.020	NC	0.020	80
trans-1,3-dichloropropene	<0.020	<0.020	NC	0.020	80
Trichloroethene (TCE)	<0.010	<0.010	NC	0.010	80
Trichlorofluoromethane	<0.020	<0.020	NC	0.020	80
Vinyl chloride	<0.00030	<0.00030	NC	0.00030	80

Notes:

1 Relative percent difference = $((X_1-X_2) / ((X_1 + X_2) / 2)) \times 100$

2 Reportable detection limit as published in the laboratory report.

3 Acceptable range is 1.5 x Maxxam's acceptable RPD range.

Bold The RPD is outside of the acceptable range.

NC Not Calculated

All results in mg/kg unless otherwise noted.

Table 3 - Summary of Soil Laboratory Analyses
QA/QC - Trip Blank - VOCs

Sample ID	Trip Blank 1	Trip Blank 2	RDL[1]
Sample Date	17-Apr-19	22-Apr-19	
Bromodichloromethane	<0.030	<0.030	0.030
Bromoform	<0.050	<0.050	0.050
Bromomethane	<0.020	<0.020	0.020
Carbon tetrachloride	<0.00050	<0.00050	0.00050
Chlorobenzene	<0.0010	<0.0010	0.0010
Chlorodibromomethane	<0.020	<0.020	0.020
Chloroethane	<0.020	<0.020	0.020
Chloroform	<0.010	<0.010	0.00080
Chloromethane	<0.030	<0.030	0.030
1,2-dibromoethane	<0.0020	<0.0020	0.0020
1,2-dichlorobenzene	<0.020	<0.020	0.020
1,3-dichlorobenzene	<0.020	<0.020	0.020
1,4-dichlorobenzene	<0.020	<0.020	0.020
1,1-dichloroethane	<0.020	<0.020	0.020
1,2-dichloroethane	<0.0020	<0.0020	0.002
1,1-dichloroethene	<0.020	<0.020	0.020
cis-1,2-dichloroethene	<0.020	<0.020	0.020
trans-1,2-dichloroethene	<0.020	<0.020	0.020
Dichloromethane	<0.030	<0.030	0.030
1,2-dichloropropane	<0.020	<0.020	0.020
cis-1,3-dichloropropene	<0.020	<0.020	0.020
trans-1,3-dichloropropene	<0.020	<0.020	0.020
Methyl methacrylate	<0.040	<0.040	0.040
Methyl-tert-butylether (MTBE)	<0.030	<0.030	0.030
Styrene	<0.020	<0.020	0.020
1,1,1,2-tetrachloroethane	<0.050	<0.050	0.10
1,1,2,2-tetrachloroethane	<0.050	<0.050	0.050
Tetrachloroethene	<0.010	<0.010	0.010
1,2,3-trichlorobenzene	<0.040	<0.040	0.040
1,2,4-trichlorobenzene	<0.040	<0.040	0.040
1,3,5-trichlorobenzene	<0.040	<0.040	0.040
1,1,1-trichloroethane	<0.020	<0.020	0.020
1,1,2-trichloroethane	<0.020	<0.020	0.020
Trichloroethene	0.019	0.019	0.010
Trichlorofluoromethane	<0.020	<0.020	0.020
1,2,4-trimethylbenzene	<0.50	<0.50	0.50
1,3,5-trimethylbenzene	<0.50	<0.50	0.50
Vinyl chloride	<0.00030	<0.00030	0.00030

Notes:

1 Reportable detection limit as published in the laboratory report.

N/A Analyte not sampled for.

All results in mg/kg unless otherwise noted.

Table 4 - Summary of Soil Laboratory Analyses
BTEX and PHC fractions F1-F4

Sample ID	101-3	101-5	102-1	102-4	103-1	103-5	104-3	104-7	Guideline[1]	Guideline[2]
Depth (m bgs)	1.52 - 2.29	3.05 - 3.81	0 - 0.76	2.29 - 3.05	0 - 0.76	3.05 - 3.81	1.52 - 2.29	4.57 - 5.33		
Sample Date	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19		
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.046	0.046
Toluene	0.068	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.52	0.52
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.073	0.073
Xylenes (Total)	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.99	0.99
F1 minus BTEX (C6 - C10)	<10	<10	<10	<10	<10	<10	<10	<10	210	420
F2 (C10 - C16)	<10	<10	13	<10	<10	<10	<10	<10	150	300
F3 (C16 - C34)	<50	<50	400	<50	<50	<50	<50	<50	1,300	2,600
F4 (C34 - C50)	<50	<50	120	<50	<50	<50	<50	<50	5,600	10,000

Sample ID	105-5	105-9	106-2	106-5	107-3	107-5	108-2	108-5	Guideline[1]	Guideline[2]
Depth (m bgs)	3.05 - 3.81	6.10 - 6.86	0.76 - 1.52	3.05 - 3.81	3.05 - 3.81	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81		
Sample Date	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	22-Apr-19	22-Apr-19		
Benzene	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.046	0.046
Toluene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.52	0.52
Ethylbenzene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.073	0.073
Xylenes (Total)	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.99	0.99
F1 minus BTEX (C6 - C10)	<10	<10	<10	<10	<10	<10	<10	<10	210	420
F2 (C10 - C16)	<10	<10	41	<10	<10	<10	<10	<10	150	300
F3 (C16 - C34)	<50	<50	370	<50	<50	<50	<50	<50	1,300	2,600
F4 (C34 - C50)	<50	<50	230	<50	<50	<50	<50	<50	5,600	10,000

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained surface soil (< 3 m bgs).

2 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained subsoil (> 3 m bgs).

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

N/A Analyte not sampled.

All results are expressed as mg/kg unless otherwise noted.

Table 4 - Summary of Soil Laboratory Analyses
BTEX and PHC fractions F1-F4

Sample ID	109-2	109-5	110-2	110-5	111-2	111-5	112-2	112-4	Guideline[1]	Guideline[2]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	2.29 - 3.05		
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19		
Benzene	<0.0050	<0.0050	**0.44**	<0.0050	<0.0050	<0.0050	0.037	<0.0050	0.046	0.046
Toluene	<0.050	<0.050	**0.88**	<0.050	<0.050	<0.050	0.080	<0.050	0.52	0.52
Ethylbenzene	<0.010	<0.010	**0.38**	<0.010	<0.010	<0.010	<0.010	<0.010	0.073	0.073
Xylenes (Total)	<0.045	<0.045	**2.2**	<0.045	<0.045	<0.045	0.053	<0.045	0.99	0.99
F1 minus BTEX (C6 - C10)	<10	<10	<10	<10	<10	<10	<10	<10	210	420
F2 (C10 - C16)	<10	22	150	<10	<10	<10	<10	<10	150	300
F3 (C16 - C34)	<50	<50	370	<50	<50	<50	<50	<50	1,300	2,600
F4 (C34 - C50)	<50	<50	58	<50	<50	<50	<50	<50	5,600	10,000

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained surface soil (< 3 m bgs).

2 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained subsoil (> 3 m bgs).

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

All results are expressed as mg/kg unless otherwise noted.

Table 5 - Summary of Soil Laboratory Analyses
Volatile Organic Compounds

Sample ID	101-3	101-5	102-1	102-4	103-1	103-5	104-3	104-7	
Depth (m bgs)	1.52 - 2.29	3.05 - 3.81	0 - 0.76	2.29 - 3.05	0 - 0.76	3.05 - 3.81	1.52 - 2.29	4.57 - 5.33	Guideline[1]
Sample Date	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	
1,1,1,2-tetrachloroethane	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
1,1,1-trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1,2,2-tetrachloroethane	<0.050	<0.050	<0.050	<0.050	0.093	<0.050	<0.050	<0.050	NG
1,1,2-trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1-dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.15
1,2,3-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.26
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.78
1,2,4-trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NG
1,2-dibromoethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
1,2-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.097
1,2-dichloroethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.025
1,2-dichloropropane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,3,5-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9
1,3,5-trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NG
1,3-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,4-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.051
Bromodichloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Bromoform	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Bromomethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Carbon tetrachloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.013
Chlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.39
Chlorodibromomethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.91
Chloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Chloroform	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.16
Chloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
cis-1,2-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
cis-1,3-dichloropropene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Dichloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.10
Methyl methacrylate	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.3
Methyl-tert-butylether (MTBE)	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.044
Styrene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.68
Tetrachloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.26
trans-1,2-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
trans-1,3-dichloropropene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Trichloroethene (TCE)	**0.16**	**0.22**	<0.010	<0.010	**0.24**	**0.19**	0.032	<0.010	0.054
Trichlorofluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Vinyl chloride	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.0083

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

All results are expressed as mg/kg unless otherwise noted.

Table 5 - Summary of Soil Laboratory Analyses
Volatile Organic Compounds

Sample ID	105-5	105-9	106-2	106-5	107-3	107-5	108-2	108-5	Guideline[1]
Depth (m bgs)	3.05 - 3.81	6.10 - 6.86	0.76 - 1.52	3.05 - 3.81	1.52 - 2.29	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	
Sample Date	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	22-Apr-19	22-Apr-19	
1,1,1,2-tetrachloroethane	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
1,1,1-trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1,2,2-tetrachloroethane	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
1,1,2-trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1-dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.15
1,2,3-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.26
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.78
1,2,4-trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NG
1,2-dibromoethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
1,2-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.097
1,2-dichloroethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.025
1,2-dichloropropane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,3,5-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9
1,3,5-trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NG
1,3-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,4-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.051
Bromodichloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Bromoform	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Bromomethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Carbon tetrachloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.013
Chlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.39
Chlorodibromomethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.91
Chloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Chloroform	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.16
Chloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
cis-1,2-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
cis-1,3-dichloropropene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Dichloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.10
Methyl methacrylate	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.3
Methyl-tert-butylether (MTBE)	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.044
Styrene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.68
Tetrachloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.26
trans-1,2-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
trans-1,3-dichloropropene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Trichloroethene (TCE)	<0.010	<0.010	0.033	**0.16**	**0.31**	**0.082**	<0.010	<0.010	0.054
Trichlorofluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Vinyl chloride	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.0083

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

All results are expressed as mg/kg unless otherwise noted.

Table 5 - Summary of Soil Laboratory Analyses
Volatile Organic Compounds

Sample ID	109-2	109-5	110-2	110-5	111-2	111-5	112-2	112-4	Guideline[1]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	2.29 - 3.05	
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
1,1,1,2-tetrachloroethane	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
1,1,1-trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1,2,2-tetrachloroethane	<0.050	<0.050	0.10	<0.050	<0.050	<0.050	<0.050	<0.050	NG
1,1,2-trichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1-dichloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,1-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.15
1,2,3-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.26
1,2,4-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.78
1,2,4-trimethylbenzene	<0.50	<0.50	0.73	<0.50	<0.50	<0.50	<0.50	<0.50	NG
1,2-dibromoethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
1,2-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.097
1,2-dichloroethane	<0.0020	<0.0020	0.011	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.025
1,2-dichloropropane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,3,5-trichlorobenzene	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.9
1,3,5-trimethylbenzene	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	NG
1,3-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
1,4-dichlorobenzene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.051
Bromodichloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Bromoform	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Bromomethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Carbon tetrachloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.013
Chlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.39
Chlorodibromomethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.91
Chloroethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Chloroform	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.16
Chloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
cis-1,2-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
cis-1,3-dichloropropene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Dichloromethane	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.10
Methyl methacrylate	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	1.3
Methyl-tert-butylether (MTBE)	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.044
Styrene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.68
Tetrachloroethene	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.26
trans-1,2-dichloroethene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
trans-1,3-dichloropropene	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Trichloroethene (TCE)	<0.010	<0.010	<0.010	<0.010	0.016	<0.010	<0.010	0.015	0.054
Trichlorofluoromethane	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Vinyl chloride	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.0083

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

Table 6 - Summary of Soil Laboratory Analyses
Polycyclic Aromatic Hydrocarbons

Sample ID	108-2	108-5	109-2	109-5	110-2	110-5	Guideline[1]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
1-Methylnaphthalene	<0.0050	<0.0050	0.013	<0.0050	0.17	<0.0050	NG
2-Methylnaphthalene	<0.0050	<0.0050	0.017	<0.0050	0.37	<0.0050	NG
Acenaphthene	<0.0050	<0.0050	<0.0050	<0.0050	0.027	<0.0050	0.33
Acenaphthylene	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.0050	NG
Acridine	<0.010	<0.010	<0.010	<0.010	0.059	<0.010	NG
Anthracene	<0.0040	<0.0040	<0.0040	<0.0040	**0.057**	<0.0040	1.3
Benzo(a)anthracene	<0.0050	<0.0050	0.0057	<0.0050	**0.15**	<0.0050	6.2
Benzo(a)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	0.13	<0.0050	0.60
Benzo(b&j)fluoranthene	<0.0050	<0.0050	0.0076	<0.0050	0.19	<0.0050	NG
Benzo(c)phenanthrene	<0.0050	<0.0050	<0.0050	<0.0050	0.021 [2]	<0.0050	NG
Benzo(g,h,i)perylene	<0.0050	<0.0050	<0.0050	<0.0050	0.084	<0.0050	NG
Benzo(k)fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	0.064	<0.0050	NG
Benzo[a]pyrene equivalency	<0.0071	<0.0071	<0.0071	<0.0071	0.21	<0.0071	NG
Benzo[e]pyrene	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.0050	NG
Chrysene	<0.0050	<0.0050	0.0058	<0.0050	0.14	<0.0050	NG
Dibenz(a,h)anthracene	<0.0050	<0.0050	<0.0050	<0.0050	0.025	<0.0050	NG
Fluoranthene	<0.0050	<0.0050	0.019	<0.0050	**0.30**	<0.0050	15.4
Fluorene	<0.0050	<0.0050	<0.0050	<0.0050	0.046	<0.0050	0.29
Indeno(1,2,3-cd)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	0.091	<0.0050	NG
Naphthalene	<0.0050	<0.0050	**0.017**	<0.0050	**0.26**	<0.0050	0.014
Perylene	<0.0050	<0.0050	<0.0050	<0.0050	0.037	<0.0050	NG
Phenanthrene	<0.0050	<0.0050	0.019	<0.0050	**0.26**	<0.0050	0.11
Pyrene	<0.0050	<0.0050	0.013	<0.0050	**0.25**	<0.0050	7.7
Quinoline	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

2 Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

All results are expressed as mg/kg unless otherwise noted.

Table 6 - Summary of Soil Laboratory Analyses
Polycyclic Aromatic Hydrocarbons

Sample ID	111-2	111-5	112-2	112-4	Guideline[1]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	2.29 - 3.05	
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
1-Methylnaphthalene	<0.0050	<0.0050	0.023	<0.0050	NG
2-Methylnaphthalene	<0.0050	<0.0050	0.032	<0.0050	NG
Acenaphthene	<0.0050	<0.0050	<0.0050	<0.0050	0.33
Acenaphthylene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Acridine	<0.010	<0.010	<0.010	<0.010	NG
Anthracene	<0.0040	<0.0040	<0.0040	<0.0040	1.3
Benzo(a)anthracene	<0.0050	<0.0050	0.0065	<0.0050	6.2
Benzo(a)pyrene	<0.0050	<0.0050	0.0052	<0.0050	0.60
Benzo(b&j)fluoranthene	<0.0050	<0.0050	0.011	<0.0050	NG
Benzo(c)phenanthrene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Benzo(g,h,i)perylene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Benzo(k)fluoranthene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Benzo[a]pyrene equivalency	<0.0071	<0.0071	0.010	<0.0071	NG
Benzo[e]pyrene	<0.0050	<0.0050	0.0075	<0.0050	NG
Chrysene	<0.0050	<0.0050	0.0083	<0.0050	NG
Dibenz(a,h)anthracene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Fluoranthene	<0.0050	<0.0050	0.011	<0.0050	15.4
Fluorene	<0.0050	<0.0050	<0.0050	<0.0050	0.29
Indeno(1,2,3-cd)pyrene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Naphthalene	<0.0050	<0.0050	0.014	<0.0050	0.014
Perylene	<0.0050	<0.0050	<0.0050	<0.0050	NG
Phenanthrene	<0.0050	<0.0050	0.022	<0.0050	0.11
Pyrene	<0.0050	<0.0050	0.0099	<0.0050	7.7
Quinoline	<0.010	<0.010	<0.010	<0.010	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

Table 7 - Summary of Soil Laboratory Analyses
Salinity

Sample ID	101-3	101-5	102-1	102-4	103-1	103-5	104-3	104-7	Guideline[1]
Depth (m bgs)	1.52 - 2.29	3.05 - 3.81	0 - 0.76	2.29 - 3.05	0 - 0.76	3.05 - 3.81	1.52 - 2.29	4.57 - 5.33	
Sample Date	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	
Calculated Parameters									
Cation/EC Ratio	11	10	9.3	9.9	9.2	9.8	11	10	NG
Ion Balance	1.3	1.1	1.4	1.3	1.3	1.3	1.9	1.7	NG
Calcium	50	25	11	8.1	5.0	4.4	6.1	3.1	NG
Magnesium	22	7.0	5.8	2.5	2.8	2.6	3.0	2.9	NG
Sodium	330	40	59	41	43	41	39	47	NG
Potassium	19	1.6	11	2.4	9.0	3.1	5.2	1.6	NG
Boron	0.90	0.061	0.18	0.13	0.070	0.030	0.071	<0.054	NG
Chloride	230	66	71	42	27	46	18	15	NG
Sulphate	390	68	36	32	58	20	36	51	NG
Soluble Parameters									
Chloride	380	220	170	150	71	160	50	27	NG
Conductivity (dS/m)	2.9	1.2	1.0	0.86	0.72	0.83	0.61	0.46	4
pH	7.86	7.90	7.36	7.95	7.95	8.17	7.65	7.78	6 - 8.5
Sodium Adsorption Ratio	**13**	3.3	5.6	6.0	6.2	7.2	5.4	6.2	12
Calcium	82	85	28	28	13	15	17	5.7	NG
Magnesium	36	24	14	8.6	7.2	9.2	8.0	5.4	NG
Sodium	540	140	150	140	110	150	110	86	NG
Potassium	31	5.4	28	8.4	23	11	14	2.9	NG
Saturation %	61	30	40	29	39	28	37	54	NG
Sulphate	640	230	90	110	150	72	97	94	NG
Theoretical Gypsum Requirement	6.3	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

All calculated parameters are expressed as mg/kg and all soluble parameters as mg/L unless otherwise noted.

Table 7 - Summary of Soil Laboratory Analyses
Salinity

Sample ID	105-5	105-9	106-2	106-5	107-3	107-5	Guideline[1]
Depth (m bgs)	3.05 - 3.81	6.10 - 6.86	0.76 - 1.52	3.05 - 3.81	3.05 - 3.81	3.05 - 3.81	
Sample Date	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	17-Apr-19	
Calculated Parameters							
Cation/EC Ratio	9.3	11	8.9	11	11	9.6	NG
Ion Balance	1.3	1.1	1.0	1.5	1.2	0.89	NG
Calcium	6.5	31	14	5.0	26	11	NG
Magnesium	5.3	14	10	4.3	12	8.9	NG
Sodium	15	67	51	28	83	41	NG
Potassium	0.69	2.4	6.9	1.6	9.4	4.4	NG
Boron	<0.032	<0.041	0.31	0.087	0.078	<0.032	NG
Chloride	23	2.2	110	21	26	37	NG
Sulphate	23	240	40	32	210	120	NG
Soluble Parameters							
Chloride	72	5.3	290	39	86	120	NG
Conductivity (dS/m)	0.48	1.3	1.2	0.32	1.8	1.1	4
pH	7.80	7.70	7.82	7.87	7.46	8.10	6 - 8.5
Sodium Adsorption Ratio	1.9	3.9	4.2	3.0	6.1	4.0	12
Calcium	20	75	38	9.3	87	35	NG
Magnesium	17	34	27	8.0	39	28	NG
Sodium	47	160	140	51	270	130	NG
Potassium	2.2	5.8	19	3.0	31	14	NG
Saturation %	32	41	37	54	30	32	NG
Sulphate	71	590	110	58	690	390	NG
Theoretical Gypsum Requirement	<0.20	<0.20	<0.20	<0.20	0.52	<0.20	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

m bgs meters below ground surface

NG No Specified Guideline Value

All calculated parameters are expressed as mg/kg and all soluble parameters as mg/L unless otherwise noted.

Table 8 - Summary of Soil Laboratory Analyses
Metals

Sample ID	108-2	108-5	109-2	109-5	110-2	110-5	Guideline[1]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
Elements							
Hexavalent Chromium	<0.080	<0.080	<0.080	<0.080	<0.080	<0.080	0.4
Soluble Parameters							
Hot Water Soluble Boron (mg/L)	0.32	0.11	2.0	<0.10	0.50	<0.10	3.3
Elements							
Antimony	<0.50	<0.50	<0.50	<0.50	<0.50	0.54	20
Arsenic	5.1	6.1	5.5	8.4	4.5	8.3	17
Barium	210	250	270	230	140	300	500
Beryllium	<0.40	0.55	0.40	0.47	<0.40	0.66	5
Cadmium	0.15	0.29	0.19	0.22	0.21	0.25	3.8
Chromium (total)	11	28	22	19	14	26	64
Cobalt	5.1	9.1	4.7	7.3	4.1	8.8	20
Copper	7.8	17	9.2	14	13	19	63
Lead	5.1	9.2	17	7.5	12	10	70
Mercury	<0.050	0.061	0.068	0.065	0.16	0.066	6.6
Molybdenum	0.44	1.2	0.86	1.6	0.59	1.4	4
Nickel	15	30	19	23	14	27	45
Selenium	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50	1
Silver	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	20
Thallium	0.11	0.19	0.10	0.19	0.11	0.20	1
Tin	<1.0	<1.0	<1.0	<1.0	1.1	<1.0	5
Uranium	0.82	1.1	0.87	1.3	0.88	1.1	23
Vanadium	17	25	17	24	15	30	130
Zinc	29	58	50	46	36	62	250

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

m bgs meters below ground surface

All results are expressed as mg/kg unless otherwise noted.

Table 8 - Summary of Soil Laboratory Analyses
Metals

Sample ID	111-2	111-5	112-2	112-4	Guideline[1]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	2.29 - 3.05	
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
Elements					
Hexavalent Chromium	<0.080	<0.080	<0.080	<0.080	0.4
Soluble Parameters					
Hot Water Soluble Boron (mg/L)	<0.10	<0.10	0.12	<0.10	3.3
Elements					
Antimony	<0.50	0.53	<0.50	<0.50	20
Arsenic	4.5	6.9	4.8	6.7	17
Barium	130	240	150	280	500
Beryllium	<0.40	0.64	<0.40	0.62	5
Cadmium	0.089	0.31	0.14	0.25	3.8
Chromium (total)	9.1	30	10	26	64
Cobalt	4.2	9.4	3.6	9.2	20
Copper	6.7	20	9.4	20	63
Lead	4.2	10	7.2	10	70
Mercury	<0.050	0.061	0.057	0.064	6.6
Molybdenum	<0.40	1.5	0.51	1.3	4
Nickel	13	32	12	27	45
Selenium	<0.50	<0.50	<0.50	<0.50	1
Silver	<0.20	<0.20	<0.20	<0.20	20
Thallium	<0.10	0.21	0.15	0.22	1
Tin	<1.0	<1.0	<1.0	<1.0	5
Uranium	0.47	1.2	0.53	1.1	23
Vanadium	13	31	14	32	130
Zinc	24	61	34	63	250

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

2 Matrix Spike exceeds acceptance limits due to matrix interference. Reanalysis yields similar results.

m bgs meters below ground surface

All results are expressed as mg/kg unless otherwise noted.

Table 9 - Summary of Soil Laboratory Analyses
Pesticides and Herbicides

Sample ID	108-2	108-5	109-2	109-5	110-2	110-5	111-2	111-5	112-2	112-4	Guideline[1]
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	2.29 - 3.05	
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
Acephate	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Alachlor	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Aldrin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3.4
Aspon	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Atrazine	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.0088
Azinphos-ethyl	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Azinphos-methyl	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.41
Benfluralin	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
a-BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
b-BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
d-BHC	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Bromacil	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.009
Bromophos	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Bromophos-ethyl	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Butylate	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Captan	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Carbofenthion	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Chlorbenside	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
a-Chlordane	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
g-Chlordane	<0.010	<0.010	<0.010	<0.010	0.041	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Chlorfenson (Ovex)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Chlorfenvinphos (E/Z)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Chlormephos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorothalonil (Daconil)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.0085
Chlorpropham	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Chlorpyrifos	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	49
Chlorpyrifos-methyl	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Dacthal (Chlorthal-Dimethyl)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorthiophos	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Cyanazine (Bladex)	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	0.12
Cyanophos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
o,p'-DDD	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
o,p'-DDE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
p,p'-DDE	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
o,p-DDT + p,p-DDD	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.7
p,p'-DDT	<0.010	<0.010	0.011	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.7
Desethyl atrazine	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Demeton (O+S)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Desmetryn	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Diallate(E/Z)	<0.020	<0.020	<0.020	<0.020	0.022	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Diazinon	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	2.2
Dichlobenil	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dicloran	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dichlorfenthion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Dichlofluanid	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Dichlorvos & Naled	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Diclofop-methyl	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	160
Dicofol	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Dicrotophos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dieldrin	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.59
Dimethoate	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.0058
Dioxathion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Diphenylamine	<0.050	<0.050	<0.050	<0.050	<0.079 (1)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Disulfoton (Di-Syston)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Endosulfan sulfate	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.8
Endosulfan I	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.8
Endosulfan II	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.8
Endrin	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	2.4
Endrin aldehyde	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	NG
Endrin Ketone	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	NG
EPN	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Eptam (EPTC)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Ethalfluralin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Ethion	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Fenchlorphos (Ronnel)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Fenitrothion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Fenthion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Fensulfothion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Folpet	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Fonofos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Heptachlor	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG
Heptachlor epoxide	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.039
Hexachlorobenzene	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Hexazinone	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Iodofenphos	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

m bgs meters below ground surface

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Tier 1 guideline established.

All results are expressed as mg/kg unless otherwise noted.

Table 9 - Summary of Soil Laboratory Analyses
Pesticides and Herbicides

Sample ID	108-2	108-5	109-2	109-5	110-2	110-5	111-2	111-5	112-2	112-4	
Depth (m bgs)	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	3.05 - 3.81	0.76 - 1.52	2.29 - 3.05	Guideline[1]
Sample Date	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	22-Apr-19	
Iprodione (Rovral)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Isofenphos	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Lindane (BHC-Gamma)	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.31
Malaoxon	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Malathion	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.82
Metalaxyl	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Methamidophos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Methidathion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
4,4'-methoxychlor	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	3500
Metolachlor (Dual)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.048
Metribuzin (Sencor)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.024
Mevinphos, cis/trans (Phosdrin)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Mirex	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Nitrofen	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Omethoate	<0.050	<0.050	<0.050	<0.050	<0.068 (1)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Parathion	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	7.2
Methyl parathion	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Permethrin (Cis/Trans)	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Phorate (Thimet)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.075
Phosalone	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Phosmet	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Phosphamidon	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Pirimicarb	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Pirimiphos-ethyl	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Pirimiphos-methyl	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Procymidone	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Profenofos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Profluralin	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Prometryne	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Pronamide	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Propazine	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Propiconazole (Tilt)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Pyrazophos	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Quinalophos	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	<0.030	NG
Quintozene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Simazine	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.033
Stirophos (Tetrachlorvinphos)	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Sulfotep	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Tecnazene	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Terbufos	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.08
Terbutryne	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Terbuthylazine	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Tetradifon	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG
Tolyfluanid	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Triadimefon	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Triallate	<0.020	<0.020	<0.020	<0.020	**0.29**	<0.020	<0.020	<0.020	<0.020	<0.020	0.0077
Trifluralin	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.22
Vinclozolin	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

m bgs meters below ground surface

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Tier 1 guideline established.

All results are expressed as mg/kg unless otherwise noted.

Table 10 - Summary of Well Monitoring

Monitoring Well	Monitor Date	Top of Pipe Elevation [1]	Total Depth bTOP[2]	Depth to Water bTOP	Depth to Water BGS[3]	LPH[4] Thickness	OVA Vapour Concentrations[5]	PID Vapour Concentrations[5]	Comments
	(dd-mm-yy)	(m)	(m)	(m)	(m)	(mm)	(ppm)	(ppm)	
MW101	7-May-19	-0.12	3.94	2.55	2.67	0	720	0	Flush-mount
MW102	7-May-19	-0.10	2.34	5.71	5.81	0	9,500	3	Flush-mount
MW102	17-May-19	-0.10	2.34	5.71	5.81	0	-	-	Flush-mount
MW103	7-May-19	-0.18	3.09	4.47	4.65	0	>11,100	1	Flush-mount
MW104	7-May-19	-0.12	2.45	3.85	3.97	0	470	0	
MW105	7-May-19	0.12	5.09	8.80	8.68	0	>11,100	6	Flush-mount Duplicate sample
MW106	7-May-19	-0.09	2.05	2.62	2.71	0	0	1	Flush-mount Insufficient water
MW107	7-May-19	-0.09	2.57	4.48	4.57	0	9,400	1	
MW108	7-May-19	0.87	2.63	7.02	6.15	0	15	0	Stick-up
MW109	7-May-19	0.87	2.18	5.51	4.64	0	55	0	Stick-up
MW110	7-May-19	0.87	6.83	7.01	6.14	0	50	0	Stick-up Insufficient water
MW111	7-May-19	0.84	2.31	6.96	6.12	0	15	0	Stick-up Duplicate sample taken
MW112	7-May-19	0.89	3.06	5.63	4.74	0	210	0	Stick-up
MW9	7-May-19	-0.05	2.01	8.84	8.89	0	-	-	Flush-mount

Notes:

1 Meters below surface.
2 Below top of pipe.
3 Below ground surface.
4 Liquid petroleum hydrocarbon.
5 Monitoring well vapour concentrations measured in monitoring well standpipes using Eagle 2 gas monitor with a photo ionization detector.
- Not monitored

Table 11 - Summary of Groundwater Laboratory Analyses
QA/QC - Field Duplicate Samples

Sample ID	MW105	MW195	RPD [1]	MW111	MW191	RPD [1]	RDL [2]	Acceptable Range [3] (%)
Sample Date	7-May-19		(%)	7-May-19		(%)		
Hydrocarbons								
Benzene	<0.00040	<0.00040	NC	<0.00040	<0.00040	NC	0.00040	60
Toluene	<0.00040	<0.00040	NC	<0.00040	<0.00040	NC	0.00040	60
Ethylbenzene	<0.00040	<0.00040	NC	<0.00040	<0.00040	NC	0.00040	60
Xylenes(Total)	<0.00089	<0.00089	NC	<0.00089	<0.00089	NC	0.00089	60
F1 minus BTEX (C6 - C10)	<0.10	<0.10	NC	<0.10	<0.10	NC	0.10	60
F2 (C10 - C16)	<0.10	<0.10	NC	<0.10	<0.10	NC	0.10	60
PAHs								
1-Methylnaphthalene				<0.00010	<0.00010	NC	0.00010	60
2-Methylnaphthalene				<0.00010	<0.00010	NC	0.00010	60
Acenaphthene				<0.00010	<0.00010	NC	0.00010	60
Acenaphthylene				<0.00010	<0.00010	NC	0.00010	60
Acridine				<0.000040	<0.000040	NC	0.000050	60
Anthracene				<0.000010	<0.000010	NC	0.000010	60
Benzo(a)anthracene				<0.0000085	<0.0000085	NC	0.0000085	60
Benzo(a)pyrene				<0.0000075	<0.0000075	NC	0.0000075	60
Benzo(b&j)fluoranthene				<0.0000085	<0.0000085	NC	0.0000085	60
Benzo(c)phenanthrene				<0.000050	<0.000050	NC	0.000050	60
Benzo(g,h,i)perylene				<0.0000085	<0.0000085	NC	0.0000085	60
Benzo(k)fluoranthene				<0.0000085	<0.0000085	NC	0.0000085	60
Benzo[a]pyrene equivalency				<0.000010	<0.000010	NC	0.000010	60
Benzo[e]pyrene				<0.000050	<0.000050	NC	0.000050	60
Chrysene				<0.0000085	<0.0000085	NC	0.0000085	60
Dibenz(a,h)anthracene				<0.0000075	<0.0000075	NC	0.0000075	60
Fluoranthene				<0.000010	<0.000010	NC	0.000010	60
Fluorene				<0.000050	<0.000050	NC	0.000050	60
Indeno(1,2,3-cd)pyrene				<0.0000085	<0.0000085	NC	0.0000085	60
Naphthalene				<0.00010	<0.00010	NC	0.00010	60
Perylene				<0.000050	<0.000050	NC	0.000050	60
Phenanthrene				<0.000050	<0.000050	NC	0.000050	60
Pyrene				<0.000020	<0.000020	NC	0.000020	60
Quinoline				<0.00020	<0.00020	NC	0.00020	60

No duplicate collected.

Notes:

1 Relative percent difference = $((X_1-X_2) / ((X_1 + X_2) / 2)) \times 100$

2 Reportable detection limit as published in the laboratory report.

3 Acceptable range is 1.5 x Maxxam's acceptable RPD range.

NC Not Calculated.

All results in mg/L unless otherwise noted.

Table 11 - Summary of Groundwater Laboratory Analyses
QA/QC - Field Duplicate Samples

Sample ID	MW105	MW195	RPD [1]	MW111	MW191	RPD [1]	RDL [2]	Acceptable
Sample Date	7-May-19		(%)	7-May-19		(%)		Range [3] (%)
VOCs								
1,1,1,2-tetrachloroethane	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	60
1,1,1-trichloroethane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,1,2,2-tetrachloroethane	<0.0020	<0.0020	NC	<0.0020	<0.0020	NC	0.0020	60
1,1,2-trichloroethane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,1-dichloroethane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,1-dichloroethene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,2,3-trichlorobenzene	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	60
1,2,4-trichlorobenzene	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	60
1,2,4-trimethylbenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,2-dibromoethane	<0.00020	<0.00020	NC	<0.00020	<0.00020	NC	0.00020	60
1,2-dichlorobenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,2-dichloroethane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,2-dichloropropane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,3,5-trichlorobenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,3,5-trimethylbenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,3-dichlorobenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
1,4-dichlorobenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Bromodichloromethane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Bromoform	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Bromomethane	<0.0020	<0.0020	NC	<0.0020	<0.0020	NC	0.0020	60
Carbon tetrachloride	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Chlorobenzene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Chlorodibromomethane	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	60
Chloroethane	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	60
Chloroform	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Chloromethane	<0.0020	<0.0020	NC	<0.0020	<0.0020	NC	0.0020	60
cis-1,2-dichloroethene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
cis-1,3-dichloropropene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Dichloromethane	<0.0020	<0.0020	NC	<0.0020	<0.0020	NC	0.0020	60
Methyl methacrylate	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Methyl-tert-butylether (MTBE)	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Styrene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Tetrachloroethene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Total Trihalomethanes	<0.0013	<0.0013	NC	<0.0013	<0.0013	NC	0.0013	60
trans-1,2-dichloroethene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
trans-1,3-dichloropropene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Trichloroethene	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Trichlorofluoromethane	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60
Vinyl chloride	<0.00050	<0.00050	NC	<0.00050	<0.00050	NC	0.00050	60

Notes:

1 Relative percent difference = $((X_1-X_2) / ((X_1 + X_2) / 2)) \times 100$

2 Reportable detection limit as published in the laboratory report.

3 Acceptable range is 1.5 x Maxxam's acceptable RPD range.

NC Not Calculated.

All results in mg/L unless otherwise noted.

Table 11 - Summary of Groundwater Laboratory Analyses
QA/QC - Field Duplicate Samples

Sample ID	MW105	MW195	RPD [1]	MW111	MW191	RPD [1]	RDL [2]	Acceptable Range [3] (%)
Sample Date	7-May-19		(%)	7-May-19		(%)		
Elements								
Aluminum	<0.0030	<0.0030	NC	<0.0030	<0.0030	NC	0.0030	40
Antimony	<0.00060	<0.00060	NC	<0.00060	<0.00060	NC	0.00060	40
Arsenic	0.00074	0.00076	2.7	0.00038	0.00043	12	0.00020	40
Barium	0.053	0.049	7.8	0.094	0.096	2.1	0.010	40
Beryllium	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	40
Boron	0.17	0.17	0.00	0.19	0.064	**99**	0.020	40
Calcium	230	240	4.3	83	88	5.8	0.30	40
Chromium	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	40
Cobalt	0.00088	0.0011	22	<0.00030	<0.00030	NC	0.00030	40
Copper	0.00086	0.0011	24	0.00030	0.00042	33	0.00020	40
Iron	0.14	0.12	15	0.091	0.091	0.00	0.060	40
Lead	<0.00020	<0.00020	NC	<0.00020	<0.00020	NC	0.00020	40
Lithium	0.17	0.16	6.1	0.051	0.053	3.8	0.020	40
Magnesium	97	99	2.0	64	65	1.6	0.20	40
Manganese	0.41	0.45	9.3	0.072	0.078	8.0	0.0040	40
Molybdenum	0.024	0.024	0.00	0.0071	0.0085	18	0.00020	40
Nickel	0.0041	0.0046	11	0.0017	0.0019	11	0.00050	40
Phosphorus	<0.10	<0.10	NC	<0.10	<0.10	NC	0.10	40
Potassium	9.5	9.2	3.2	2.7	3.0	11	0.30	40
Selenium	0.00078	0.0010	25	0.00032	0.00043	29	0.00020	40
Silicon	6.7	6.8	1.5	5.9	5.9	0.00	0.10	40
Silver	<0.00010	<0.00010	NC	<0.00010	<0.00010	NC	0.00010	40
Sodium	260	250	3.9	39	42	7.4	2.5	40
Strontium	1.4	1.4	0.00	0.75	0.76	1.3	0.020	40
Sulphur	310	340	9.2	28	29	3.5	1	40
Thallium	<0.00020	<0.00020	NC	<0.00020	<0.00020	NC	0.00020	40
Tin	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	40
Titanium	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	40
Uranium	0.034	0.035	2.9	0.019	0.019	0.00	0.00010	40
Vanadium	<0.0010	<0.0010	NC	<0.0010	<0.0010	NC	0.0010	40
Zinc	<0.0030	<0.0030	NC	<0.0030	<0.0030	NC	0.0030	40

Notes:

1 Relative percent difference = $((X_1-X_2) / ((X_1 + X_2) / 2)) \times 100$

2 Reportable detection limit as published in the laboratory report.

3 Acceptable range is 1.5 x Maxxam's acceptable RPD range.

Bold Acceptable RPD is exceeded.

NC Not Calculated.

All results in mg/L unless otherwise noted.

Table 11 - Summary of Groundwater Laboratory Analyses
QA/QC - Field Duplicate Samples

Sample ID	MW105	MW195	RPD [1] (%)	MW111	MW191	RPD [1] (%)	RDL [2]	Acceptable Range [3] (%)
Sample Date	7-May-19			7-May-19				
Calculated Parameters								
Hardness	970	1000	3.0	N/A	N/A	NC	0.50	40
Nitrate	0.19	0.22	15	N/A	N/A	NC	0.044	40
Nitrate plus Nitrite (N)	N/A	N/A	NC	0.19	0.28	38	0.014	40
Nitrite	<0.033	<0.033	NC	N/A	N/A	NC	0.033	40
Calculated Total Dissolved Solids	1900	1900	0.00	N/A	N/A	NC	10	40
Misc. Inorganics								
Conductivity (µS/cm)	2500	2500	0.00	N/A	N/A	NC	2.0	40
pH	7.94	7.93	0.13	N/A	N/A	NC	N/A	40
Anions								
Alkalinity (PP as CaCO3)	<1.0	<1.0	NC	N/A	N/A	NC	1.0	40
Alkalinity (Total as CaCO3)	460	460	0.00	N/A	N/A	NC	1.0	40
Bicarbonate	570	560	1.8	N/A	N/A	NC	1.0	40
Carbonate	<1.0	<1.0	NC	N/A	N/A	NC	1.0	40
Hydroxide	<1.0	<1.0	NC	N/A	N/A	NC	1.0	40
Sulphate	980	1,000	2.0	N/A	N/A	NC	50	40
Chloride	8.5	9.3	9.0	N/A	N/A	NC	1.0	40
Nutrients								
Total Kjeldahl Nitrogen	N/A	N/A	NC	0.13	0.17	27	0.010	40
Nitrite (N)	N/A	N/A	NC	<0.010	0.011	NC	0.010	40
Nitrate (N)	N/A	N/A	NC	0.19	0.27	35	0.010	40

Notes:

1 Relative percent difference = $((X_1-X_2) / ((X_1 + X_2) / 2)) \times 100$

2 Reportable detection limit as published in the laboratory report.

3 Acceptable range is 1.5 x Maxxam's acceptable RPD range.

N/A Not analyzed.

NC Not Calculated.

All results in mg/L unless otherwise noted.

Table 12 - Summary of Groundwater Laboratory Analyses
QA/QC - Trip Blank - VOCs

Sample ID	Trip Blank	RDL[1]
Sample Date	7-May-19	
1,1,1,2-tetrachloroethane	<0.0010	0.0010
1,1,1-trichloroethane	<0.00050	0.00050
1,1,2,2-tetrachloroethane	<0.0020	0.0020
1,1,2-trichloroethane	<0.00050	0.00050
1,1-dichloroethane	<0.00050	0.00050
1,1-dichloroethene	<0.00050	0.00050
1,2,3-trichlorobenzene	<0.0010	0.00020
1,2,4-trichlorobenzene	<0.0010	0.00050
1,2,4-trimethylbenzene	<0.00050	0.00050
1,2-dibromoethane	<0.00020	0.00020
1,2-dichlorobenzene	<0.00050	0.00050
1,2-dichloroethane	<0.00050	0.00050
1,2-dichloropropane	<0.00050	0.00050
1,3,5-trichlorobenzene	<0.00050	0.00050
1,3,5-trimethylbenzene	<0.00050	0.00050
1,3-dichlorobenzene	<0.00050	0.00050
1,4-dichlorobenzene	<0.00050	0.00050
Bromodichloromethane	<0.00050	0.00050
Bromoform	<0.00050	0.00050
Bromomethane	<0.0020	0.0020
Carbon tetrachloride	<0.00050	0.00050
Chlorobenzene	<0.00050	0.00050
Chlorodibromomethane	<0.0010	0.0010
Chloroethane	<0.0010	0.0010
Chloroform	<0.00050	0.00050
Chloromethane	<0.0020	0.0020
cis-1,2-dichloroethene	<0.00050	0.00050
cis-1,3-dichloropropene	<0.00050	0.00050
Dichloromethane	<0.0020	0.0020
Methyl methacrylate	<0.00050	0.00050
Methyl-tert-butylether (MTBE)	<0.00050	0.00050
Styrene	<0.00050	0.00050
Tetrachloroethene	<0.00050	0.00050
Total Trihalomethanes	<0.0013	0.0013
trans-1,2-dichloroethene	<0.00050	0.00050
trans-1,3-dichloropropene	<0.00050	0.00050
Trichloroethene	<0.00050	0.00050
Trichlorofluoromethane	<0.00050	0.00050
Vinyl chloride	<0.00050	0.00050

Notes:

1 Reportable detection limit as published in the laboratory report.
All results in mg/L unless otherwise noted.

Table 13 - Summary of Groundwater Laboratory Analyses
BTEX and PHC fractions F1-F2

Sample ID	MW101	MW102	MW103	MW104	MW105	MW106	MW107	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Benzene	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.005
Toluene	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.024
Ethylbenzene	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.0016
Xylenes (Total)	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	0.02
F1 minus BTEX (C6 - C10)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.2
F2 (C10 - C16)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	1.1

Sample ID	MW108	MW109	MW110	MW111	MW112	MW9	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Benzene	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.005
Toluene	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.024
Ethylbenzene	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.0016
Xylenes (Total)	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	0.02
F1 minus BTEX (C6 - C10)	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	2.2
F2 (C10 - C16)	<0.10	<0.10	N/A	<0.10	<0.10	<0.10	1.1

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

N/A Insufficient sample for parameter analysis.

All results are expressed as mg/L unless otherwise noted.

Table 14 - Summary of Groundwater Laboratory Analyses
Volatile Organic Compounds

Sample ID	MW101	MW102	MW102	MW103	MW104	MW105	MW106	MW107	Guideline[1]
Sample Date	7-May-19	7-May-19	17-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
1,1,1,2-tetrachloroethane	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
1,1,1-trichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,1,2,2-tetrachloroethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
1,1,2-trichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,1-dichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,1-dichloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.014
1,2,3-trichlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.008
1,2,4-trichlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.015
1,2,4-trimethylbenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,2-dibromoethane	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NG
1,2-dichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0007
1,2-dichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.005
1,2-dichloropropane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,3,5-trichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.014
1,3,5-trimethylbenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,3-dichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,4-dichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.001
Bromodichloromethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Bromoform	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Bromomethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
Carbon tetrachloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002
Chlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0013
Chlorodibromomethane	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.19
Chloroethane	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Chloroform	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.08
Chloromethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
cis-1,2-dichloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
cis-1,3-dichloropropene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Dichloromethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.05
Methyl methacrylate	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.47
Methyl-tert-butylether (MTBE)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.015
Styrene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.072
Tetrachloroethene	<0.00050	0.0012	0.0012	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.010
Total Trihalomethanes	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.1
trans-1,2-dichloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
trans-1,3-dichloropropene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Trichloroethene (TCE)	<0.00050	0.00054	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.005
Trichlorofluoromethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Vinyl chloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

NG No Specified Guideline Value

All results are expressed as mg/L unless otherwise noted.

Table 14 - Summary of Groundwater Laboratory Analyses
Volatile Organic Compounds

Sample ID	MW108	MW109	MW110	MW111	MW112	MW9	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
1,1,1,2-tetrachloroethane	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
1,1,1-trichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,1,2,2-tetrachloroethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
1,1,2-trichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,1-dichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,1-dichloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.014
1,2,3-trichlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.008
1,2,4-trichlorobenzene	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.015
1,2,4-trimethylbenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,2-dibromoethane	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NG
1,2-dichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0007
1,2-dichloroethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.005
1,2-dichloropropane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,3,5-trichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.014
1,3,5-trimethylbenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,3-dichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
1,4-dichlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.001
Bromodichloromethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Bromoform	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Bromomethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
Carbon tetrachloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002
Chlorobenzene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.0013
Chlorodibromomethane	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.19
Chloroethane	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Chloroform	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.08
Chloromethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	NG
cis-1,2-dichloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
cis-1,3-dichloropropene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Dichloromethane	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.05
Methyl methacrylate	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.47
Methyl-tert-butylether (MTBE)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.015
Styrene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.072
Tetrachloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.010
Total Trihalomethanes	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.1
trans-1,2-dichloroethene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
trans-1,3-dichloropropene	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Trichloroethene (TCE)	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.005
Trichlorofluoromethane	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	NG
Vinyl chloride	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.002

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

NG No Specified Guideline Value

All results are expressed as mg/L unless otherwise noted.

Table 15 - Summary of Groundwater Laboratory Analyses
Polycyclic Aromatic Hydrocarbons

Sample ID	MW108	MW109	MW111	MW112	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	
1-Methylnaphthalene	<0.00010	<0.00010	<0.00010	<0.00010	NG
2-Methylnaphthalene	<0.00010	<0.00010	<0.00010	<0.00010	NG
Acenaphthene	<0.00010	<0.00010	<0.00010	<0.00010	0.0060
Acenaphthylene	<0.00010	<0.00010	<0.00010	<0.00010	NG
Acridine	<0.000040	<0.000040	<0.000040	<0.000040	NG
Anthracene	<0.000010	<0.000010	<0.000010	<0.000010	0.0034
Benzo(a)anthracene	<0.0000085	<0.0000085	<0.0000085	<0.0000085	NG
Benzo(a)pyrene	<0.0000075	<0.0000075	<0.0000075	<0.0000075	0.0018
Benzo(b&j)fluoranthene	<0.0000085	<0.0000085	<0.0000085	<0.0000085	NG
Benzo(c)phenanthrene	<0.000050	<0.000050	<0.000050	<0.000050	NG
Benzo(g,h,i)perylene	<0.0000085	<0.0000085	<0.0000085	<0.0000085	NG
Benzo(k)fluoranthene	<0.0000085	<0.0000085	<0.0000085	<0.0000085	NG
Benzo[a]pyrene equivalency	<0.000010	<0.000010	<0.000010	<0.000010	0.00001
Benzo[e]pyrene	<0.000050	<0.000050	<0.000050	<0.000050	NG
Chrysene	<0.0000085	<0.0000085	<0.0000085	<0.0000085	NG
Dibenz(a,h)anthracene	<0.0000075	<0.0000075	<0.0000075	<0.0000075	NG
Fluoranthene	<0.000010	<0.000010	<0.000010	<0.000010	0.24
Fluorene	<0.000050	<0.000050	<0.000050	<0.000050	0.0042
Indeno(1,2,3-cd)pyrene	<0.0000085	<0.0000085	<0.0000085	<0.0000085	NG
Naphthalene	<0.00010	<0.00010	<0.00010	<0.00010	0.001
Perylene	<0.000050	<0.000050	<0.000050	<0.000050	NG
Phenanthrene	<0.000050	<0.000050	<0.000050	<0.000050	0.00086
Pyrene	<0.000020	<0.000020	<0.000020	<0.000020	0.71
Quinoline	<0.00020	<0.00020	<0.00020	<0.00020	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

NG No Specified Guideline Value

All results are expressed as mg/L unless otherwise noted.

Table 16 - Summary of Groundwater Laboratory Analyses
Routine Chemistry

Sample ID	MW101	MW102	MW103	MW104	MW105	MW107	MW9	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Calculated Parameters								
Hardness	940	690	830	690	970	920	800	NG
Nitrate	30	0.24	<0.044	<0.044	0.19	0.057	<0.044	NG
Nitrite	0.57	0.046	<0.033	<0.033	<0.033	<0.033	<0.033	NG
Calculated Total Dissolved Solids	**1700**	**1400**	**1700**	**1000**	**1900**	**1600**	**1400**	500
Misc. Inorganics								
Conductivity (µS/cm)	2900	2400	2900	1900	2500	2700	2300	NG
pH	7.66	7.66	7.66	7.55	7.94	7.67	7.58	6.5 - 8.5
Anions								
Alkalinity (PP as CaCO3)	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NG
Alkalinity (Total as CaCO3)	920	1100	1300	940	460	1300	930	NG
Bicarbonate	1100	1300	1600	1100	570	1600	1100	NG
Carbonate	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NG
Hydroxide	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	NG
Sulphate	220 [2]	150	240 [2]	16	**980** [2]	140	260 [2]	429
Chloride	**290** [2]	**140**	120	96	8.5	99	120	120

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

2 Detection limits raised due to dilution to bring analyte within the calibrated range.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Specified Guideline Value.

All results are expressed as mg/L unless otherwise noted.

Table 17 - Summary of Groundwater Laboratory Analyses
Nutrients

Sample ID	MW108	MW109	MW111	MW112	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	
Nitrate plus Nitrite (N)	43	0.81	0.19	0.046	NG
Total Kjeldahl Nitrogen (TKN)	1.6	0.71	0.13	0.55	NG
Nitrite (N)	**0.31**	0.044	<0.010	<0.010	0.20
Nitrate (N)	**43** [2]	0.77	0.19	0.046	3

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

2 Detection limits raised due to dilution to bring analyte within the calibrated range.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

N/A Insufficient sample for analysis

NG No Specified Guideline Value.

All results are expressed as mg/L unless otherwise noted.

Table 18 - Summary of Groundwater Laboratory Analyses
Dissolved Metals

Sample ID	MW101	MW102	MW103	MW104	MW105	MW107	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Aluminum	0.0035	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.050
Antimony	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	0.006
Arsenic	0.0013	0.00053	**0.0052**	0.0034	0.00074	0.0020	0.005
Barium	0.16	0.15	0.093	0.56	0.053	0.19	1
Beryllium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Boron	0.50	**1.7**	0.16	0.13	0.17	0.13	1.5
Calcium	230	150	120	87	230	150	NG
Chromium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.05
Cobalt	0.0066	0.0049	0.0077	0.0039	0.00088	0.0062	NG
Copper	0.0049	0.0047	0.00044	0.00035	0.00086	0.0040	0.007
Iron	0.15	0.13	**0.38**	0.20	0.14	0.25	0.3
Lead	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.007
Lithium	0.046	0.074	0.061	0.077	0.17	0.070	NG
Magnesium	89	78	130	120	97	130	NG
Manganese	**1.6**	**2.0**	**1.9**	**1.5**	**0.41**	**0.83**	0.05
Molybdenum	0.010	0.012	0.0055	0.0020	0.024	0.0032	NG
Nickel	0.026	0.013	0.018	0.0075	0.0041	0.016	0.170
Phosphorus	0.11	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Potassium	8.3	8.3	8.9	3.9	9.5	9.3	NG
Selenium	0.00077	0.00048	0.00057	0.00042	0.00078	0.00096	0.002
Silicon	8.4	5.2	6.5	6.2	6.7	8.3	NG
Silver	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001
Sodium	**270**	**270**	**330**	140	**260**	**230**	200
Strontium	1.2	1.1	1.1	1.2	1.4	1.3	NG
Sulphur	67	37	61	4.8	310	35	NG
Thallium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NG
Tin	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Titanium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Uranium	**0.017**	**0.028**	0.0058	0.0043	**0.034**	**0.056**	0.015
Vanadium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Zinc	<0.0030	0.0084	<0.0030	<0.0030	<0.0030	<0.0030	0.03

Notes:

1 AEP 2019 Tier 1 Guideline for industrial land use and fine-grained soil.

2 Detection limits raised due to dilution to bring analyte within the calibrated range.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Specified Guideline Value

All results are expressed as mg/L unless otherwise noted.

Table 18 - Summary of Groundwater Laboratory Analyses
Dissolved Metals

Sample ID	MW108	MW109	MW111	MW112	MW9	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Aluminum	0.0040	<0.0030	<0.0030	<0.0030	0.0035	0.050
Antimony	<0.00060	<0.00060	<0.00060	<0.00060	0.00069	0.006
Arsenic	0.00085	0.00022	0.00038	0.00037	**0.0056**	0.005
Barium	0.050	0.13	0.094	0.15	0.18	1
Beryllium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Boron	0.13	1.0	0.19	0.17	0.36	1.5
Calcium	76	85	83	75	110	NG
Chromium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.05
Cobalt	<0.00030	0.00033	<0.00030	0.00067	0.0077	NG
Copper	0.0011	0.00034	0.00030	0.00046	0.00072	0.007
Iron	0.060	0.099	0.091	0.10	**0.86**	0.3
Lead	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.007
Lithium	0.053	0.043	0.051	0.054	0.061	NG
Magnesium	41	66	64	78	130	NG
Manganese	**0.055**	**0.29**	**0.072**	**0.25**	**1.4**	0.05
Molybdenum	0.058	0.0069	0.0071	0.013	0.0063	NG
Nickel	0.0030	0.0028	0.0017	0.0023	0.015	0.170
Phosphorus	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Potassium	6.1	3.6	2.7	4.2	8.6	NG
Selenium	0.00095	<0.00020	0.00032	<0.00020	0.00069	0.002
Silicon	4.9	5.5	5.9	5.4	4.8	NG
Silver	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.0001
Sodium	**220**	78	39	43	190	200
Strontium	0.48	1.1	0.75	0.81	1.2	NG
Sulphur	58	25	28	23	72	NG
Thallium	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	NG
Tin	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Titanium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Uranium	**0.038**	0.010	**0.019**	**0.022**	**0.059**	0.015
Vanadium	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	NG
Zinc	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.03

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil.

2 Detection limits raised due to dilution to bring analyte within the calibrated range.

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Specified Guideline Value

All results are expressed as mg/L unless otherwise noted.

Table 19 - Summary of Groundwater Laboratory Analyses
Pesticides and Herbicides

Sample ID	MW108	MW109	MW111	MW112	MW191	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Alachlor	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Aldrin	<0.020	<0.020	<0.020	<0.020	<0.020	0.0007
Aspon	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Atrazine	<0.050	<0.050	<0.050	<0.050	<0.050	0.0018
Azinphos ethyl	<0.20	<0.20	<0.20	<0.20	<0.20	NG
Azinphos-methyl	<0.20	<0.20	<0.20	<0.20	<0.20	0.00001
Benfluralin	<0.050	<0.050	<0.050	<0.050	<0.050	NG
a-BHC	<0.050	<0.050	<0.050	<0.050	<0.050	NG
b-BHC	<0.050	<0.050	<0.050	<0.050	<0.050	NG
d-BHC	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Bromacil	<0.050	<0.050	<0.050	<0.050	<0.050	0.005
Bromophos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Bromophos-ethyl	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Butylate	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Captan	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Carbophenothion	<0.30	<0.30	<0.30	<0.30	<0.30	NG
Chlorbenside	<0.050	<0.050	<0.050	<0.050	<0.050	NG
a-Chlordane	<0.050	<0.050	<0.050	<0.050	<0.050	NG
g-Chlordane	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorfenson(ovex)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorfenvinphos(e/z)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlormephos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorothalonil (Daconil)	<0.050	<0.050	<0.050	<0.050	<0.050	0.00018
Chlorpropham	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorpyrifos	<0.010	<0.010	<0.010	<0.010	<0.010	0.0000046
Chlorpyriphos-methyl	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dacthal	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Chlorthiophos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Cyanazine (Bladex)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Cyanophos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
o,p'-DDD	<0.010	<0.010	<0.010	<0.010	<0.010	NG
o,p'-DDE	<0.010	<0.010	<0.010	<0.010	<0.010	NG
p,p'-DDE	<0.010	<0.010	<0.010	<0.010	<0.010	NG
o,p-DDT+p,p-DDD	<0.010	<0.010	<0.010	<0.010	<0.010	0.093
p,p'-DDT	<0.010	<0.010	<0.010	<0.010	<0.010	0.093
Desethyl-atrazine	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Demeton	<0.20	<0.20	<0.20	<0.20	<0.20	NG
Desmetryn	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Diallate(e/z)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Diazinon	<0.020	<0.020	<0.020	<0.020	<0.020	0.00017
Dichlobenil	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dichloran	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Dichlofenthion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dichlofluanid	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Dichlorvos + Naled	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Diclofop-methyl	<0.050	<0.050	<0.050	<0.050	<0.050	0.009
Dicofol	<0.20	<0.20	<0.20	<0.20	<0.20	NG
Dicrotophos	<0.20	<0.20	<0.20	<0.20	<0.20	NG
Dimethoate	<0.050	<0.050	<0.050	<0.050	<0.050	0.0062
Dioxathion	<0.50	<0.50	<0.50	<0.50	<0.50	NG
Diphenylamine	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Disulfoton (Di-Syston)	<0.50	<0.50	<0.50	<0.50	<0.50	NG
Endosulfan Sulfate	<0.050	<0.050	<0.050	<0.050	<0.050	0.0019
Endosulfan I	<0.050	<0.050	<0.050	<0.050	<0.050	0.0019
Dieldrin	**0.033**	<0.020	<0.020	<0.020	<0.020	0.0007
Endosulfan II	<0.050	<0.050	<0.050	<0.050	<0.050	0.0019
Endrin	<0.020	<0.020	<0.020	<0.020	<0.020	0.0028
Endrin Aldehyde	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Endrin ketone	<0.050	<0.050	<0.050	<0.050	<0.050	NG
EPN	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Eptam	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Ethalfluralin	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Ronnel	<0.050	<0.050	<0.050	<0.050	<0.050	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil (mg/L).

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Tier 1 guideline established.

All results are expressed as µg/l unless otherwise noted.

Table 19 - Summary of Groundwater Laboratory Analyses
Pesticides and Herbicides

Sample ID	MW108	MW109	MW111	MW112	MW191	Guideline[1]
Sample Date	7-May-19	7-May-19	7-May-19	7-May-19	7-May-19	
Fenitrothion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Fenthion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Fensulfothion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Folpet	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Fonofos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Heptachlor	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Heptachlor Epoxide	**0.08**	<0.050	<0.050	<0.050	<0.050	0.000052
Hexachlorobenzene	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Hexazinone	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Iodofenphos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Iprodione	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Isofenphos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Lindane (BHC), gamma-	<0.050	<0.050	<0.050	<0.050	<0.050	0.00001
Malaoxon	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Malathion	<0.050	<0.050	<0.050	<0.050	<0.050	0.0001
Metalaxyl	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Ethion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Methidathion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
4,4'-methoxychlor	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Metolachlor	<0.050	<0.050	<0.050	<0.050	<0.050	0.0078
Metribuzin (Sencor)	<0.10	<0.10	<0.10	<0.10	<0.10	0.001
Mevinphos (Phosdrin)	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Mirex	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Nitrofen	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Omethoate	<0.50	<0.50	<0.50	<0.50	<0.50	NG
Methyl parathion	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Parathion	<0.050	<0.050	<0.050	<0.050	<0.050	0.000013
Permethrin	<0.040	<0.040	<0.040	<0.040	<0.040	NG
Phorate (Thimet)	<0.050	<0.050	<0.050	<0.050	<0.050	0.002
Phosalone	<0.20	<0.20	<0.20	<0.20	<0.20	NG
Phosmet	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Phosphamidon	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Pirimicarb	<0.50	<0.50	<0.50	<0.50	<0.50	NG
Quinalophos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Pirimiphos-ethyl	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Pirimiphos-methyl	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Procymidone	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Profenophos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Profluralin	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Prometryn	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Pronamide	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Propazine	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Propiconazole	<0.50	<0.50	<0.50	<0.50	<0.50	NG
Pyrazophos	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Quintozene	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Simazine	<0.050	<0.050	<0.050	<0.050	<0.050	0.01
Stirophos	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Sulfotepp	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Tecnazene	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Terbufos	<0.050	<0.050	<0.050	<0.050	<0.050	0.001
Terbutryne	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Terbuthylazine	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Tetradifon	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Tolylfluanid	<0.050	<0.050	<0.050	<0.050	<0.050	NG
Triadimefon	<0.10	<0.10	<0.10	<0.10	<0.10	NG
Triallate	**0.094**	<0.050	<0.050	<0.050	<0.050	0.00024
Trifluralin	<0.050	<0.050	<0.050	<0.050	<0.050	0.0012
Vinclozolin	<0.050	<0.050	<0.050	<0.050	<0.050	NG

Notes:

1 AEP 2019 Tier 1 Guideline for Natural Areas/Residential-Parkland land use and fine-grained soil (mg/L).

Bold Indicates that the concentration did not meet the applicable guideline for fine-grained soil.

NG No Tier 1 guideline established.

All results are expressed as µg/l unless otherwise noted.

Table 20 - Summary of Soil Laboratory Analyses
Class II Landfill Analysis

Sample ID	Soil Bag	Guidelines[1]
Sample Date	18-Jan-18	
Soluble Parameters		
Soluble (1:1) pH	7.95	2.0 - 12.5
Physical Properties		
Closed Cup Flash Point (°C)	>61	>61
Free Liquid	PASS	PASS
Leachable Metals		
Antimony	<1.0	500.0
Arsenic	<0.50	5.0
Barium	<1.0	100.0
Beryllium	<0.50	5.0
Boron	<1.0	500.0
Cadmium	<0.10	1.0
Chromium	<0.50	5.0
Cobalt	<1.0	100.0
Copper	<1.0	100.0
Iron	1.9	1,000.0
Lead	<0.50	5.0
Mercury	<0.020	0.2
Nickel	<0.50	5.0
Selenium	<0.10	1.0
Silver	<0.50	5.0
Thallium	<0.50	5.0
Uranium	<0.20	2.0
Vanadium	<1.0	100.0
Zinc	<1.0	500.0
Zirconium	<1.0	500.0
Volatiles		
Leachable Benzene	<0.010	0.5
Leachable Toluene	<0.010	0.5
Leachable Ethylbenzene	<0.010	0.5
Leachable Xylenes (Total)	<0.020	0.5

Notes:

1 AEP Alberta User Guide for Waste Managers Part 4 Schedule to the Alberta User Guide for Waste Managers, March 1995.
Leachable tests performed by the toxicity characteristic leaching procedure.
All results in mg/L unless otherwise noted.

Appendix K
Laboratory Certificates of Analyses

Clifton

Maxxam
A Bureau Veritas Group Company

Your Project #: CG3198.1
Site Location: STRATHMORE
Your C.O.C. #: m085256, m021485

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/21
Report #: R2725286
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B930137
Received: 2019/04/25, 05:30

Sample Matrix: Soil
Samples Received: 26

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	24	N/A	2019/04/29	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	24	N/A	2019/04/30		Auto Calc
Cation/EC Ratio	3	N/A	2019/04/29		Auto Calc
Cation/EC Ratio	11	N/A	2019/05/01		Auto Calc
Chloride (Soluble)	3	2019/04/29	2019/04/29	AB SOP-00033 / AB SOP-00020	SM 23-4500-Cl-E m
Chloride (Soluble)	11	2019/04/30	2019/04/30	AB SOP-00033 / AB SOP-00020	SM 23-4500-Cl-E m
Hexavalent Chromium (2)	24	2019/04/28	2019/04/28	AB SOP-00063	SM 23 3500-Cr B m
Conductivity @25C (Soluble)	3	2019/04/29	2019/04/29	AB SOP-00033 / AB SOP-00004	SM 23 2510 B m
Conductivity @25C (Soluble)	11	2019/04/30	2019/05/01	AB SOP-00033 / AB SOP-00004	SM 23 2510 B m
CCME Hydrocarbons (F2-F4 in soil) (3)	20	2019/04/28	2019/04/29	AB SOP-00036	CCME PHC-CWS m
CCME Hydrocarbons (F2-F4 in soil) (3)	4	2019/04/29	2019/04/29	AB SOP-00036	CCME PHC-CWS m
Elements by ICPMS - Soils	20	2019/04/29	2019/04/29	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Elements by ICPMS - Soils	4	2019/04/29	2019/04/30	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (as Cations/Anions Ratio)	14	N/A	2019/04/29		Auto Calc
Sum of Cations, Anions	3	N/A	2019/04/29		Auto Calc
Sum of Cations, Anions	11	N/A	2019/05/01		Auto Calc
Potassium (Available)	11	2019/04/30	2019/04/30	CAL SOP-00153 / AB SOP-00042	EPA 6010d R5 m
Moisture	24	N/A	2019/04/29	AB SOP-00002	CCME PHC-CWS m
Benzo[a]pyrene Equivalency	10	N/A	2019/04/30		Auto Calc
PAH in Soil by GC/MS	10	2019/04/28	2019/04/29	AB SOP-00036 / AB SOP-00003	EPA 3540C/8270E m
Phosphorus (Available by ICP)	11	2019/04/30	2019/04/30	CAL SOP-00152 / AB SOP-00042	EPA 6010d R5 m
pH @25C (1:2 Calcium Chloride Extract)	14	2019/04/29	2019/04/29	AB SOP-00033 / AB SOP-00006	SM 23 4500 H+B m
Sodium Adsorption Ratio	3	N/A	2019/04/29		Auto Calc

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Maxxam
A Bureau Veritas Group Company

Your Project #: CG3198.1
Site Location: STRATHMORE
Your C.O.C. #: m085256, m021485

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/21
Report #: R2725286
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B930137
Received: 2019/04/25, 05:30

Sample Matrix: Soil
Samples Received: 26

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sodium Adsorption Ratio	11	N/A	2019/05/01		Auto Calc
Soluble Ions	4	2019/04/29	2019/04/29	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Ions	20	2019/04/30	2019/05/01	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Paste	4	2019/04/29	2019/04/29	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Paste	20	2019/04/30	2019/04/30	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Boron Calculation	4	N/A	2019/04/29		Auto Calc
Soluble Boron Calculation	20	N/A	2019/05/01		Auto Calc
Soluble Ions Calculation	14	N/A	2019/04/29		Auto Calc
Theoretical Gypsum Requirement (4)	3	N/A	2019/04/29		Auto Calc
Theoretical Gypsum Requirement (4)	11	N/A	2019/05/01		Auto Calc
VOCs in Soil by HS GC/MS (Std List) (1)	21	N/A	2019/04/29	AB SOP-00056	EPA 5021a/8260d m
VOCs in Soil by HS GC/MS (Std List) (1)	5	N/A	2019/04/30	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

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Your Project #: CG3198.1
Site Location: STRATHMORE
Your C.O.C. #: m085256, m021485

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/21
Report #: R2725286
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B930137
Received: 2019/04/25, 05:30

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Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
(2) Some soil samples may react with the Cr(VI) spike reducing it to Cr(III). These samples are highly unlikely to contain native hexavalent chromium. Thus a failed spike recovery does not invalidate a negative result on the native sample.
(3) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(4) TGR calculation is based on a theoretical SAR of 4. Salt Contamination and Assessment and remediation guideline 2001 recommended SAR is ranging 4-8. TGR is reported in tonnes/ha.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Linsay Sunderman, Key Account Specialist
Email: LSunderman@maxxam.ca
Phone# (403)735-2237 Ext:2237

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Maxxam ID		VO4869	VO4869	VO4870	VO4871	VO4872	VO4873		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m085256	m085256	m085256	m085256	m085256		
	UNITS	101-3	101-3 Lab-Dup	101-5	102-1	102-4	103-1	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	N/A	<10	13	<10	<10	10	9395990
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	N/A	<50	400	<50	<50	50	9395990
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	N/A	<50	120	<50	<50	50	9395990
Reached Baseline at C50	mg/kg	Yes	N/A	Yes	Yes	Yes	Yes	N/A	9395990
Volatiles									
Xylenes (Total)	mg/kg	<0.045	N/A	<0.045	<0.045	<0.045	<0.045	0.045	9392199
F1 (C6-C10) - BTEX	mg/kg	<10	N/A	<10	<10	<10	<10	10	9392199
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395485
Toluene	mg/kg	0.068	0.073	<0.050	<0.050	<0.050	<0.050	0.050	9395485
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395485
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395485
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395485
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	<10	<10	10	9395485
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	101	101	100	101	101	100	N/A	9395485
4-Bromofluorobenzene (sur.)	%	100	100	100	99	100	100	N/A	9395485
D10-o-Xylene (sur.)	%	96	102	100	93	95	110	N/A	9395485
D4-1,2-Dichloroethane (sur.)	%	97	98	97	96	95	98	N/A	9395485
O-TERPHENYL (sur.)	%	89	N/A	91	94	91	97	N/A	9395990

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Maxxam ID		VO4874	VO4875		VO4876	VO4877		VO4878		
Sampling Date		2019/04/17	2019/04/17		2019/04/17	2019/04/17		2019/04/17		
COC Number		m085256	m085256		m085256	m085256		m085256		
	UNITS	103-5	104-3	QC Batch	104-7	105-5	QC Batch	105-9	RDL	QC Batch
Ext. Pet. Hydrocarbon										
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	<10	9395990	<10	<10	9395653	<10	10	9395653
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	9395990	<50	<50	9395653	<50	50	9395653
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	9395990	<50	<50	9395653	<50	50	9395653
Reached Baseline at C50	mg/kg	Yes	Yes	9395990	Yes	Yes	9395653	Yes	N/A	9395653
Volatiles										
Xylenes (Total)	mg/kg	<0.045	<0.045	9392199	<0.045	<0.045	9392199	<0.045	0.045	9394851
F1 (C6-C10) - BTEX	mg/kg	<10	<10	9392199	<10	<10	9392199	<10	10	9394851
Field Preserved Volatiles										
Benzene	mg/kg	<0.0050	<0.0050	9395485	<0.0050	<0.0050	9395485	<0.0050	0.0050	9395485
Toluene	mg/kg	<0.050	<0.050	9395485	<0.050	<0.050	9395485	<0.050	0.050	9395485
Ethylbenzene	mg/kg	<0.010	<0.010	9395485	<0.010	<0.010	9395485	<0.010	0.010	9395485
m & p-Xylene	mg/kg	<0.040	<0.040	9395485	<0.040	<0.040	9395485	<0.040	0.040	9395485
o-Xylene	mg/kg	<0.020	<0.020	9395485	<0.020	<0.020	9395485	<0.020	0.020	9395485
F1 (C6-C10)	mg/kg	<10	<10	9395485	<10	<10	9395485	<10	10	9395485
Surrogate Recovery (%)										
1,4-Difluorobenzene (sur.)	%	101	101	9395485	101	101	9395485	101	N/A	9395485
4-Bromofluorobenzene (sur.)	%	100	100	9395485	100	101	9395485	100	N/A	9395485
D10-o-Xylene (sur.)	%	97	98	9395485	106	99	9395485	105	N/A	9395485
D4-1,2-Dichloroethane (sur.)	%	96	96	9395485	97	97	9395485	96	N/A	9395485
O-TERPHENYL (sur.)	%	95	92	9395990	115	127	9395653	128	N/A	9395653

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Maxxam ID		VO4886	VO4887	VO4888	VO4889	VO4891	VO4892		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485	m021485	m021485	m021485		
	UNITS	106-2	106-5	107-3	107-5	108-2	108-5	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	41	<10	<10	<10	<10	<10	10	9395653
F3 (C16-C34 Hydrocarbons)	mg/kg	370	<50	<50	<50	<50	<50	50	9395653
F4 (C34-C50 Hydrocarbons)	mg/kg	230	<50	<50	<50	<50	<50	50	9395653
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	Yes	Yes	N/A	9395653
Volatiles									
Xylenes (Total)	mg/kg	<0.045	<0.045	<0.045	<0.045	<0.045	<0.045	0.045	9394851
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	<10	<10	10	9394851
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395485
Toluene	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395485
Ethylbenzene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395485
m & p-Xylene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395485
o-Xylene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395485
F1 (C6-C10)	mg/kg	<10	<10	<10	<10	<10	<10	10	9395485
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	101	100	101	100	100	100	N/A	9395485
4-Bromofluorobenzene (sur.)	%	100	100	100	100	101	100	N/A	9395485
D10-o-Xylene (sur.)	%	102	107	117	101	105	89	N/A	9395485
D4-1,2-Dichloroethane (sur.)	%	97	96	97	97	97	96	N/A	9395485
O-TERPHENYL (sur.)	%	108	114	108	116	110	100	N/A	9395653

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Maxxam ID		VO4893	VO4894	VO4895	VO4896		VO4897		
Sampling Date		2019/04/22	2019/04/22	2019/04/22	2019/04/22		2019/04/22		
COC Number		m021485	m021485	m021485	m021485		m021485		
	UNITS	109-2	109-5	110-2	110-5	QC Batch	111-2	RDL	QC Batch
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	22	150	<10	9395653	<10	10	9395653
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	<50	370	<50	9395653	<50	50	9395653
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	<50	58	<50	9395653	<50	50	9395653
Reached Baseline at C50	mg/kg	Yes	Yes	Yes	Yes	9395653	Yes	N/A	9395653
Volatiles									
Xylenes (Total)	mg/kg	<0.045	<0.045	2.2	<0.045	9394851	<0.045	0.045	9394851
F1 (C6-C10) - BTEX	mg/kg	<10	<10	<10	<10	9394851	<10	10	9394851
Field Preserved Volatiles									
Benzene	mg/kg	<0.0050	<0.0050	0.44	<0.0050	9395485	<0.0050	0.0050	9395559
Toluene	mg/kg	<0.050	<0.050	0.88	<0.050	9395485	<0.050	0.050	9395559
Ethylbenzene	mg/kg	<0.010	<0.010	0.38	<0.010	9395485	<0.010	0.010	9395559
m & p-Xylene	mg/kg	<0.040	<0.040	1.7	<0.040	9395485	<0.040	0.040	9395559
o-Xylene	mg/kg	<0.020	<0.020	0.45	<0.020	9395485	<0.020	0.020	9395559
F1 (C6-C10)	mg/kg	<10	<10	13	<10	9395485	<10	10	9395559
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	101	100	101	101	9395485	92	N/A	9395559
4-Bromofluorobenzene (sur.)	%	100	100	100	100	9395485	107	N/A	9395559
D10-o-Xylene (sur.)	%	94	103	103	102	9395485	116	N/A	9395559
D4-1,2-Dichloroethane (sur.)	%	96	96	97	97	9395485	112	N/A	9395559
O-TERPHENYL (sur.)	%	109	117	122	123	9395653	127	N/A	9395653

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Maxxam ID		VO4897	VO4898	VO4898	VO4899	VO4900		
Sampling Date		2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485	m021485	m021485		
	UNITS	111-2 Lab-Dup	111-5	111-5 Lab-Dup	112-2	112-4	RDL	QC Batch
Ext. Pet. Hydrocarbon								
F2 (C10-C16 Hydrocarbons)	mg/kg	N/A	<10	<10	<10	<10	10	9395653
F3 (C16-C34 Hydrocarbons)	mg/kg	N/A	<50	<50	<50	<50	50	9395653
F4 (C34-C50 Hydrocarbons)	mg/kg	N/A	<50	<50	<50	<50	50	9395653
Reached Baseline at C50	mg/kg	N/A	Yes	Yes	Yes	Yes	N/A	9395653
Volatiles								
Xylenes (Total)	mg/kg	N/A	<0.045	N/A	0.053	<0.045	0.045	9394851
F1 (C6-C10) - BTEX	mg/kg	N/A	<10	N/A	<10	<10	10	9394851
Field Preserved Volatiles								
Benzene	mg/kg	<0.0050	<0.0050	N/A	0.037	<0.0050	0.0050	9395559
Toluene	mg/kg	<0.050	<0.050	N/A	0.080	<0.050	0.050	9395559
Ethylbenzene	mg/kg	<0.010	<0.010	N/A	<0.010	<0.010	0.010	9395559
m & p-Xylene	mg/kg	<0.040	<0.040	N/A	0.053	<0.040	0.040	9395559
o-Xylene	mg/kg	<0.020	<0.020	N/A	<0.020	<0.020	0.020	9395559
F1 (C6-C10)	mg/kg	<10	<10	N/A	<10	<10	10	9395559
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	96	96	N/A	97	95	N/A	9395559
4-Bromofluorobenzene (sur.)	%	108	106	N/A	109	109	N/A	9395559
D10-o-Xylene (sur.)	%	117	112	N/A	115	114	N/A	9395559
D4-1,2-Dichloroethane (sur.)	%	116	109	N/A	100	101	N/A	9395559
O-TERPHENYL (sur.)	%	N/A	112	129	119	120	N/A	9395653

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 REGULATED METALS - SOILS (SOIL)

Maxxam ID		VO4891			VO4892		VO4893		VO4894	VO4894		
Sampling Date		2019/04/22			2019/04/22		2019/04/22		2019/04/22	2019/04/22		
COC Number		m021485			m021485		m021485		m021485	m021485		
	UNITS	108-2	RDL	QC Batch	108-5	RDL	109-2	RDL	109-5	109-5 Lab-Dup	RDL	QC Batch
Calculated Parameters												
Calculated Boron (B)	mg/kg	0.10	0.032	9394895	0.049	0.043	0.68	0.035	<0.031	N/A	0.031	9394895
Elements												
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	9395691	<0.080	0.080	<0.080	0.080	<0.080	N/A	0.080	9395691
Soluble Parameters												
Soluble Boron (B)	mg/L	0.32	0.10	9396455	0.11	0.10	2.0	0.10	<0.10	N/A	0.10	9397716
Saturation %	%	32	N/A	9396017	43	N/A	35	N/A	30	N/A	N/A	9395731
Elements												
Total Antimony (Sb)	mg/kg	<0.50	0.50	9396749	<0.50	0.50	<0.50	0.50	<0.50	0.50	0.50	9396137
Total Arsenic (As)	mg/kg	5.1	1.0	9396749	6.1	1.0	5.5	1.0	8.4	11	1.0	9396137
Total Barium (Ba)	mg/kg	210	1.0	9396749	250	1.0	270	1.0	230	170	1.0	9396137
Total Beryllium (Be)	mg/kg	<0.40	0.40	9396749	0.55	0.40	0.40	0.40	0.47	0.48	0.40	9396137
Total Cadmium (Cd)	mg/kg	0.15	0.050	9396749	0.29	0.050	0.19	0.050	0.22	0.24	0.050	9396137
Total Chromium (Cr)	mg/kg	11	1.0	9396749	28	1.0	22	1.0	19	17	1.0	9396137
Total Cobalt (Co)	mg/kg	5.1	0.50	9396749	9.1	0.50	4.7	0.50	7.3	7.3	0.50	9396137
Total Copper (Cu)	mg/kg	7.8	1.0	9396749	17	1.0	9.2	1.0	14	14	1.0	9396137
Total Lead (Pb)	mg/kg	5.1	0.50	9396749	9.2	0.50	17	0.50	7.5	7.7	0.50	9396137
Total Mercury (Hg)	mg/kg	<0.050	0.050	9396749	0.061	0.050	0.068	0.050	0.065	0.067	0.050	9396137
Total Molybdenum (Mo)	mg/kg	0.44	0.40	9396749	1.2	0.40	0.86	0.40	1.6	0.90	0.40	9396137
Total Nickel (Ni)	mg/kg	15	1.0	9396749	30	1.0	19	1.0	23	21	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	0.50	9396749	<0.50	0.50	<0.50	0.50	<0.50	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	0.20	9396749	<0.20	0.20	<0.20	0.20	<0.20	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	0.11	0.10	9396749	0.19	0.10	0.10	0.10	0.19	0.19	0.10	9396137
Total Tin (Sn)	mg/kg	<1.0	1.0	9396749	<1.0	1.0	<1.0	1.0	<1.0	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	0.82	0.20	9396749	1.1	0.20	0.87	0.20	1.3	1.1	0.20	9396137
Total Vanadium (V)	mg/kg	17	1.0	9396749	25	1.0	17	1.0	24	24	1.0	9396137
Total Zinc (Zn)	mg/kg	29	10	9396749	58	10	50	10	46	46	10	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 REGULATED METALS - SOILS (SOIL)

Maxxam ID		VO4895		VO4896		VO4897	VO4897		VO4898		
Sampling Date		2019/04/22		2019/04/22		2019/04/22	2019/04/22		2019/04/22		
COC Number		m021485		m021485		m021485	m021485		m021485		
	UNITS	110-2	RDL	110-5	RDL	111-2	111-2 Lab-Dup	RDL	111-5	RDL	QC Batch
Calculated Parameters											
Calculated Boron (B)	mg/kg	0.19	0.037	<0.052	0.052	<0.029	N/A	0.029	<0.048	0.048	9394895
Elements											
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	<0.080	0.080	<0.080	<0.080	0.080	<0.080	0.080	9395691
Soluble Parameters											
Soluble Boron (B)	mg/L	0.50	0.10	<0.10	0.10	<0.10	N/A	0.10	<0.10	0.10	9397716
Saturation %	%	37	N/A	52	N/A	29	N/A	N/A	48	N/A	9395731
Elements											
Total Antimony (Sb)	mg/kg	<0.50	0.50	0.54	0.50	<0.50	N/A	0.50	0.53	0.50	9396137
Total Arsenic (As)	mg/kg	4.5	1.0	8.3	1.0	4.5	N/A	1.0	6.9	1.0	9396137
Total Barium (Ba)	mg/kg	140	1.0	300	1.0	130	N/A	1.0	240	1.0	9396137
Total Beryllium (Be)	mg/kg	<0.40	0.40	0.66	0.40	<0.40	N/A	0.40	0.64	0.40	9396137
Total Cadmium (Cd)	mg/kg	0.21	0.050	0.25	0.050	0.089	N/A	0.050	0.31	0.050	9396137
Total Chromium (Cr)	mg/kg	14	1.0	26	1.0	9.1	N/A	1.0	30	1.0	9396137
Total Cobalt (Co)	mg/kg	4.1	0.50	8.8	0.50	4.2	N/A	0.50	9.4	0.50	9396137
Total Copper (Cu)	mg/kg	13	1.0	19	1.0	6.7	N/A	1.0	20	1.0	9396137
Total Lead (Pb)	mg/kg	12	0.50	10	0.50	4.2	N/A	0.50	10	0.50	9396137
Total Mercury (Hg)	mg/kg	0.16	0.050	0.066	0.050	<0.050	N/A	0.050	0.061	0.050	9396137
Total Molybdenum (Mo)	mg/kg	0.59	0.40	1.4	0.40	<0.40	N/A	0.40	1.5	0.40	9396137
Total Nickel (Ni)	mg/kg	14	1.0	27	1.0	13	N/A	1.0	32	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	0.50	<0.50	0.50	<0.50	N/A	0.50	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	0.20	<0.20	0.20	<0.20	N/A	0.20	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	0.11	0.10	0.20	0.10	<0.10	N/A	0.10	0.21	0.10	9396137
Total Tin (Sn)	mg/kg	1.1	1.0	<1.0	1.0	<1.0	N/A	1.0	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	0.88	0.20	1.1	0.20	0.47	N/A	0.20	1.2	0.20	9396137
Total Vanadium (V)	mg/kg	15	1.0	30	1.0	13	N/A	1.0	31	1.0	9396137
Total Zinc (Zn)	mg/kg	36	10	62	10	24	N/A	10	61	10	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 REGULATED METALS - SOILS (SOIL)

Maxxam ID		VO4899		VO4900		
Sampling Date		2019/04/22		2019/04/22		
COC Number		m021485		m021485		
	UNITS	112-2	RDL	112-4	RDL	QC Batch
Calculated Parameters						
Calculated Boron (B)	mg/kg	0.042	0.034	<0.045	0.045	9394895
Elements						
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	<0.080	0.080	9395691
Soluble Parameters						
Soluble Boron (B)	mg/L	0.12	0.10	<0.10	0.10	9397716
Saturation %	%	34	N/A	45	N/A	9395731
Elements						
Total Antimony (Sb)	mg/kg	<0.50	0.50	<0.50	0.50	9396137
Total Arsenic (As)	mg/kg	4.8	1.0	6.7	1.0	9396137
Total Barium (Ba)	mg/kg	150	1.0	280	1.0	9396137
Total Beryllium (Be)	mg/kg	<0.40	0.40	0.62	0.40	9396137
Total Cadmium (Cd)	mg/kg	0.14	0.050	0.25	0.050	9396137
Total Chromium (Cr)	mg/kg	10	1.0	26	1.0	9396137
Total Cobalt (Co)	mg/kg	3.6	0.50	9.2	0.50	9396137
Total Copper (Cu)	mg/kg	9.4	1.0	20	1.0	9396137
Total Lead (Pb)	mg/kg	7.2	0.50	10	0.50	9396137
Total Mercury (Hg)	mg/kg	0.057	0.050	0.064	0.050	9396137
Total Molybdenum (Mo)	mg/kg	0.51	0.40	1.3	0.40	9396137
Total Nickel (Ni)	mg/kg	12	1.0	27	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	0.50	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	0.20	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	0.15	0.10	0.22	0.10	9396137
Total Tin (Sn)	mg/kg	<1.0	1.0	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	0.53	0.20	1.1	0.20	9396137
Total Vanadium (V)	mg/kg	14	1.0	32	1.0	9396137
Total Zinc (Zn)	mg/kg	34	10	63	10	9396137

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4869	VO4869		VO4870		VO4871		VO4872		
Sampling Date		2019/04/17	2019/04/17		2019/04/17		2019/04/17		2019/04/17		
COC Number		m085256	m085256		m085256		m085256		m085256		
	UNITS	101-3	101-3 Lab-Dup	RDL	101-5	RDL	102-1	RDL	102-4	RDL	QC Batch
Calculated Parameters											
Anion Sum	meq/L	24	N/A	N/A	11	N/A	6.8	N/A	6.5	N/A	9394878
Cation Sum	meq/L	31	N/A	N/A	12	N/A	9.7	N/A	8.6	N/A	9394878
Cation/EC Ratio	N/A	11	N/A	0.10	10	0.10	9.3	0.10	9.9	0.10	9394858
Ion Balance	N/A	1.3	N/A	0.010	1.1	0.010	1.4	0.010	1.3	0.010	9394873
Calculated Calcium (Ca)	mg/kg	50	N/A	0.91	25	0.44	11	0.61	8.1	0.43	9394903
Calculated Magnesium (Mg)	mg/kg	22	N/A	0.61	7.0	0.30	5.8	0.40	2.5	0.29	9394903
Calculated Sodium (Na)	mg/kg	330	N/A	1.5	40	0.74	59	1.0	41	0.72	9394903
Calculated Potassium (K)	mg/kg	19	N/A	0.79	1.6	0.39	11	0.53	2.4	0.37	9394903
Calculated Boron (B)	mg/kg	0.90	N/A	0.061	0.061	0.030	0.18	0.040	0.13	0.029	9394895
Calculated Chloride (Cl)	mg/kg	230	N/A	6.1	66	1.5	71	2.0	42	1.4	9394903
Calculated Sulphate (SO4)	mg/kg	390	N/A	3.0	68	1.5	36	2.0	32	1.4	9394903
Elements											
Hex. Chromium (Cr 6+)	mg/kg	<0.080	<0.080	0.080	<0.080	0.080	<0.080	0.080	<0.080	0.080	9395699
Soluble Parameters											
Soluble Boron (B)	mg/L	1.5	N/A	0.10	0.21	0.10	0.46	0.10	0.47	0.10	9397716
Soluble Chloride (Cl)	mg/L	380 (1)	N/A	10	220	5.0	170	5.0	150	5.0	9397703
Soluble Conductivity	dS/m	2.9	N/A	0.020	1.2	0.020	1.0	0.020	0.86	0.020	9399041
Soluble (CaCl2) pH	pH	7.86	N/A	N/A	7.90	N/A	7.36	N/A	7.95	N/A	9395729
Sodium Adsorption Ratio	N/A	13	N/A	0.10	3.3	0.10	5.6	0.10	6.0	0.10	9394888
Soluble Calcium (Ca)	mg/L	82	N/A	1.5	85	1.5	28	1.5	28	1.5	9397716
Soluble Magnesium (Mg)	mg/L	36	N/A	1.0	24	1.0	14	1.0	8.6	1.0	9397716
Soluble Sodium (Na)	mg/L	540	N/A	2.5	140	2.5	150	2.5	140	2.5	9397716
Soluble Potassium (K)	mg/L	31	N/A	1.3	5.4	1.3	28	1.3	8.4	1.3	9397716
Saturation %	%	61	N/A	N/A	30	N/A	40	N/A	29	N/A	9395731
Soluble Sulphate (SO4)	mg/L	640	N/A	5.0	230	5.0	90	5.0	110	5.0	9397716
Theoretical Gypsum Requirement	tonnes/ha	6.3	N/A	0.20	<0.20	0.20	<0.20	0.20	<0.20	0.20	9394910
Elements											
Total Antimony (Sb)	mg/kg	<0.50	N/A	0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	9396137
Total Arsenic (As)	mg/kg	2.6	N/A	1.0	<1.0	1.0	4.8	1.0	2.7	1.0	9396137
Total Barium (Ba)	mg/kg	90	N/A	1.0	<1.0	1.0	160	1.0	66	1.0	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4869	VO4869		VO4870		VO4871		VO4872		
Sampling Date		2019/04/17	2019/04/17		2019/04/17		2019/04/17		2019/04/17		
COC Number		m085256	m085256		m085256		m085256		m085256		
	UNITS	101-3	101-3 Lab-Dup	RDL	101-5	RDL	102-1	RDL	102-4	RDL	QC Batch
Total Beryllium (Be)	mg/kg	<0.40	N/A	0.40	<0.40	0.40	<0.40	0.40	<0.40	0.40	9396137
Total Cadmium (Cd)	mg/kg	0.21	N/A	0.050	<0.050	0.050	0.22	0.050	0.099	0.050	9396137
Total Chromium (Cr)	mg/kg	5.5	N/A	1.0	<1.0	1.0	30	1.0	6.0	1.0	9396137
Total Cobalt (Co)	mg/kg	2.4	N/A	0.50	<0.50	0.50	5.7	0.50	2.5	0.50	9396137
Total Copper (Cu)	mg/kg	6.4	N/A	1.0	<1.0	1.0	9.2	1.0	4.5	1.0	9396137
Total Lead (Pb)	mg/kg	5.5	N/A	0.50	<0.50	0.50	10	0.50	3.0	0.50	9396137
Total Mercury (Hg)	mg/kg	<0.050	N/A	0.050	<0.050	0.050	<0.050	0.050	<0.050	0.050	9396137
Total Molybdenum (Mo)	mg/kg	<0.40	N/A	0.40	<0.40	0.40	0.85	0.40	<0.40	0.40	9396137
Total Nickel (Ni)	mg/kg	5.8	N/A	1.0	<1.0	1.0	21	1.0	7.8	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	N/A	0.50	<0.50	0.50	<0.50	0.50	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	N/A	0.20	<0.20	0.20	<0.20	0.20	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	<0.10	N/A	0.10	<0.10	0.10	0.10	0.10	<0.10	0.10	9396137
Total Tin (Sn)	mg/kg	<1.0	N/A	1.0	<1.0	1.0	<1.0	1.0	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	0.48	N/A	0.20	<0.20	0.20	0.59	0.20	0.27	0.20	9396137
Total Vanadium (V)	mg/kg	9.1	N/A	1.0	<1.0	1.0	21	1.0	9.8	1.0	9396137
Total Zinc (Zn)	mg/kg	36	N/A	10	<10	10	47	10	21	10	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4873		VO4874			VO4875		
Sampling Date		2019/04/17		2019/04/17			2019/04/17		
COC Number		m085256		m085256			m085256		
	UNITS	103-1	RDL	103-5	RDL	QC Batch	104-3	RDL	QC Batch
Calculated Parameters									
Anion Sum	meq/L	5.1	N/A	6.1	N/A	9394878	3.4	N/A	9394878
Cation Sum	meq/L	6.7	N/A	8.1	N/A	9394878	6.5	N/A	9394878
Cation/EC Ratio	N/A	9.2	0.10	9.8	0.10	9394858	11	0.10	9394858
Ion Balance	N/A	1.3	0.010	1.3	0.010	9394873	1.9	0.010	9394873
Calculated Calcium (Ca)	mg/kg	5.0	0.58	4.4	0.42	9394903	6.1	0.55	9394903
Calculated Magnesium (Mg)	mg/kg	2.8	0.39	2.6	0.28	9394903	3.0	0.37	9394903
Calculated Sodium (Na)	mg/kg	43	0.96	41	0.71	9394903	39	0.92	9394903
Calculated Potassium (K)	mg/kg	9.0	0.50	3.1	0.37	9394903	5.2	0.48	9394903
Calculated Boron (B)	mg/kg	0.070	0.039	0.030	0.028	9394895	0.071	0.037	9394895
Calculated Chloride (Cl)	mg/kg	27	1.9	46	1.4	9394903	18	1.8	9394903
Calculated Sulphate (SO4)	mg/kg	58	1.9	20	1.4	9394903	36	1.8	9394903
Elements									
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	<0.080	0.080	9395699	<0.080	0.080	9395699
Soluble Parameters									
Soluble Boron (B)	mg/L	0.18	0.10	0.11	0.10	9397716	0.19	0.10	9396455
Soluble Chloride (Cl)	mg/L	71	5.0	160	5.0	9397703	50	5.0	9396473
Soluble Conductivity	dS/m	0.72	0.020	0.83	0.020	9399041	0.61	0.020	9396708
Soluble (CaCl2) pH	pH	7.95	N/A	8.17	N/A	9395729	7.65	N/A	9395729
Sodium Adsorption Ratio	N/A	6.2	0.10	7.2	0.10	9394888	5.4	0.10	9394888
Soluble Calcium (Ca)	mg/L	13	1.5	15	1.5	9397716	17	1.5	9396455
Soluble Magnesium (Mg)	mg/L	7.2	1.0	9.2	1.0	9397716	8.0	1.0	9396455
Soluble Sodium (Na)	mg/L	110	2.5	150	2.5	9397716	110	2.5	9396455
Soluble Potassium (K)	mg/L	23	1.3	11	1.3	9397716	14	1.3	9396455
Saturation %	%	39	N/A	28	N/A	9395731	37	N/A	9396017
Soluble Sulphate (SO4)	mg/L	150	5.0	72	5.0	9397716	97	5.0	9396455
Theoretical Gypsum Requirement	tonnes/ha	<0.20	0.20	<0.20	0.20	9394910	<0.20	0.20	9394910
Elements									
Total Antimony (Sb)	mg/kg	<0.50	0.50	<0.50	0.50	9396137	<0.50	0.50	9396749
Total Arsenic (As)	mg/kg	6.2	1.0	2.7	1.0	9396137	4.0	1.0	9396749
Total Barium (Ba)	mg/kg	420	1.0	52	1.0	9396137	160	1.0	9396749
Total Beryllium (Be)	mg/kg	0.55	0.40	<0.40	0.40	9396137	<0.40	0.40	9396749
Total Cadmium (Cd)	mg/kg	0.25	0.050	0.096	0.050	9396137	0.17	0.050	9396749

RDL = Reportable Detection Limit
N/A = Not Applicable

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CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4873		VO4874			VO4875		
Sampling Date		2019/04/17		2019/04/17			2019/04/17		
COC Number		m085256		m085256			m085256		
	UNITS	103-1	RDL	103-5	RDL	QC Batch	104-3	RDL	QC Batch
Total Chromium (Cr)	mg/kg	28	1.0	7.0	1.0	9396137	21	1.0	9396749
Total Cobalt (Co)	mg/kg	9.3	0.50	2.0	0.50	9396137	7.0	0.50	9396749
Total Copper (Cu)	mg/kg	12	1.0	3.6	1.0	9396137	8.0	1.0	9396749
Total Lead (Pb)	mg/kg	8.5	0.50	2.9	0.50	9396137	5.5	0.50	9396749
Total Mercury (Hg)	mg/kg	0.056	0.050	<0.050	0.050	9396137	<0.050	0.050	9396749
Total Molybdenum (Mo)	mg/kg	0.71	0.40	<0.40	0.40	9396137	0.67	0.40	9396749
Total Nickel (Ni)	mg/kg	31	1.0	8.0	1.0	9396137	19	1.0	9396749
Total Selenium (Se)	mg/kg	<0.50	0.50	<0.50	0.50	9396137	<0.50	0.50	9396749
Total Silver (Ag)	mg/kg	<0.20	0.20	<0.20	0.20	9396137	<0.20	0.20	9396749
Total Thallium (Tl)	mg/kg	0.29	0.10	<0.10	0.10	9396137	<0.10	0.10	9396749
Total Tin (Sn)	mg/kg	1.4	1.0	<1.0	1.0	9396137	<1.0	1.0	9396749
Total Uranium (U)	mg/kg	0.93	0.20	0.30	0.20	9396137	0.60	0.20	9396749
Total Vanadium (V)	mg/kg	33	1.0	11	1.0	9396137	27	1.0	9396749
Total Zinc (Zn)	mg/kg	57	10	20	10	9396137	46	10	9396749

RDL = Reportable Detection Limit

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4876			VO4877	VO4877		VO4878		
Sampling Date		2019/04/17			2019/04/17	2019/04/17		2019/04/17		
COC Number		m085256			m085256	m085256		m085256		
	UNITS	104-7	RDL	QC Batch	105-5	105-5 Lab-Dup	RDL	105-9	RDL	QC Batch
Calculated Parameters										
Anion Sum	meq/L	2.7	N/A	9394878	3.5	N/A	N/A	12	N/A	9394878
Cation Sum	meq/L	4.6	N/A	9394878	4.5	N/A	N/A	14	N/A	9394878
Cation/EC Ratio	N/A	10	0.10	9394858	9.3	N/A	0.10	11	0.10	9394858
Ion Balance	N/A	1.7	0.010	9394873	1.3	N/A	0.010	1.1	0.010	9394873
Calculated Calcium (Ca)	mg/kg	3.1	0.81	9394903	6.5	N/A	0.48	31	0.62	9394903
Calculated Magnesium (Mg)	mg/kg	2.9	0.54	9394903	5.3	N/A	0.32	14	0.41	9394903
Calculated Sodium (Na)	mg/kg	47	1.4	9394903	15	N/A	0.80	67	1.0	9394903
Calculated Potassium (K)	mg/kg	1.6	0.70	9394903	0.69	N/A	0.41	2.4	0.53	9394903
Calculated Boron (B)	mg/kg	<0.054	0.054	9394895	<0.032	N/A	0.032	<0.041	0.041	9394895
Calculated Chloride (Cl)	mg/kg	15	2.7	9394903	23	N/A	1.6	2.2	2.1	9394903
Calculated Sulphate (SO4)	mg/kg	51	2.7	9394903	23	N/A	1.6	240	2.1	9394903
Elements										
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	9395699	<0.080	N/A	0.080	<0.080	0.080	9395691
Soluble Parameters										
Soluble Boron (B)	mg/L	<0.10	0.10	9397716	<0.10	<0.10	0.10	<0.10	0.10	9397716
Soluble Chloride (Cl)	mg/L	27	5.0	9397703	72	75	5.0	5.3	5.0	9397703
Soluble Conductivity	dS/m	0.46	0.020	9399041	0.48	0.48	0.020	1.3	0.020	9399041
Soluble (CaCl2) pH	pH	7.78	N/A	9395729	7.80	7.78	N/A	7.70	N/A	9395729
Sodium Adsorption Ratio	N/A	6.2	0.10	9394888	1.9	N/A	0.10	3.9	0.10	9394888
Soluble Calcium (Ca)	mg/L	5.7	1.5	9397716	20	22	1.5	75	1.5	9397716
Soluble Magnesium (Mg)	mg/L	5.4	1.0	9397716	17	18	1.0	34	1.0	9397716
Soluble Sodium (Na)	mg/L	86	2.5	9397716	47	52	2.5	160	2.5	9397716
Soluble Potassium (K)	mg/L	2.9	1.3	9397716	2.2	2.2	1.3	5.8	1.3	9397716
Saturation %	%	54	N/A	9395731	32	31	N/A	41	N/A	9395731
Soluble Sulphate (SO4)	mg/L	94	5.0	9397716	71	69	5.0	590	5.0	9397716
Theoretical Gypsum Requirement	tonnes/ha	<0.20	0.20	9394910	<0.20	N/A	0.20	<0.20	0.20	9394910
Elements										
Total Antimony (Sb)	mg/kg	0.52	0.50	9396137	<0.50	N/A	0.50	<0.50	0.50	9396137
Total Arsenic (As)	mg/kg	7.0	1.0	9396137	6.4	N/A	1.0	5.9	1.0	9396137
Total Barium (Ba)	mg/kg	300	1.0	9396137	120	N/A	1.0	690	1.0	9396137
Total Beryllium (Be)	mg/kg	0.63	0.40	9396137	<0.40	N/A	0.40	0.60	0.40	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4876			VO4877	VO4877		VO4878		
Sampling Date		2019/04/17			2019/04/17	2019/04/17		2019/04/17		
COC Number		m085256			m085256	m085256		m085256		
	UNITS	104-7	RDL	QC Batch	105-5	105-5 Lab-Dup	RDL	105-9	RDL	QC Batch
Total Cadmium (Cd)	mg/kg	0.23	0.050	9396137	0.11	N/A	0.050	0.27	0.050	9396137
Total Chromium (Cr)	mg/kg	36	1.0	9396137	25	N/A	1.0	51	1.0	9396137
Total Cobalt (Co)	mg/kg	11	0.50	9396137	8.1	N/A	0.50	12	0.50	9396137
Total Copper (Cu)	mg/kg	22	1.0	9396137	8.4	N/A	1.0	21	1.0	9396137
Total Lead (Pb)	mg/kg	10	0.50	9396137	4.5	N/A	0.50	7.5	0.50	9396137
Total Mercury (Hg)	mg/kg	0.059	0.050	9396137	<0.050	N/A	0.050	<0.050	0.050	9396137
Total Molybdenum (Mo)	mg/kg	1.3	0.40	9396137	0.76	N/A	0.40	3.1	0.40	9396137
Total Nickel (Ni)	mg/kg	35	1.0	9396137	26	N/A	1.0	37	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	0.50	9396137	<0.50	N/A	0.50	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	0.20	9396137	<0.20	N/A	0.20	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	0.21	0.10	9396137	0.12	N/A	0.10	0.13	0.10	9396137
Total Tin (Sn)	mg/kg	<1.0	1.0	9396137	<1.0	N/A	1.0	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	1.3	0.20	9396137	0.86	N/A	0.20	0.91	0.20	9396137
Total Vanadium (V)	mg/kg	36	1.0	9396137	32	N/A	1.0	50	1.0	9396137
Total Zinc (Zn)	mg/kg	61	10	9396137	43	N/A	10	75	10	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4886	VO4886		VO4887			VO4888		
Sampling Date		2019/04/17	2019/04/17		2019/04/17			2019/04/17		
COC Number		m021485	m021485		m021485			m021485		
	UNITS	106-2	106-2 Lab-Dup	RDL	106-5	RDL	QC Batch	107-3	RDL	QC Batch
Calculated Parameters										
Anion Sum	meq/L	10	N/A	N/A	2.3	N/A	9394878	17	N/A	9394878
Cation Sum	meq/L	11	N/A	N/A	3.4	N/A	9394878	20	N/A	9394878
Cation/EC Ratio	N/A	8.9	N/A	0.10	11	0.10	9394858	11	0.10	9394858
Ion Balance	N/A	1.0	N/A	0.010	1.5	0.010	9394873	1.2	0.010	9394873
Calculated Calcium (Ca)	mg/kg	14	N/A	0.56	5.0	0.81	9394903	26	0.45	9394903
Calculated Magnesium (Mg)	mg/kg	10	N/A	0.37	4.3	0.54	9394903	12	0.30	9394903
Calculated Sodium (Na)	mg/kg	51	N/A	0.93	28	1.4	9394903	83	0.76	9394903
Calculated Potassium (K)	mg/kg	6.9	N/A	0.48	1.6	0.71	9394903	9.4	0.39	9394903
Calculated Boron (B)	mg/kg	0.31	N/A	0.037	0.087	0.054	9394895	0.078	0.030	9394895
Calculated Chloride (Cl)	mg/kg	110	N/A	1.9	21	2.7	9394903	26	1.5	9394903
Calculated Sulphate (SO4)	mg/kg	40	N/A	1.9	32	2.7	9394903	210	1.5	9394903
Elements										
Hex. Chromium (Cr 6+)	mg/kg	<0.080	N/A	0.080	<0.080	0.080	9395691	<0.080	0.080	9395691
Soluble Parameters										
Soluble Boron (B)	mg/L	0.83	0.77	0.10	0.16	0.10	9396455	0.26	0.10	9397716
Soluble Chloride (Cl)	mg/L	290	270	5.0	39	5.0	9396473	86	5.0	9397703
Soluble Conductivity	dS/m	1.2	1.2	0.020	0.32	0.020	9396708	1.8	0.020	9399041
Soluble (CaCl2) pH	pH	7.82	N/A	N/A	7.87	N/A	9395729	7.46	N/A	9395729
Sodium Adsorption Ratio	N/A	4.2	N/A	0.10	3.0	0.10	9394888	6.1	0.10	9394888
Soluble Calcium (Ca)	mg/L	38	38	1.5	9.3	1.5	9396455	87	1.5	9397716
Soluble Magnesium (Mg)	mg/L	27	27	1.0	8.0	1.0	9396455	39	1.0	9397716
Soluble Sodium (Na)	mg/L	140	140	2.5	51	2.5	9396455	270	2.5	9397716
Soluble Potassium (K)	mg/L	19	19	1.3	3.0	1.3	9396455	31	1.3	9397716
Saturation %	%	37	36	N/A	54	N/A	9396017	30	N/A	9395731
Soluble Sulphate (SO4)	mg/L	110	100	5.0	58	5.0	9396455	690	5.0	9397716
Theoretical Gypsum Requirement	tonnes/ha	<0.20	N/A	0.20	<0.20	0.20	9394910	0.52	0.20	9394910
Elements										
Total Antimony (Sb)	mg/kg	<0.50	<0.50	0.50	<0.50	0.50	9396749	<0.50	0.50	9396137
Total Arsenic (As)	mg/kg	5.3	4.7	1.0	6.3	1.0	9396749	3.8	1.0	9396137
Total Barium (Ba)	mg/kg	210	180	1.0	230	1.0	9396749	64	1.0	9396137
Total Beryllium (Be)	mg/kg	<0.40	<0.40	0.40	0.67	0.40	9396749	<0.40	0.40	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4886	VO4886		VO4887			VO4888		
Sampling Date		2019/04/17	2019/04/17		2019/04/17			2019/04/17		
COC Number		m021485	m021485		m021485			m021485		
	UNITS	106-2	106-2 Lab-Dup	RDL	106-5	RDL	QC Batch	107-3	RDL	QC Batch
Total Cadmium (Cd)	mg/kg	0.20	0.18	0.050	0.21	0.050	9396749	0.13	0.050	9396137
Total Chromium (Cr)	mg/kg	18	15	1.0	37	1.0	9396749	21	1.0	9396137
Total Cobalt (Co)	mg/kg	5.8	5.3	0.50	9.6	0.50	9396749	3.2	0.50	9396137
Total Copper (Cu)	mg/kg	12	10	1.0	21	1.0	9396749	9.0	1.0	9396137
Total Lead (Pb)	mg/kg	14	12	0.50	9.3	0.50	9396749	3.8	0.50	9396137
Total Mercury (Hg)	mg/kg	0.055	<0.050	0.050	0.061	0.050	9396749	<0.050	0.050	9396137
Total Molybdenum (Mo)	mg/kg	0.75	0.66	0.40	1.5	0.40	9396749	2.6	0.40	9396137
Total Nickel (Ni)	mg/kg	19	16	1.0	33	1.0	9396749	10	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	<0.50	0.50	<0.50	0.50	9396749	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	<0.20	0.20	<0.20	0.20	9396749	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	0.15	0.14	0.10	0.20	0.10	9396749	<0.10	0.10	9396137
Total Tin (Sn)	mg/kg	1.0	<1.0	1.0	<1.0	1.0	9396749	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	0.87	0.74	0.20	1.0	0.20	9396749	0.59	0.20	9396137
Total Vanadium (V)	mg/kg	22	19	1.0	34	1.0	9396749	12	1.0	9396137
Total Zinc (Zn)	mg/kg	44	39	10	55	10	9396749	54	10	9396137

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B930137
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CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4889		
Sampling Date		2019/04/17		
COC Number		m021485		
	UNITS	107-5	RDL	QC Batch
Calculated Parameters				
Anion Sum	meq/L	11	N/A	9394878
Cation Sum	meq/L	10	N/A	9394878
Cation/EC Ratio	N/A	9.6	0.10	9394858
Ion Balance	N/A	0.89	0.010	9394873
Calculated Calcium (Ca)	mg/kg	11	0.47	9394903
Calculated Magnesium (Mg)	mg/kg	8.9	0.32	9394903
Calculated Sodium (Na)	mg/kg	41	0.79	9394903
Calculated Potassium (K)	mg/kg	4.4	0.41	9394903
Calculated Boron (B)	mg/kg	<0.032	0.032	9394895
Calculated Chloride (Cl)	mg/kg	37	1.6	9394903
Calculated Sulphate (SO4)	mg/kg	120	1.6	9394903
Elements				
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	9395691
Soluble Parameters				
Soluble Boron (B)	mg/L	<0.10	0.10	9397716
Soluble Chloride (Cl)	mg/L	120	5.0	9397703
Soluble Conductivity	dS/m	1.1	0.020	9399041
Soluble (CaCl2) pH	pH	8.10	N/A	9395729
Sodium Adsorption Ratio	N/A	4.0	0.10	9394888
Soluble Calcium (Ca)	mg/L	35	1.5	9397716
Soluble Magnesium (Mg)	mg/L	28	1.0	9397716
Soluble Sodium (Na)	mg/L	130	2.5	9397716
Soluble Potassium (K)	mg/L	14	1.3	9397716
Saturation %	%	32	N/A	9395731
Soluble Sulphate (SO4)	mg/L	390	5.0	9397716
Theoretical Gypsum Requirement	tonnes/ha	<0.20	0.20	9394910
Elements				
Total Antimony (Sb)	mg/kg	<0.50	0.50	9396137
Total Arsenic (As)	mg/kg	2.9	1.0	9396137
Total Barium (Ba)	mg/kg	88	1.0	9396137
Total Beryllium (Be)	mg/kg	<0.40	0.40	9396137
Total Cadmium (Cd)	mg/kg	0.099	0.050	9396137

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

AT1 METALS & SALINITY IN SOIL (SOIL)

Maxxam ID		VO4889		
Sampling Date		2019/04/17		
COC Number		m021485		
	UNITS	107-5	RDL	QC Batch
Total Chromium (Cr)	mg/kg	10	1.0	9396137
Total Cobalt (Co)	mg/kg	3.0	0.50	9396137
Total Copper (Cu)	mg/kg	3.9	1.0	9396137
Total Lead (Pb)	mg/kg	4.3	0.50	9396137
Total Mercury (Hg)	mg/kg	<0.050	0.050	9396137
Total Molybdenum (Mo)	mg/kg	<0.40	0.40	9396137
Total Nickel (Ni)	mg/kg	7.9	1.0	9396137
Total Selenium (Se)	mg/kg	<0.50	0.50	9396137
Total Silver (Ag)	mg/kg	<0.20	0.20	9396137
Total Thallium (Tl)	mg/kg	<0.10	0.10	9396137
Total Tin (Sn)	mg/kg	<1.0	1.0	9396137
Total Uranium (U)	mg/kg	0.47	0.20	9396137
Total Vanadium (V)	mg/kg	13	1.0	9396137
Total Zinc (Zn)	mg/kg	31	10	9396137
RDL = Reportable Detection Limit				

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NPK (AVAILABLE)

Maxxam ID		VO4874	VO4891	VO4892	VO4893	VO4894	VO4894	VO4895		
Sampling Date		2019/04/17	2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22		
COC Number		m085256	m021485	m021485	m021485	m021485	m021485	m021485		
	UNITS	103-5	108-2	108-5	109-2	109-5	109-5 Lab-Dup	110-2	RDL	QC Batch
Nutrients										
Available (NH4F) Phosphorus (P)	mg/kg	<1.0	<1.0	<1.0	3.8	<1.0	<1.0	2.0	1.0	9397635
Available (NH4OAc) Potassium (K)	mg/kg	120	75	100	100	95	94	170	2.0	9397706

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

Maxxam ID		VO4896	VO4897	VO4898	VO4899	VO4900		
Sampling Date		2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485	m021485	m021485		
	UNITS	110-5	111-2	111-5	112-2	112-4	RDL	QC Batch
Nutrients								
Available (NH4F) Phosphorus (P)	mg/kg	<1.0	<1.0	<1.0	10	<1.0	1.0	9397635
Available (NH4OAc) Potassium (K)	mg/kg	170	61	150	180	140	2.0	9397706

RDL = Reportable Detection Limit

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PHYSICAL TESTING (SOIL)

Maxxam ID		VO4869	VO4870	VO4871	VO4872	VO4873	VO4874	VO4875		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m085256	m085256	m085256	m085256	m085256	m085256		
	UNITS	101-3	101-5	102-1	102-4	103-1	103-5	104-3	RDL	QC Batch
Physical Properties										
Moisture	%	19	20	13	22	14	16	14	0.30	9395657
RDL = Reportable Detection Limit										

Maxxam ID		VO4876	VO4877		VO4878		VO4886	VO4887		
Sampling Date		2019/04/17	2019/04/17		2019/04/17		2019/04/17	2019/04/17		
COC Number		m085256	m085256		m085256		m021485	m021485		
	UNITS	104-7	105-5	QC Batch	105-9	QC Batch	106-2	106-5	RDL	QC Batch
Physical Properties										
Moisture	%	16	18	9395657	16	9395702	12	17	0.30	9395657
RDL = Reportable Detection Limit										

Maxxam ID		VO4888		VO4889	VO4889	VO4891	VO4892	VO4893		
Sampling Date		2019/04/17		2019/04/17	2019/04/17	2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485		m021485	m021485	m021485	m021485	m021485		
	UNITS	107-3	QC Batch	107-5	107-5 Lab-Dup	108-2	108-5	109-2	RDL	QC Batch
Physical Properties										
Moisture	%	9.3	9395702	17	17	13	12	14	0.30	9395657
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate										

Maxxam ID		VO4894	VO4895		VO4896	VO4897	VO4897		
Sampling Date		2019/04/22	2019/04/22		2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485		m021485	m021485	m021485		
	UNITS	109-5	110-2	QC Batch	110-5	111-2	111-2 Lab-Dup	RDL	QC Batch
Physical Properties									
Moisture	%	11	12	9395657	15	15	15	0.30	9395702
RDL = Reportable Detection Limit Lab-Dup = Laboratory Initiated Duplicate									

Maxxam ID		VO4898	VO4899	VO4900		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485		
	UNITS	111-5	112-2	112-4	RDL	QC Batch
Physical Properties						
Moisture	%	16	12	15	0.30	9395657
RDL = Reportable Detection Limit						

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4891	VO4892	VO4893	VO4894	VO4895	VO4896		
Sampling Date		2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485	m021485	m021485	m021485		
	UNITS	108-2	108-5	109-2	109-5	110-2	110-5	RDL	QC Batch
Polycyclic Aromatics									
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.027	<0.0050	0.0050	9395654
B[a]P TPE Total Potency Equivalents	mg/kg	<0.0071	<0.0071	<0.0071	<0.0071	0.21	<0.0071	0.0071	9392778
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.013	<0.0050	0.0050	9395654
Acridine	mg/kg	<0.010	<0.010	<0.010	<0.010	0.059	<0.010	0.010	9395654
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	0.057	<0.0040	0.0040	9395654
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	0.0057	<0.0050	0.15	<0.0050	0.0050	9395654
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	0.0076	<0.0050	0.19	<0.0050	0.0050	9395654
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.064	<0.0050	0.0050	9395654
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.084	<0.0050	0.0050	9395654
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.021 (1)	<0.0050	0.0050	9395654
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.13	<0.0050	0.0050	9395654
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.11	<0.0050	0.0050	9395654
Chrysene	mg/kg	<0.0050	<0.0050	0.0058	<0.0050	0.14	<0.0050	0.0050	9395654
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.025	<0.0050	0.0050	9395654
Fluoranthene	mg/kg	<0.0050	<0.0050	0.019	<0.0050	0.30	<0.0050	0.0050	9395654
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.046	<0.0050	0.0050	9395654
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.091	<0.0050	0.0050	9395654
1-Methylnaphthalene	mg/kg	<0.0050	<0.0050	0.013	<0.0050	0.17	<0.0050	0.0050	9395654
2-Methylnaphthalene	mg/kg	<0.0050	<0.0050	0.017	<0.0050	0.37	<0.0050	0.0050	9395654
Naphthalene	mg/kg	<0.0050	<0.0050	0.017	<0.0050	0.26	<0.0050	0.0050	9395654
Phenanthrene	mg/kg	<0.0050	<0.0050	0.019	<0.0050	0.26	<0.0050	0.0050	9395654
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	0.037	<0.0050	0.0050	9395654
Pyrene	mg/kg	<0.0050	<0.0050	0.013	<0.0050	0.25	<0.0050	0.0050	9395654
Quinoline	mg/kg	<0.010	<0.010	<0.010	<0.010	0.014	<0.010	0.010	9395654
Surrogate Recovery (%)									
D10-ANTHRACENE (sur.)	%	97	90	66	95	94	93	N/A	9395654
D8-ACENAPHTHYLENE (sur.)	%	93	86	78	91	93	89	N/A	9395654
D8-NAPHTHALENE (sur.)	%	90	83	79	87	87	84	N/A	9395654
TERPHENYL-D14 (sur.)	%	101	91	79	97	93	93	N/A	9395654

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Qualifying ion outside of acceptance criteria. Results are tentatively identified and potentially biased high.

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

SEMIVOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4897	VO4898	VO4898	VO4899	VO4900		
Sampling Date		2019/04/22	2019/04/22	2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485	m021485	m021485		
	UNITS	111-2	111-5	111-5 Lab-Dup	112-2	112-4	RDL	QC Batch
Polycyclic Aromatics								
Acenaphthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
B[a]P TPE Total Potency Equivalents	mg/kg	<0.0071	<0.0071	N/A	0.010	<0.0071	0.0071	9392778
Acenaphthylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Acridine	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395654
Anthracene	mg/kg	<0.0040	<0.0040	<0.0040	<0.0040	<0.0040	0.0040	9395654
Benzo(a)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	0.0065	<0.0050	0.0050	9395654
Benzo(b&j)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.011	<0.0050	0.0050	9395654
Benzo(k)fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Benzo(g,h,i)perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Benzo(c)phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Benzo(a)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0052	<0.0050	0.0050	9395654
Benzo[e]pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0075	<0.0050	0.0050	9395654
Chrysene	mg/kg	<0.0050	<0.0050	<0.0050	0.0083	<0.0050	0.0050	9395654
Dibenz(a,h)anthracene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Fluoranthene	mg/kg	<0.0050	<0.0050	<0.0050	0.011	<0.0050	0.0050	9395654
Fluorene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Indeno(1,2,3-cd)pyrene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
1-Methylnaphthalene	mg/kg	<0.0050	<0.0050	<0.0050	0.023	<0.0050	0.0050	9395654
2-Methylnaphthalene	mg/kg	<0.0050	<0.0050	<0.0050	0.032	<0.0050	0.0050	9395654
Naphthalene	mg/kg	<0.0050	<0.0050	<0.0050	0.014	<0.0050	0.0050	9395654
Phenanthrene	mg/kg	<0.0050	<0.0050	<0.0050	0.022	<0.0050	0.0050	9395654
Perylene	mg/kg	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	0.0050	9395654
Pyrene	mg/kg	<0.0050	<0.0050	<0.0050	0.0099	<0.0050	0.0050	9395654
Quinoline	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395654
Surrogate Recovery (%)								
D10-ANTHRACENE (sur.)	%	96	90	94	87	95	N/A	9395654
D8-ACENAPHTHYLENE (sur.)	%	93	87	90	83	91	N/A	9395654
D8-NAPHTHALENE (sur.)	%	89	83	88	81	88	N/A	9395654
TERPHENYL-D14 (sur.)	%	99	94	98	88	97	N/A	9395654

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4869	VO4869	VO4870	VO4871	VO4872		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m085256	m085256	m085256	m085256		
	UNITS	101-3	101-3 Lab-Dup	101-5	102-1	102-4	RDL	QC Batch
Field Preserved Volatiles								
Bromodichloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
Bromoform	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
Bromomethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9395496
Chlorobenzene	mg/kg	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9395496
Chlorodibromomethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Chloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Chloroform	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395496
Chloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1-dichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,1-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Dichloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
1,2-dichloropropane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Methyl methacrylate	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
Styrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
1,1,2,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
Tetrachloroethene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395496
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4869	VO4869	VO4870	VO4871	VO4872		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m085256	m085256	m085256	m085256		
	UNITS	101-3	101-3 Lab-Dup	101-5	102-1	102-4	RDL	QC Batch
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Trichloroethene	mg/kg	0.16	0.18	0.22	<0.010	<0.010	0.010	9395496
Trichlorofluoromethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9395496
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9395496
Vinyl chloride	mg/kg	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00030	9395496
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	100	99	99	100	100	N/A	9395496
4-Bromofluorobenzene (sur.)	%	97	97	94	98	97	N/A	9395496
D10-o-Xylene (sur.)	%	111	122	113	108	112	N/A	9395496
D4-1,2-Dichloroethane (sur.)	%	102	103	105	102	102	N/A	9395496

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4873	VO4874	VO4875	VO4876	VO4877		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m085256	m085256	m085256	m085256		
	UNITS	103-1	103-5	104-3	104-7	105-5	RDL	QC Batch
Field Preserved Volatiles								
Bromodichloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
Bromoform	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
Bromomethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9395496
Chlorobenzene	mg/kg	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9395496
Chlorodibromomethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Chloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Chloroform	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395496
Chloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1-dichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,1-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Dichloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
1,2-dichloropropane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Methyl methacrylate	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
Styrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
1,1,2,2-tetrachloroethane	mg/kg	0.093	<0.050	<0.050	<0.050	<0.050	0.050	9395496
Tetrachloroethene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395496
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496

RDL = Reportable Detection Limit

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4873	VO4874	VO4875	VO4876	VO4877		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m085256	m085256	m085256	m085256		
	UNITS	103-1	103-5	104-3	104-7	105-5	RDL	QC Batch
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Trichloroethene	mg/kg	0.24	0.19	0.032	<0.010	<0.010	0.010	9395496
Trichlorofluoromethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9395496
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9395496
Vinyl chloride	mg/kg	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00030	9395496
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	100	100	99	101	N/A	9395496
4-Bromofluorobenzene (sur.)	%	97	98	96	97	97	N/A	9395496
D10-o-Xylene (sur.)	%	114	108	104	106	100	N/A	9395496
D4-1,2-Dichloroethane (sur.)	%	104	103	103	107	103	N/A	9395496

RDL = Reportable Detection Limit
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4878	VO4886	VO4887	VO4888	VO4889		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m021485	m021485	m021485	m021485		
	UNITS	105-9	106-2	106-5	107-3	107-5	RDL	QC Batch
Field Preserved Volatiles								
Bromodichloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
Bromoform	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
Bromomethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9395496
Chlorobenzene	mg/kg	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9395496
Chlorodibromomethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Chloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Chloroform	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395496
Chloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1-dichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,1-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Dichloromethane	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
1,2-dichloropropane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Methyl methacrylate	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	<0.030	<0.030	<0.030	0.030	9395496
Styrene	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
1,1,2,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9395496
Tetrachloroethene	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9395496
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9395496

RDL = Reportable Detection Limit

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4878	VO4886	VO4887	VO4888	VO4889		
Sampling Date		2019/04/17	2019/04/17	2019/04/17	2019/04/17	2019/04/17		
COC Number		m085256	m021485	m021485	m021485	m021485		
	UNITS	105-9	106-2	106-5	107-3	107-5	RDL	QC Batch
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
Trichloroethene	mg/kg	<0.010	0.033	0.16	0.31	0.082	0.010	9395496
Trichlorofluoromethane	mg/kg	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9395496
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9395496
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9395496
Vinyl chloride	mg/kg	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	0.00030	9395496
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	99	100	99	99	N/A	9395496
4-Bromofluorobenzene (sur.)	%	95	101	106	99	96	N/A	9395496
D10-o-Xylene (sur.)	%	104	104	111	121	108	N/A	9395496
D4-1,2-Dichloroethane (sur.)	%	109	104	103	100	100	N/A	9395496

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4890	VO4890		VO4891	VO4892	VO4893		
Sampling Date		2019/04/17	2019/04/17		2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485		m021485	m021485	m021485		
	UNITS	TRIP BLANK 1	TRIP BLANK 1 Lab-Dup	QC Batch	108-2	108-5	109-2	RDL	QC Batch
Field Preserved Volatiles									
Bromodichloromethane	mg/kg	<0.030	<0.030	9395532	<0.030	<0.030	<0.030	0.030	9395496
Bromoform	mg/kg	<0.050	<0.050	9395532	<0.050	<0.050	<0.050	0.050	9395496
Bromomethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	9395532	<0.00050	<0.00050	<0.00050	0.00050	9395496
Chlorobenzene	mg/kg	<0.0010	<0.0010	9395532	<0.0010	<0.0010	<0.0010	0.0010	9395496
Chlorodibromomethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
Chloroethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
Chloroform	mg/kg	<0.010	<0.010	9395532	<0.010	<0.010	<0.010	0.010	9395496
Chloromethane	mg/kg	<0.030	<0.030	9395532	<0.030	<0.030	<0.030	0.030	9395496
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	9395532	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,1-dichloroethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	9395532	<0.0020	<0.0020	<0.0020	0.0020	9395496
1,1-dichloroethene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
Dichloromethane	mg/kg	<0.030	<0.030	9395532	<0.030	<0.030	<0.030	0.030	9395496
1,2-dichloropropane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
Methyl methacrylate	mg/kg	<0.040	<0.040	9395532	<0.040	<0.040	<0.040	0.040	9395496
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	9395532	<0.030	<0.030	<0.030	0.030	9395496
Styrene	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	9395532	<0.050	<0.050	<0.050	0.050	9395496
1,1,2,2-tetrachloroethane	mg/kg	<0.050	<0.050	9395532	<0.050	<0.050	<0.050	0.050	9395496
Tetrachloroethene	mg/kg	<0.010	<0.010	9395532	<0.010	<0.010	<0.010	0.010	9395496
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	9395532	<0.040	<0.040	<0.040	0.040	9395496
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	9395532	<0.040	<0.040	<0.040	0.040	9395496
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	9395532	<0.040	<0.040	<0.040	0.040	9395496

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4890	VO4890		VO4891	VO4892	VO4893		
Sampling Date		2019/04/17	2019/04/17		2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485		m021485	m021485	m021485		
	UNITS	TRIP BLANK 1	TRIP BLANK 1 Lab-Dup	QC Batch	108-2	108-5	109-2	RDL	QC Batch
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
Trichloroethene	mg/kg	0.019	0.020	9395532	<0.010	<0.010	<0.010	0.010	9395496
Trichlorofluoromethane	mg/kg	<0.020	<0.020	9395532	<0.020	<0.020	<0.020	0.020	9395496
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	9395532	<0.50	<0.50	<0.50	0.50	9395496
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	9395532	<0.50	<0.50	<0.50	0.50	9395496
Vinyl chloride	mg/kg	<0.00030	<0.00030	9395532	<0.00030	<0.00030	<0.00030	0.00030	9395496
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	99	100	9395532	100	99	99	N/A	9395496
4-Bromofluorobenzene (sur.)	%	95	94	9395532	97	98	101	N/A	9395496
D10-o-Xylene (sur.)	%	51	53	9395532	108	109	102	N/A	9395496
D4-1,2-Dichloroethane (sur.)	%	105	100	9395532	105	99	102	N/A	9395496

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4894	VO4895	VO4896		VO4897	VO4898		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485		m021485	m021485		
	UNITS	109-5	110-2	110-5	QC Batch	111-2	111-5	RDL	QC Batch
Field Preserved Volatiles									
Bromodichloromethane	mg/kg	<0.030	<0.030	<0.030	9395496	<0.030	<0.030	0.030	9395532
Bromoform	mg/kg	<0.050	<0.050	<0.050	9395496	<0.050	<0.050	0.050	9395532
Bromomethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	<0.00050	9395496	<0.00050	<0.00050	0.00050	9395532
Chlorobenzene	mg/kg	<0.0010	<0.0010	<0.0010	9395496	<0.0010	<0.0010	0.0010	9395532
Chlorodibromomethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
Chloroethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
Chloroform	mg/kg	<0.010	<0.010	<0.010	9395496	<0.010	<0.010	0.010	9395532
Chloromethane	mg/kg	<0.030	<0.030	<0.030	9395496	<0.030	<0.030	0.030	9395532
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	<0.0020	9395496	<0.0020	<0.0020	0.0020	9395532
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,1-dichloroethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,2-dichloroethane	mg/kg	<0.0020	0.011	<0.0020	9395496	<0.0020	<0.0020	0.0020	9395532
1,1-dichloroethene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
Dichloromethane	mg/kg	<0.030	<0.030	<0.030	9395496	<0.030	<0.030	0.030	9395532
1,2-dichloropropane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
Methyl methacrylate	mg/kg	<0.040	<0.040	<0.040	9395496	<0.040	<0.040	0.040	9395532
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	<0.030	9395496	<0.030	<0.030	0.030	9395532
Styrene	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	9395496	<0.050	<0.050	0.050	9395532
1,1,2,2-tetrachloroethane	mg/kg	<0.050	0.10	<0.050	9395496	<0.050	<0.050	0.050	9395532
Tetrachloroethene	mg/kg	<0.010	<0.010	<0.010	9395496	<0.010	<0.010	0.010	9395532
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	9395496	<0.040	<0.040	0.040	9395532
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	9395496	<0.040	<0.040	0.040	9395532
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	9395496	<0.040	<0.040	0.040	9395532

RDL = Reportable Detection Limit

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4894	VO4895	VO4896		VO4897	VO4898		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485		m021485	m021485		
	UNITS	109-5	110-2	110-5	QC Batch	111-2	111-5	RDL	QC Batch
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
Trichloroethene	mg/kg	<0.010	<0.010	<0.010	9395496	0.016	<0.010	0.010	9395532
Trichlorofluoromethane	mg/kg	<0.020	<0.020	<0.020	9395496	<0.020	<0.020	0.020	9395532
1,2,4-trimethylbenzene	mg/kg	<0.50	0.73	<0.50	9395496	<0.50	<0.50	0.50	9395532
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	9395496	<0.50	<0.50	0.50	9395532
Vinyl chloride	mg/kg	<0.00030	<0.00030	<0.00030	9395496	<0.00030	<0.00030	0.00030	9395532
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	99	100	99	9395496	99	99	N/A	9395532
4-Bromofluorobenzene (sur.)	%	100	99	96	9395496	99	97	N/A	9395532
D10-o-Xylene (sur.)	%	108	103	108	9395496	107	107	N/A	9395532
D4-1,2-Dichloroethane (sur.)	%	102	103	101	9395496	101	104	N/A	9395532

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4899	VO4900	VO4901		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485		
	UNITS	112-2	112-4	TRIP BLANK 2	RDL	QC Batch
Field Preserved Volatiles						
Bromodichloromethane	mg/kg	<0.030	<0.030	<0.030	0.030	9395532
Bromoform	mg/kg	<0.050	<0.050	<0.050	0.050	9395532
Bromomethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	<0.00050	0.00050	9395532
Chlorobenzene	mg/kg	<0.0010	<0.0010	<0.0010	0.0010	9395532
Chlorodibromomethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
Chloroethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
Chloroform	mg/kg	<0.010	<0.010	<0.010	0.010	9395532
Chloromethane	mg/kg	<0.030	<0.030	<0.030	0.030	9395532
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	<0.0020	0.0020	9395532
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,1-dichloroethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	<0.0020	0.0020	9395532
1,1-dichloroethene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
Dichloromethane	mg/kg	<0.030	<0.030	<0.030	0.030	9395532
1,2-dichloropropane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
Methyl methacrylate	mg/kg	<0.040	<0.040	<0.040	0.040	9395532
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	<0.030	0.030	9395532
Styrene	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	0.050	9395532
1,1,2,2-tetrachloroethane	mg/kg	<0.050	<0.050	<0.050	0.050	9395532
Tetrachloroethene	mg/kg	<0.010	<0.010	<0.010	0.010	9395532
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	0.040	9395532
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	0.040	9395532
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	<0.040	0.040	9395532
RDL = Reportable Detection Limit						

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VO4899	VO4900	VO4901		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		m021485	m021485	m021485		
	UNITS	112-2	112-4	TRIP BLANK 2	RDL	QC Batch
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
Trichloroethene	mg/kg	<0.010	0.015	0.019	0.010	9395532
Trichlorofluoromethane	mg/kg	<0.020	<0.020	<0.020	0.020	9395532
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	0.50	9395532
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	<0.50	0.50	9395532
Vinyl chloride	mg/kg	<0.00030	<0.00030	<0.00030	0.00030	9395532
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	98	100	100	N/A	9395532
4-Bromofluorobenzene (sur.)	%	99	97	96	N/A	9395532
D10-o-Xylene (sur.)	%	109	112	107	N/A	9395532
D4-1,2-Dichloroethane (sur.)	%	104	101	102	N/A	9395532

RDL = Reportable Detection Limit
N/A = Not Applicable

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CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.0°C
Package 2	2.3°C

Results relate only to the items tested.

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9395485	SAW	Matrix Spike [VO4869-03]	1,4-Difluorobenzene (sur.)	2019/04/29		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		98	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		100	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		98	%	50 - 140
			Benzene	2019/04/29		100	%	50 - 140
			Toluene	2019/04/29		96	%	50 - 140
			Ethylbenzene	2019/04/29		100	%	50 - 140
			m & p-Xylene	2019/04/29		98	%	50 - 140
			o-Xylene	2019/04/29		96	%	50 - 140
			F1 (C6-C10)	2019/04/29		84	%	60 - 140
9395485	SAW	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/04/29		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		99	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		97	%	50 - 140
			Benzene	2019/04/29		102	%	60 - 130
			Toluene	2019/04/29		99	%	60 - 130
			Ethylbenzene	2019/04/29		104	%	60 - 130
			m & p-Xylene	2019/04/29		102	%	60 - 130
			o-Xylene	2019/04/29		101	%	60 - 130
			F1 (C6-C10)	2019/04/29		89	%	60 - 140
9395485	SAW	Method Blank	1,4-Difluorobenzene (sur.)	2019/04/29		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		100	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		81	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		97	%	50 - 140
			Benzene	2019/04/29	<0.0050		mg/kg	
			Toluene	2019/04/29	<0.050		mg/kg	
			Ethylbenzene	2019/04/29	<0.010		mg/kg	
			m & p-Xylene	2019/04/29	<0.040		mg/kg	
			o-Xylene	2019/04/29	<0.020		mg/kg	
			F1 (C6-C10)	2019/04/29	<10		mg/kg	
9395485	SAW	RPD [VO4869-03]	Benzene	2019/04/29	NC		%	50
			Toluene	2019/04/29	7.1		%	50
			Ethylbenzene	2019/04/29	NC		%	50
			m & p-Xylene	2019/04/29	NC		%	50
			o-Xylene	2019/04/29	NC		%	50
			F1 (C6-C10)	2019/04/29	NC		%	30
9395496	MZ	Matrix Spike [VO4869-03]	1,4-Difluorobenzene (sur.)	2019/04/29		106	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		101	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		111	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		105	%	50 - 140
			Bromodichloromethane	2019/04/29		100	%	50 - 140
			Bromoform	2019/04/29		97	%	50 - 140
			Bromomethane	2019/04/29		65	%	50 - 140
			Carbon tetrachloride	2019/04/29		94	%	50 - 140
			Chlorobenzene	2019/04/29		84	%	50 - 140
			Chlorodibromomethane	2019/04/29		96	%	50 - 140
			Chloroethane	2019/04/29		70	%	50 - 140
			Chloroform	2019/04/29		89	%	50 - 140
			Chloromethane	2019/04/29		57	%	50 - 140
			1,2-dibromoethane	2019/04/29		92	%	50 - 140
			1,2-dichlorobenzene	2019/04/29		83	%	50 - 140
			1,3-dichlorobenzene	2019/04/29		85	%	50 - 140
			1,4-dichlorobenzene	2019/04/29		85	%	50 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,1-dichloroethane	2019/04/29		90	%	50 - 140
			1,2-dichloroethane	2019/04/29		95	%	50 - 140
			1,1-dichloroethene	2019/04/29		82	%	50 - 140
			cis-1,2-dichloroethene	2019/04/29		93	%	50 - 140
			trans-1,2-dichloroethene	2019/04/29		85	%	50 - 140
			Dichloromethane	2019/04/29		88	%	50 - 140
			1,2-dichloropropane	2019/04/29		97	%	50 - 140
			cis-1,3-dichloropropene	2019/04/29		83	%	50 - 140
			trans-1,3-dichloropropene	2019/04/29		80	%	50 - 140
			Methyl methacrylate	2019/04/29		95	%	50 - 140
			Methyl-tert-butylether (MTBE)	2019/04/29		89	%	50 - 140
			Styrene	2019/04/29		85	%	50 - 140
			1,1,1,2-tetrachloroethane	2019/04/29		85	%	50 - 140
			1,1,2,2-tetrachloroethane	2019/04/29		90	%	50 - 140
			Tetrachloroethene	2019/04/29		87	%	50 - 140
			1,2,3-trichlorobenzene	2019/04/29		89	%	50 - 140
			1,2,4-trichlorobenzene	2019/04/29		86	%	50 - 140
			1,3,5-trichlorobenzene	2019/04/29		82	%	50 - 140
			1,1,1-trichloroethane	2019/04/29		92	%	50 - 140
			1,1,2-trichloroethane	2019/04/29		98	%	50 - 140
			Trichloroethene	2019/04/29		96	%	50 - 140
			Trichlorofluoromethane	2019/04/29		80	%	50 - 140
			1,2,4-trimethylbenzene	2019/04/29		82	%	50 - 140
			1,3,5-trimethylbenzene	2019/04/29		86	%	50 - 140
			Vinyl chloride	2019/04/29		64	%	50 - 140
9395496	MZ	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/04/29		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		101	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		110	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		98	%	50 - 140
			Bromodichloromethane	2019/04/29		108	%	60 - 130
			Bromoform	2019/04/29		112	%	60 - 130
			Bromomethane	2019/04/29		107	%	60 - 130
			Carbon tetrachloride	2019/04/29		104	%	60 - 130
			Chlorobenzene	2019/04/29		96	%	60 - 130
			Chlorodibromomethane	2019/04/29		106	%	60 - 130
			Chloroethane	2019/04/29		87	%	60 - 130
			Chloroform	2019/04/29		96	%	60 - 130
			Chloromethane	2019/04/29		82	%	60 - 130
			1,2-dibromoethane	2019/04/29		105	%	60 - 130
			1,2-dichlorobenzene	2019/04/29		95	%	60 - 130
			1,3-dichlorobenzene	2019/04/29		97	%	60 - 130
			1,4-dichlorobenzene	2019/04/29		96	%	60 - 130
			1,1-dichloroethane	2019/04/29		98	%	60 - 130
			1,2-dichloroethane	2019/04/29		101	%	60 - 130
			1,1-dichloroethene	2019/04/29		95	%	60 - 130
			cis-1,2-dichloroethene	2019/04/29		101	%	60 - 130
			trans-1,2-dichloroethene	2019/04/29		93	%	60 - 130
			Dichloromethane	2019/04/29		96	%	60 - 130
			1,2-dichloropropane	2019/04/29		103	%	60 - 130
			cis-1,3-dichloropropene	2019/04/29		120	%	60 - 130
			trans-1,3-dichloropropene	2019/04/29		119	%	60 - 130
			Methyl methacrylate	2019/04/29		103	%	60 - 130
			Methyl-tert-butylether (MTBE)	2019/04/29		97	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Styrene	2019/04/29		101	%	60 - 130
			1,1,1,2-tetrachloroethane	2019/04/29		96	%	60 - 130
			1,1,2,2-tetrachloroethane	2019/04/29		105	%	60 - 130
			Tetrachloroethene	2019/04/29		102	%	60 - 130
			1,2,3-trichlorobenzene	2019/04/29		108	%	60 - 130
			1,2,4-trichlorobenzene	2019/04/29		102	%	60 - 130
			1,3,5-trichlorobenzene	2019/04/29		97	%	60 - 130
			1,1,1-trichloroethane	2019/04/29		102	%	60 - 130
			1,1,2-trichloroethane	2019/04/29		105	%	60 - 130
			Trichloroethene	2019/04/29		105	%	60 - 130
			Trichlorofluoromethane	2019/04/29		96	%	60 - 130
			1,2,4-trimethylbenzene	2019/04/29		92	%	60 - 130
			1,3,5-trimethylbenzene	2019/04/29		96	%	60 - 130
			Vinyl chloride	2019/04/29		87	%	60 - 130
9395496	MZ	Method Blank	1,4-Difluorobenzene (sur.)	2019/04/29		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		97	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		102	%	50 - 140
			Bromodichloromethane	2019/04/29	<0.030		mg/kg	
			Bromoform	2019/04/29	<0.050		mg/kg	
			Bromomethane	2019/04/29	<0.020		mg/kg	
			Carbon tetrachloride	2019/04/29	<0.00050		mg/kg	
			Chlorobenzene	2019/04/29	<0.0010		mg/kg	
			Chlorodibromomethane	2019/04/29	<0.020		mg/kg	
			Chloroethane	2019/04/29	<0.020		mg/kg	
			Chloroform	2019/04/29	<0.010		mg/kg	
			Chloromethane	2019/04/29	<0.030		mg/kg	
			1,2-dibromoethane	2019/04/29	<0.0020		mg/kg	
			1,2-dichlorobenzene	2019/04/29	<0.020		mg/kg	
			1,3-dichlorobenzene	2019/04/29	<0.020		mg/kg	
			1,4-dichlorobenzene	2019/04/29	<0.020		mg/kg	
			1,1-dichloroethane	2019/04/29	<0.020		mg/kg	
			1,2-dichloroethane	2019/04/29	<0.0020		mg/kg	
			1,1-dichloroethene	2019/04/29	<0.020		mg/kg	
			cis-1,2-dichloroethene	2019/04/29	<0.020		mg/kg	
			trans-1,2-dichloroethene	2019/04/29	<0.020		mg/kg	
			Dichloromethane	2019/04/29	<0.030		mg/kg	
			1,2-dichloropropane	2019/04/29	<0.020		mg/kg	
			cis-1,3-dichloropropene	2019/04/29	<0.020		mg/kg	
			trans-1,3-dichloropropene	2019/04/29	<0.020		mg/kg	
			Methyl methacrylate	2019/04/29	<0.040		mg/kg	
			Methyl-tert-butylether (MTBE)	2019/04/29	<0.030		mg/kg	
			Styrene	2019/04/29	<0.020		mg/kg	
			1,1,1,2-tetrachloroethane	2019/04/29	<0.050		mg/kg	
			1,1,2,2-tetrachloroethane	2019/04/29	<0.050		mg/kg	
			Tetrachloroethene	2019/04/29	<0.010		mg/kg	
			1,2,3-trichlorobenzene	2019/04/29	<0.040		mg/kg	
			1,2,4-trichlorobenzene	2019/04/29	<0.040		mg/kg	
			1,3,5-trichlorobenzene	2019/04/29	<0.040		mg/kg	
			1,1,1-trichloroethane	2019/04/29	<0.020		mg/kg	
			1,1,2-trichloroethane	2019/04/29	<0.020		mg/kg	
			Trichloroethene	2019/04/29	<0.010		mg/kg	
			Trichlorofluoromethane	2019/04/29	<0.020		mg/kg	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2,4-trimethylbenzene	2019/04/29	<0.50		mg/kg	
			1,3,5-trimethylbenzene	2019/04/29	<0.50		mg/kg	
			Vinyl chloride	2019/04/29	<0.00030		mg/kg	
9395496	MZ	RPD [VO4869-03]	Bromodichloromethane	2019/04/30	NC		%	50
			Bromoform	2019/04/30	NC		%	50
			Bromomethane	2019/04/30	NC		%	50
			Carbon tetrachloride	2019/04/30	NC		%	50
			Chlorobenzene	2019/04/30	NC		%	50
			Chlorodibromomethane	2019/04/30	NC		%	50
			Chloroethane	2019/04/30	NC		%	50
			Chloroform	2019/04/30	NC		%	50
			Chloromethane	2019/04/30	NC		%	50
			1,2-dibromoethane	2019/04/30	NC		%	50
			1,2-dichlorobenzene	2019/04/30	NC		%	50
			1,3-dichlorobenzene	2019/04/30	NC		%	50
			1,4-dichlorobenzene	2019/04/30	NC		%	50
			1,1-dichloroethane	2019/04/30	NC		%	50
			1,2-dichloroethane	2019/04/30	NC		%	50
			1,1-dichloroethene	2019/04/30	NC		%	50
			cis-1,2-dichloroethene	2019/04/30	NC		%	50
			trans-1,2-dichloroethene	2019/04/30	NC		%	50
			Dichloromethane	2019/04/30	NC		%	50
			1,2-dichloropropane	2019/04/30	NC		%	50
			cis-1,3-dichloropropene	2019/04/30	NC		%	50
			trans-1,3-dichloropropene	2019/04/30	NC		%	50
			Methyl methacrylate	2019/04/30	NC		%	50
			Methyl-tert-butylether (MTBE)	2019/04/30	NC		%	50
			Styrene	2019/04/30	NC		%	50
			1,1,1,2-tetrachloroethane	2019/04/30	NC		%	50
			1,1,2,2-tetrachloroethane	2019/04/30	NC		%	50
			Tetrachloroethene	2019/04/30	NC		%	50
			1,2,3-trichlorobenzene	2019/04/30	NC		%	50
			1,2,4-trichlorobenzene	2019/04/30	NC		%	50
			1,3,5-trichlorobenzene	2019/04/30	NC		%	50
			1,1,1-trichloroethane	2019/04/30	NC		%	50
			1,1,2-trichloroethane	2019/04/30	NC		%	50
			Trichloroethene	2019/04/30	7.9		%	50
			Trichlorofluoromethane	2019/04/30	NC		%	50
			1,2,4-trimethylbenzene	2019/04/30	NC		%	50
			1,3,5-trimethylbenzene	2019/04/30	NC		%	50
			Vinyl chloride	2019/04/30	NC		%	50
9395532	MZ	Matrix Spike [VO4890-01]	1,4-Difluorobenzene (sur.)	2019/04/29		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		101	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		115	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		100	%	50 - 140
			Bromodichloromethane	2019/04/29		104	%	50 - 140
			Bromoform	2019/04/29		103	%	50 - 140
			Bromomethane	2019/04/29		84	%	50 - 140
			Carbon tetrachloride	2019/04/29		100	%	50 - 140
			Chlorobenzene	2019/04/29		91	%	50 - 140
			Chlorodibromomethane	2019/04/29		101	%	50 - 140
			Chloroethane	2019/04/29		74	%	50 - 140
			Chloroform	2019/04/29		94	%	50 - 140

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chloromethane	2019/04/29		59	%	50 - 140
			1,2-dibromoethane	2019/04/29		98	%	50 - 140
			1,2-dichlorobenzene	2019/04/29		95	%	50 - 140
			1,3-dichlorobenzene	2019/04/29		96	%	50 - 140
			1,4-dichlorobenzene	2019/04/29		95	%	50 - 140
			1,1-dichloroethane	2019/04/29		94	%	50 - 140
			1,2-dichloroethane	2019/04/29		97	%	50 - 140
			1,1-dichloroethene	2019/04/29		86	%	50 - 140
			cis-1,2-dichloroethene	2019/04/29		97	%	50 - 140
			trans-1,2-dichloroethene	2019/04/29		88	%	50 - 140
			Dichloromethane	2019/04/29		92	%	50 - 140
			1,2-dichloropropane	2019/04/29		100	%	50 - 140
			cis-1,3-dichloropropene	2019/04/29		100	%	50 - 140
			trans-1,3-dichloropropene	2019/04/29		108	%	50 - 140
			Methyl methacrylate	2019/04/29		99	%	50 - 140
			Methyl-tert-butylether (MTBE)	2019/04/29		94	%	50 - 140
			Styrene	2019/04/29		94	%	50 - 140
			1,1,1,2-tetrachloroethane	2019/04/29		92	%	50 - 140
			1,1,2,2-tetrachloroethane	2019/04/29		100	%	50 - 140
			Tetrachloroethene	2019/04/29		94	%	50 - 140
			1,2,3-trichlorobenzene	2019/04/29		103	%	50 - 140
			1,2,4-trichlorobenzene	2019/04/29		101	%	50 - 140
			1,3,5-trichlorobenzene	2019/04/29		97	%	50 - 140
			1,1,1-trichloroethane	2019/04/29		98	%	50 - 140
			1,1,2-trichloroethane	2019/04/29		102	%	50 - 140
			Trichloroethene	2019/04/29		101	%	50 - 140
			Trichlorofluoromethane	2019/04/29		85	%	50 - 140
			1,2,4-trimethylbenzene	2019/04/29		93	%	50 - 140
			1,3,5-trimethylbenzene	2019/04/29		96	%	50 - 140
			Vinyl chloride	2019/04/29		68	%	50 - 140
9395532	MZ	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/04/29		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		104	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		121	%	50 - 140
			Bromodichloromethane	2019/04/29		105	%	60 - 130
			Bromoform	2019/04/29		103	%	60 - 130
			Bromomethane	2019/04/29		104	%	60 - 130
			Carbon tetrachloride	2019/04/29		101	%	60 - 130
			Chlorobenzene	2019/04/29		94	%	60 - 130
			Chlorodibromomethane	2019/04/29		105	%	60 - 130
			Chloroethane	2019/04/29		87	%	60 - 130
			Chloroform	2019/04/29		94	%	60 - 130
			Chloromethane	2019/04/29		79	%	60 - 130
			1,2-dibromoethane	2019/04/29		103	%	60 - 130
			1,2-dichlorobenzene	2019/04/29		94	%	60 - 130
			1,3-dichlorobenzene	2019/04/29		97	%	60 - 130
			1,4-dichlorobenzene	2019/04/29		95	%	60 - 130
			1,1-dichloroethane	2019/04/29		96	%	60 - 130
			1,2-dichloroethane	2019/04/29		100	%	60 - 130
			1,1-dichloroethene	2019/04/29		92	%	60 - 130
			cis-1,2-dichloroethene	2019/04/29		99	%	60 - 130
			trans-1,2-dichloroethene	2019/04/29		92	%	60 - 130
			Dichloromethane	2019/04/29		96	%	60 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,2-dichloropropane	2019/04/29		101	%	60 - 130
			cis-1,3-dichloropropene	2019/04/29		106	%	60 - 130
			trans-1,3-dichloropropene	2019/04/29		116	%	60 - 130
			Methyl methacrylate	2019/04/29		97	%	60 - 130
			Methyl-tert-butylether (MTBE)	2019/04/29		96	%	60 - 130
			Styrene	2019/04/29		96	%	60 - 130
			1,1,1,2-tetrachloroethane	2019/04/29		94	%	60 - 130
			1,1,2,2-tetrachloroethane	2019/04/29		93	%	60 - 130
			Tetrachloroethene	2019/04/29		98	%	60 - 130
			1,2,3-trichlorobenzene	2019/04/29		95	%	60 - 130
			1,2,4-trichlorobenzene	2019/04/29		95	%	60 - 130
			1,3,5-trichlorobenzene	2019/04/29		93	%	60 - 130
			1,1,1-trichloroethane	2019/04/29		100	%	60 - 130
			1,1,2-trichloroethane	2019/04/29		101	%	60 - 130
			Trichloroethene	2019/04/29		101	%	60 - 130
			Trichlorofluoromethane	2019/04/29		94	%	60 - 130
			1,2,4-trimethylbenzene	2019/04/29		95	%	60 - 130
			1,3,5-trimethylbenzene	2019/04/29		99	%	60 - 130
			Vinyl chloride	2019/04/29		84	%	60 - 130
9395532	MZ	Method Blank	1,4-Difluorobenzene (sur.)	2019/04/29		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		97	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		102	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		103	%	50 - 140
			Bromodichloromethane	2019/04/29	<0.030		mg/kg	
			Bromoform	2019/04/29	<0.050		mg/kg	
			Bromomethane	2019/04/29	<0.020		mg/kg	
			Carbon tetrachloride	2019/04/29	<0.00050		mg/kg	
			Chlorobenzene	2019/04/29	<0.0010		mg/kg	
			Chlorodibromomethane	2019/04/29	<0.020		mg/kg	
			Chloroethane	2019/04/29	<0.020		mg/kg	
			Chloroform	2019/04/29	<0.010		mg/kg	
			Chloromethane	2019/04/29	<0.030		mg/kg	
			1,2-dibromoethane	2019/04/29	<0.0020		mg/kg	
			1,2-dichlorobenzene	2019/04/29	<0.020		mg/kg	
			1,3-dichlorobenzene	2019/04/29	<0.020		mg/kg	
			1,4-dichlorobenzene	2019/04/29	<0.020		mg/kg	
			1,1-dichloroethane	2019/04/29	<0.020		mg/kg	
			1,2-dichloroethane	2019/04/29	<0.0020		mg/kg	
			1,1-dichloroethene	2019/04/29	<0.020		mg/kg	
			cis-1,2-dichloroethene	2019/04/29	<0.020		mg/kg	
			trans-1,2-dichloroethene	2019/04/29	<0.020		mg/kg	
			Dichloromethane	2019/04/29	<0.030		mg/kg	
			1,2-dichloropropane	2019/04/29	<0.020		mg/kg	
			cis-1,3-dichloropropene	2019/04/29	<0.020		mg/kg	
			trans-1,3-dichloropropene	2019/04/29	<0.020		mg/kg	
			Methyl methacrylate	2019/04/29	<0.040		mg/kg	
			Methyl-tert-butylether (MTBE)	2019/04/29	<0.030		mg/kg	
			Styrene	2019/04/29	<0.020		mg/kg	
			1,1,1,2-tetrachloroethane	2019/04/29	<0.050		mg/kg	
			1,1,2,2-tetrachloroethane	2019/04/29	<0.050		mg/kg	
			Tetrachloroethene	2019/04/29	<0.010		mg/kg	
			1,2,3-trichlorobenzene	2019/04/29	<0.040		mg/kg	
			1,2,4-trichlorobenzene	2019/04/29	<0.040		mg/kg	

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			1,3,5-trichlorobenzene	2019/04/29	<0.040		mg/kg	
			1,1,1-trichloroethane	2019/04/29	<0.020		mg/kg	
			1,1,2-trichloroethane	2019/04/29	<0.020		mg/kg	
			Trichloroethene	2019/04/29	<0.010		mg/kg	
			Trichlorofluoromethane	2019/04/29	<0.020		mg/kg	
			1,2,4-trimethylbenzene	2019/04/29	<0.50		mg/kg	
			1,3,5-trimethylbenzene	2019/04/29	<0.50		mg/kg	
			Vinyl chloride	2019/04/29	<0.00030		mg/kg	
9395532	MZ	RPD [VO4890-01]	Bromodichloromethane	2019/04/30	NC		%	50
			Bromoform	2019/04/30	NC		%	50
			Bromomethane	2019/04/30	NC		%	50
			Carbon tetrachloride	2019/04/30	NC		%	50
			Chlorobenzene	2019/04/30	NC		%	50
			Chlorodibromomethane	2019/04/30	NC		%	50
			Chloroethane	2019/04/30	NC		%	50
			Chloroform	2019/04/30	NC		%	50
			Chloromethane	2019/04/30	NC		%	50
			1,2-dibromoethane	2019/04/30	NC		%	50
			1,2-dichlorobenzene	2019/04/30	NC		%	50
			1,3-dichlorobenzene	2019/04/30	NC		%	50
			1,4-dichlorobenzene	2019/04/30	NC		%	50
			1,1-dichloroethane	2019/04/30	NC		%	50
			1,2-dichloroethane	2019/04/30	NC		%	50
			1,1-dichloroethene	2019/04/30	NC		%	50
			cis-1,2-dichloroethene	2019/04/30	NC		%	50
			trans-1,2-dichloroethene	2019/04/30	NC		%	50
			Dichloromethane	2019/04/30	NC		%	50
			1,2-dichloropropane	2019/04/30	NC		%	50
			cis-1,3-dichloropropene	2019/04/30	NC		%	50
			trans-1,3-dichloropropene	2019/04/30	NC		%	50
			Methyl methacrylate	2019/04/30	NC		%	50
			Methyl-tert-butylether (MTBE)	2019/04/30	NC		%	50
			Styrene	2019/04/30	NC		%	50
			1,1,1,2-tetrachloroethane	2019/04/30	NC		%	50
			1,1,2,2-tetrachloroethane	2019/04/30	NC		%	50
			Tetrachloroethene	2019/04/30	NC		%	50
			1,2,3-trichlorobenzene	2019/04/30	NC		%	50
			1,2,4-trichlorobenzene	2019/04/30	NC		%	50
			1,3,5-trichlorobenzene	2019/04/30	NC		%	50
			1,1,1-trichloroethane	2019/04/30	NC		%	50
			1,1,2-trichloroethane	2019/04/30	NC		%	50
			Trichloroethene	2019/04/30	8.2		%	50
			Trichlorofluoromethane	2019/04/30	NC		%	50
			1,2,4-trimethylbenzene	2019/04/30	NC		%	50
			1,3,5-trimethylbenzene	2019/04/30	NC		%	50
			Vinyl chloride	2019/04/30	NC		%	50
9395559	DO1	Matrix Spike [VO4897-03]	1,4-Difluorobenzene (sur.)	2019/04/29		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		111	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		121	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		109	%	50 - 140
			Benzene	2019/04/29		108	%	50 - 140
			Toluene	2019/04/29		107	%	50 - 140
			Ethylbenzene	2019/04/29		116	%	50 - 140

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			m & p-Xylene	2019/04/29		117	%	50 - 140
			o-Xylene	2019/04/29		111	%	50 - 140
			F1 (C6-C10)	2019/04/29		99	%	60 - 140
9395559	DO1	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/04/29		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		108	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		102	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		109	%	50 - 140
			Benzene	2019/04/29		100	%	60 - 130
			Toluene	2019/04/29		102	%	60 - 130
			Ethylbenzene	2019/04/29		106	%	60 - 130
			m & p-Xylene	2019/04/29		108	%	60 - 130
			o-Xylene	2019/04/29		105	%	60 - 130
			F1 (C6-C10)	2019/04/29		93	%	60 - 140
9395559	DO1	Method Blank	1,4-Difluorobenzene (sur.)	2019/04/29		95	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/04/29		107	%	50 - 140
			D10-o-Xylene (sur.)	2019/04/29		92	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/04/29		110	%	50 - 140
			Benzene	2019/04/29	<0.0050		mg/kg	
			Toluene	2019/04/29	<0.050		mg/kg	
			Ethylbenzene	2019/04/29	<0.010		mg/kg	
			m & p-Xylene	2019/04/29	<0.040		mg/kg	
			o-Xylene	2019/04/29	<0.020		mg/kg	
			F1 (C6-C10)	2019/04/29	<10		mg/kg	
9395559	DO1	RPD [VO4897-03]	Benzene	2019/04/29	NC		%	50
			Toluene	2019/04/29	NC		%	50
			Ethylbenzene	2019/04/29	NC		%	50
			m & p-Xylene	2019/04/29	NC		%	50
			o-Xylene	2019/04/29	NC		%	50
			F1 (C6-C10)	2019/04/29	NC		%	30
9395653	LL0	Matrix Spike [VO4898-02]	O-TERPHENYL (sur.)	2019/04/29		102	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/04/29		108	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2019/04/29		104	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2019/04/29		97	%	60 - 140
9395653	LL0	Spiked Blank	O-TERPHENYL (sur.)	2019/04/29		99	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/04/29		106	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2019/04/29		101	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2019/04/29		94	%	60 - 140
9395653	LL0	Method Blank	O-TERPHENYL (sur.)	2019/04/29		111	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/04/29	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2019/04/29	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2019/04/29	<50		mg/kg	
9395653	LL0	RPD [VO4898-02]	F2 (C10-C16 Hydrocarbons)	2019/04/29	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2019/04/29	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2019/04/29	NC		%	40
9395654	NK3	Matrix Spike [VO4898-02]	D10-ANTHRACENE (sur.)	2019/04/29		82	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2019/04/29		79	%	50 - 130
			D8-NAPHTHALENE (sur.)	2019/04/29		76	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/04/29		84	%	50 - 130
			Acenaphthene	2019/04/29		82	%	50 - 130
			Acenaphthylene	2019/04/29		81	%	50 - 130
			Acridine	2019/04/29		62	%	50 - 130
			Anthracene	2019/04/29		79	%	50 - 130
			Benzo(a)anthracene	2019/04/29		84	%	50 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Benzo(b&j)fluoranthene	2019/04/29		79	%	50 - 130
			Benzo(k)fluoranthene	2019/04/29		81	%	50 - 130
			Benzo(g,h,i)perylene	2019/04/29		78	%	50 - 130
			Benzo(c)phenanthrene	2019/04/29		87	%	50 - 130
			Benzo(a)pyrene	2019/04/29		82	%	50 - 130
			Benzo[e]pyrene	2019/04/29		81	%	50 - 130
			Chrysene	2019/04/29		81	%	50 - 130
			Dibenz(a,h)anthracene	2019/04/29		81	%	50 - 130
			Fluoranthene	2019/04/29		83	%	50 - 130
			Fluorene	2019/04/29		82	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/04/29		81	%	50 - 130
			1-Methylnaphthalene	2019/04/29		83	%	50 - 130
			2-Methylnaphthalene	2019/04/29		80	%	50 - 130
			Naphthalene	2019/04/29		78	%	50 - 130
			Phenanthrene	2019/04/29		79	%	50 - 130
			Perylene	2019/04/29		78	%	50 - 130
			Pyrene	2019/04/29		83	%	50 - 130
			Quinoline	2019/04/29		106	%	50 - 130
9395654	NK3	Spiked Blank	D10-ANTHRACENE (sur.)	2019/04/29		93	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2019/04/29		89	%	50 - 130
			D8-NAPHTHALENE (sur.)	2019/04/29		85	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/04/29		96	%	50 - 130
			Acenaphthene	2019/04/29		86	%	50 - 130
			Acenaphthylene	2019/04/29		86	%	50 - 130
			Acridine	2019/04/29		68	%	50 - 130
			Anthracene	2019/04/29		84	%	50 - 130
			Benzo(a)anthracene	2019/04/29		91	%	50 - 130
			Benzo(b&j)fluoranthene	2019/04/29		85	%	50 - 130
			Benzo(k)fluoranthene	2019/04/29		87	%	50 - 130
			Benzo(g,h,i)perylene	2019/04/29		82	%	50 - 130
			Benzo(c)phenanthrene	2019/04/29		95	%	50 - 130
			Benzo(a)pyrene	2019/04/29		89	%	50 - 130
			Benzo[e]pyrene	2019/04/29		88	%	50 - 130
			Chrysene	2019/04/29		89	%	50 - 130
			Dibenz(a,h)anthracene	2019/04/29		82	%	50 - 130
			Fluoranthene	2019/04/29		89	%	50 - 130
			Fluorene	2019/04/29		87	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/04/29		83	%	50 - 130
			1-Methylnaphthalene	2019/04/29		88	%	50 - 130
			2-Methylnaphthalene	2019/04/29		85	%	50 - 130
			Naphthalene	2019/04/29		82	%	50 - 130
			Phenanthrene	2019/04/29		84	%	50 - 130
			Perylene	2019/04/29		85	%	50 - 130
			Pyrene	2019/04/29		89	%	50 - 130
			Quinoline	2019/04/29		99	%	50 - 130
9395654	NK3	Method Blank	D10-ANTHRACENE (sur.)	2019/04/29		97	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2019/04/29		93	%	50 - 130
			D8-NAPHTHALENE (sur.)	2019/04/29		89	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/04/29		107	%	50 - 130
			Acenaphthene	2019/04/29	<0.0050		mg/kg	
			Acenaphthylene	2019/04/29	<0.0050		mg/kg	
			Acridine	2019/04/29	<0.010		mg/kg	
			Anthracene	2019/04/29	<0.0040		mg/kg	

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			Benzo(a)anthracene	2019/04/29	<0.0050		mg/kg	
			Benzo(b&j)fluoranthene	2019/04/29	<0.0050		mg/kg	
			Benzo(k)fluoranthene	2019/04/29	<0.0050		mg/kg	
			Benzo(g,h,i)perylene	2019/04/29	<0.0050		mg/kg	
			Benzo(c)phenanthrene	2019/04/29	<0.0050		mg/kg	
			Benzo(a)pyrene	2019/04/29	<0.0050		mg/kg	
			Benzo[e]pyrene	2019/04/29	<0.0050		mg/kg	
			Chrysene	2019/04/29	<0.0050		mg/kg	
			Dibenz(a,h)anthracene	2019/04/29	<0.0050		mg/kg	
			Fluoranthene	2019/04/29	<0.0050		mg/kg	
			Fluorene	2019/04/29	<0.0050		mg/kg	
			Indeno(1,2,3-cd)pyrene	2019/04/29	<0.0050		mg/kg	
			1-Methylnaphthalene	2019/04/29	<0.0050		mg/kg	
			2-Methylnaphthalene	2019/04/29	<0.0050		mg/kg	
			Naphthalene	2019/04/29	<0.0050		mg/kg	
			Phenanthrene	2019/04/29	<0.0050		mg/kg	
			Perylene	2019/04/29	<0.0050		mg/kg	
			Pyrene	2019/04/29	<0.0050		mg/kg	
			Quinoline	2019/04/29	<0.010		mg/kg	
9395654	NK3	RPD [VO4898-02]	Acenaphthene	2019/04/29	NC		%	50
			Acenaphthylene	2019/04/29	NC		%	50
			Acridine	2019/04/29	NC		%	50
			Anthracene	2019/04/29	NC		%	50
			Benzo(a)anthracene	2019/04/29	NC		%	50
			Benzo(b&j)fluoranthene	2019/04/29	NC		%	50
			Benzo(k)fluoranthene	2019/04/29	NC		%	50
			Benzo(g,h,i)perylene	2019/04/29	NC		%	50
			Benzo(c)phenanthrene	2019/04/29	NC		%	50
			Benzo(a)pyrene	2019/04/29	NC		%	50
			Benzo[e]pyrene	2019/04/29	NC		%	50
			Chrysene	2019/04/29	NC		%	50
			Dibenz(a,h)anthracene	2019/04/29	NC		%	50
			Fluoranthene	2019/04/29	NC		%	50
			Fluorene	2019/04/29	NC		%	50
			Indeno(1,2,3-cd)pyrene	2019/04/29	NC		%	50
			1-Methylnaphthalene	2019/04/29	NC		%	50
			2-Methylnaphthalene	2019/04/29	NC		%	50
			Naphthalene	2019/04/29	NC		%	50
			Phenanthrene	2019/04/29	NC		%	50
			Perylene	2019/04/29	NC		%	50
			Pyrene	2019/04/29	NC		%	50
			Quinoline	2019/04/29	NC		%	50
9395657	JNG	Method Blank	Moisture	2019/04/29	<0.30		%	
9395657	JNG	RPD [VO4889-02]	Moisture	2019/04/29	1.2		%	20
9395691	STI	Matrix Spike [VO4897-01]	Hex. Chromium (Cr 6+)	2019/04/28		101	%	75 - 125
9395691	STI	Spiked Blank	Hex. Chromium (Cr 6+)	2019/04/28		102	%	80 - 120
9395691	STI	Method Blank	Hex. Chromium (Cr 6+)	2019/04/28	<0.080		mg/kg	
9395691	STI	RPD [VO4897-01]	Hex. Chromium (Cr 6+)	2019/04/28	NC		%	35
9395699	STI	Matrix Spike [VO4869-01]	Hex. Chromium (Cr 6+)	2019/04/28		103	%	75 - 125
9395699	STI	Spiked Blank	Hex. Chromium (Cr 6+)	2019/04/28		104	%	80 - 120
9395699	STI	Method Blank	Hex. Chromium (Cr 6+)	2019/04/28	<0.080		mg/kg	
9395699	STI	RPD [VO4869-01]	Hex. Chromium (Cr 6+)	2019/04/28	NC		%	35
9395702	JNG	Method Blank	Moisture	2019/04/29	<0.30		%	

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9395702	JNG	RPD [VO4897-02]	Moisture	2019/04/29	2.0		%	20
9395729	JHC	QC Standard	Soluble (CaCl2) pH	2019/04/29		100	%	98 - 102
9395729	JHC	Spiked Blank	Soluble (CaCl2) pH	2019/04/29		101	%	97 - 103
9395729	JHC	RPD [VO4877-01]	Soluble (CaCl2) pH	2019/04/29	0.26		%	N/A
9395731	JHC	QC Standard	Saturation %	2019/04/30		98	%	75 - 125
9395731	JHC	RPD [VO4877-01]	Saturation %	2019/04/30	1.3		%	12
9395990	LL0	Matrix Spike	O-TERPHENYL (sur.)	2019/04/29		91	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/04/29		102	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2019/04/29		101	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2019/04/29		96	%	60 - 140
9395990	LL0	Spiked Blank	O-TERPHENYL (sur.)	2019/04/29		92	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/04/29		102	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2019/04/29		103	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2019/04/29		98	%	60 - 140
9395990	LL0	Method Blank	O-TERPHENYL (sur.)	2019/04/29		104	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/04/29	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2019/04/29	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2019/04/29	<50		mg/kg	
9395990	LL0	RPD	F2 (C10-C16 Hydrocarbons)	2019/04/29	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2019/04/29	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2019/04/29	NC		%	40
9396017	JHC	QC Standard	Saturation %	2019/04/29		101	%	75 - 125
9396017	JHC	RPD [VO4886-01]	Saturation %	2019/04/29	3.2		%	12
9396137	ANE	Matrix Spike [VO4894-01]	Total Antimony (Sb)	2019/04/29		83	%	75 - 125
			Total Arsenic (As)	2019/04/29		111	%	75 - 125
			Total Barium (Ba)	2019/04/29		NC	%	75 - 125
			Total Beryllium (Be)	2019/04/29		97	%	75 - 125
			Total Cadmium (Cd)	2019/04/29		95	%	75 - 125
			Total Chromium (Cr)	2019/04/29		107	%	75 - 125
			Total Cobalt (Co)	2019/04/29		98	%	75 - 125
			Total Copper (Cu)	2019/04/29		98	%	75 - 125
			Total Lead (Pb)	2019/04/29		100	%	75 - 125
			Total Mercury (Hg)	2019/04/29		85	%	75 - 125
			Total Molybdenum (Mo)	2019/04/29		96	%	75 - 125
			Total Nickel (Ni)	2019/04/29		101	%	75 - 125
			Total Selenium (Se)	2019/04/29		99	%	75 - 125
			Total Silver (Ag)	2019/04/29		96	%	75 - 125
			Total Thallium (Tl)	2019/04/29		98	%	75 - 125
			Total Tin (Sn)	2019/04/29		98	%	75 - 125
			Total Uranium (U)	2019/04/29		94	%	75 - 125
			Total Vanadium (V)	2019/04/29		116	%	75 - 125
			Total Zinc (Zn)	2019/04/29		106	%	75 - 125
9396137	ANE	QC Standard	Total Arsenic (As)	2019/04/29		103	%	53 - 147
			Total Barium (Ba)	2019/04/29		90	%	80 - 119
			Total Chromium (Cr)	2019/04/29		91	%	59 - 141
			Total Cobalt (Co)	2019/04/29		91	%	58 - 142
			Total Copper (Cu)	2019/04/29		100	%	83 - 117
			Total Lead (Pb)	2019/04/29		103	%	79 - 121
			Total Nickel (Ni)	2019/04/29		101	%	79 - 121
			Total Vanadium (V)	2019/04/29		95	%	79 - 121
			Total Zinc (Zn)	2019/04/29		95	%	79 - 121
9396137	ANE	Spiked Blank	Total Antimony (Sb)	2019/04/29		95	%	80 - 120
			Total Arsenic (As)	2019/04/29		101	%	80 - 120

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			Total Barium (Ba)	2019/04/29		100	%	80 - 120
			Total Beryllium (Be)	2019/04/29		98	%	80 - 120
			Total Cadmium (Cd)	2019/04/29		103	%	80 - 120
			Total Chromium (Cr)	2019/04/29		103	%	80 - 120
			Total Cobalt (Co)	2019/04/29		102	%	80 - 120
			Total Copper (Cu)	2019/04/29		104	%	80 - 120
			Total Lead (Pb)	2019/04/29		105	%	80 - 120
			Total Mercury (Hg)	2019/04/29		100	%	80 - 120
			Total Molybdenum (Mo)	2019/04/29		103	%	80 - 120
			Total Nickel (Ni)	2019/04/29		102	%	80 - 120
			Total Selenium (Se)	2019/04/29		103	%	80 - 120
			Total Silver (Ag)	2019/04/29		103	%	80 - 120
			Total Thallium (Tl)	2019/04/29		107	%	80 - 120
			Total Tin (Sn)	2019/04/29		101	%	80 - 120
			Total Uranium (U)	2019/04/29		104	%	80 - 120
			Total Vanadium (V)	2019/04/29		104	%	80 - 120
			Total Zinc (Zn)	2019/04/29		102	%	80 - 120
9396137	ANE	Method Blank	Total Antimony (Sb)	2019/04/29	<0.50		mg/kg	
			Total Arsenic (As)	2019/04/29	<1.0		mg/kg	
			Total Barium (Ba)	2019/04/29	<1.0		mg/kg	
			Total Beryllium (Be)	2019/04/29	<0.40		mg/kg	
			Total Cadmium (Cd)	2019/04/29	<0.050		mg/kg	
			Total Chromium (Cr)	2019/04/29	<1.0		mg/kg	
			Total Cobalt (Co)	2019/04/29	<0.50		mg/kg	
			Total Copper (Cu)	2019/04/29	<1.0		mg/kg	
			Total Lead (Pb)	2019/04/29	<0.50		mg/kg	
			Total Mercury (Hg)	2019/04/29	<0.050		mg/kg	
			Total Molybdenum (Mo)	2019/04/29	<0.40		mg/kg	
			Total Nickel (Ni)	2019/04/29	<1.0		mg/kg	
			Total Selenium (Se)	2019/04/29	<0.50		mg/kg	
			Total Silver (Ag)	2019/04/29	<0.20		mg/kg	
			Total Thallium (Tl)	2019/04/29	<0.10		mg/kg	
			Total Tin (Sn)	2019/04/29	<1.0		mg/kg	
			Total Uranium (U)	2019/04/29	<0.20		mg/kg	
			Total Vanadium (V)	2019/04/29	<1.0		mg/kg	
			Total Zinc (Zn)	2019/04/29	<10		mg/kg	
9396137	ANE	RPD [VO4894-01]	Total Antimony (Sb)	2019/04/29	0.40		%	30
			Total Arsenic (As)	2019/04/29	23		%	30
			Total Barium (Ba)	2019/04/29	30		%	35
			Total Beryllium (Be)	2019/04/29	1.8		%	30
			Total Cadmium (Cd)	2019/04/29	5.9		%	30
			Total Chromium (Cr)	2019/04/29	8.1		%	30
			Total Cobalt (Co)	2019/04/29	0.71		%	30
			Total Copper (Cu)	2019/04/29	0.20		%	30
			Total Lead (Pb)	2019/04/29	2.5		%	35
			Total Mercury (Hg)	2019/04/29	3.1		%	35
			Total Molybdenum (Mo)	2019/04/29	NC		%	35
			Total Nickel (Ni)	2019/04/29	6.8		%	30
			Total Selenium (Se)	2019/04/29	NC		%	30
			Total Silver (Ag)	2019/04/29	NC		%	35
			Total Thallium (Tl)	2019/04/29	0.040		%	30
			Total Tin (Sn)	2019/04/29	NC		%	35
			Total Uranium (U)	2019/04/29	14		%	30

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			Total Vanadium (V)	2019/04/29	2.4		%	30
			Total Zinc (Zn)	2019/04/29	0.11		%	30
9396455	ZI	Matrix Spike [VO4886-01]	Soluble Boron (B)	2019/04/29		97	%	75 - 125
			Soluble Calcium (Ca)	2019/04/29		95	%	75 - 125
			Soluble Magnesium (Mg)	2019/04/29		95	%	75 - 125
			Soluble Sodium (Na)	2019/04/29		97	%	75 - 125
			Soluble Potassium (K)	2019/04/29		97	%	75 - 125
9396455	ZI	QC Standard	Soluble Calcium (Ca)	2019/04/29		94	%	75 - 125
			Soluble Magnesium (Mg)	2019/04/29		93	%	75 - 125
			Soluble Sodium (Na)	2019/04/29		100	%	75 - 125
			Soluble Potassium (K)	2019/04/29		112	%	75 - 125
9396455	ZI	Spiked Blank	Soluble Boron (B)	2019/04/29		98	%	80 - 120
			Soluble Calcium (Ca)	2019/04/29		96	%	80 - 120
			Soluble Magnesium (Mg)	2019/04/29		96	%	80 - 120
			Soluble Sodium (Na)	2019/04/29		99	%	80 - 120
			Soluble Potassium (K)	2019/04/29		98	%	80 - 120
9396455	ZI	Method Blank	Soluble Boron (B)	2019/04/29	<0.10		mg/L	
			Soluble Calcium (Ca)	2019/04/29	<1.5		mg/L	
			Soluble Magnesium (Mg)	2019/04/29	<1.0		mg/L	
			Soluble Sodium (Na)	2019/04/29	<2.5		mg/L	
			Soluble Potassium (K)	2019/04/29	<1.3		mg/L	
			Soluble Sulphate (SO4)	2019/04/29	<5.0		mg/L	
9396455	ZI	RPD [VO4886-01]	Soluble Boron (B)	2019/04/29	8.2		%	30
			Soluble Calcium (Ca)	2019/04/29	1.7		%	30
			Soluble Magnesium (Mg)	2019/04/29	2.1		%	30
			Soluble Sodium (Na)	2019/04/29	1.3		%	30
			Soluble Potassium (K)	2019/04/29	0.96		%	30
			Soluble Sulphate (SO4)	2019/04/29	1.9		%	30
9396473	STI	Matrix Spike [VO4886-01]	Soluble Chloride (Cl)	2019/04/29		NC	%	75 - 125
9396473	STI	QC Standard	Soluble Chloride (Cl)	2019/04/29		89	%	75 - 125
9396473	STI	Spiked Blank	Soluble Chloride (Cl)	2019/04/29		108	%	80 - 120
9396473	STI	Method Blank	Soluble Chloride (Cl)	2019/04/29	<5.0		mg/L	
9396473	STI	RPD [VO4886-01]	Soluble Chloride (Cl)	2019/04/29	4.7		%	30
9396708	JHC	QC Standard	Soluble Conductivity	2019/04/29		93	%	75 - 125
9396708	JHC	Spiked Blank	Soluble Conductivity	2019/04/29		100	%	90 - 110
9396708	JHC	Method Blank	Soluble Conductivity	2019/04/29	<0.020		dS/m	
9396708	JHC	RPD [VO4886-01]	Soluble Conductivity	2019/04/29	2.4		%	20
9396749	ANE	Matrix Spike [VO4886-01]	Total Antimony (Sb)	2019/04/30		82	%	75 - 125
			Total Arsenic (As)	2019/04/30		91	%	75 - 125
			Total Barium (Ba)	2019/04/30		NC	%	75 - 125
			Total Beryllium (Be)	2019/04/30		93	%	75 - 125
			Total Cadmium (Cd)	2019/04/30		93	%	75 - 125
			Total Chromium (Cr)	2019/04/30		97	%	75 - 125
			Total Cobalt (Co)	2019/04/30		91	%	75 - 125
			Total Copper (Cu)	2019/04/30		89	%	75 - 125
			Total Lead (Pb)	2019/04/30		86	%	75 - 125
			Total Mercury (Hg)	2019/04/30		90	%	75 - 125
			Total Molybdenum (Mo)	2019/04/30		95	%	75 - 125
			Total Nickel (Ni)	2019/04/30		88	%	75 - 125
			Total Selenium (Se)	2019/04/30		95	%	75 - 125
			Total Silver (Ag)	2019/04/30		93	%	75 - 125
			Total Thallium (Tl)	2019/04/30		91	%	75 - 125
			Total Tin (Sn)	2019/04/30		94	%	75 - 125

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Uranium (U)	2019/04/30		92	%	75 - 125
			Total Vanadium (V)	2019/04/30		106	%	75 - 125
			Total Zinc (Zn)	2019/04/30		86	%	75 - 125
9396749	ANE	QC Standard	Total Arsenic (As)	2019/04/30		106	%	53 - 147
			Total Barium (Ba)	2019/04/30		96	%	80 - 119
			Total Chromium (Cr)	2019/04/30		102	%	59 - 141
			Total Cobalt (Co)	2019/04/30		99	%	58 - 142
			Total Copper (Cu)	2019/04/30		102	%	83 - 117
			Total Lead (Pb)	2019/04/30		109	%	79 - 121
			Total Nickel (Ni)	2019/04/30		105	%	79 - 121
			Total Vanadium (V)	2019/04/30		104	%	79 - 121
			Total Zinc (Zn)	2019/04/30		101	%	79 - 121
9396749	ANE	Spiked Blank	Total Antimony (Sb)	2019/04/30		88	%	80 - 120
			Total Arsenic (As)	2019/04/30		96	%	80 - 120
			Total Barium (Ba)	2019/04/30		92	%	80 - 120
			Total Beryllium (Be)	2019/04/30		92	%	80 - 120
			Total Cadmium (Cd)	2019/04/30		95	%	80 - 120
			Total Chromium (Cr)	2019/04/30		95	%	80 - 120
			Total Cobalt (Co)	2019/04/30		94	%	80 - 120
			Total Copper (Cu)	2019/04/30		95	%	80 - 120
			Total Lead (Pb)	2019/04/30		92	%	80 - 120
			Total Mercury (Hg)	2019/04/30		98	%	80 - 120
			Total Molybdenum (Mo)	2019/04/30		95	%	80 - 120
			Total Nickel (Ni)	2019/04/30		94	%	80 - 120
			Total Selenium (Se)	2019/04/30		97	%	80 - 120
			Total Silver (Ag)	2019/04/30		94	%	80 - 120
			Total Thallium (Tl)	2019/04/30		94	%	80 - 120
			Total Tin (Sn)	2019/04/30		91	%	80 - 120
			Total Uranium (U)	2019/04/30		95	%	80 - 120
			Total Vanadium (V)	2019/04/30		93	%	80 - 120
			Total Zinc (Zn)	2019/04/30		94	%	80 - 120
9396749	ANE	Method Blank	Total Antimony (Sb)	2019/04/30	<0.50		mg/kg	
			Total Arsenic (As)	2019/04/30	<1.0		mg/kg	
			Total Barium (Ba)	2019/04/30	<1.0		mg/kg	
			Total Beryllium (Be)	2019/04/30	<0.40		mg/kg	
			Total Cadmium (Cd)	2019/04/30	<0.050		mg/kg	
			Total Chromium (Cr)	2019/04/30	<1.0		mg/kg	
			Total Cobalt (Co)	2019/04/30	<0.50		mg/kg	
			Total Copper (Cu)	2019/04/30	<1.0		mg/kg	
			Total Lead (Pb)	2019/04/30	<0.50		mg/kg	
			Total Mercury (Hg)	2019/04/30	<0.050		mg/kg	
			Total Molybdenum (Mo)	2019/04/30	<0.40		mg/kg	
			Total Nickel (Ni)	2019/04/30	<1.0		mg/kg	
			Total Selenium (Se)	2019/04/30	<0.50		mg/kg	
			Total Silver (Ag)	2019/04/30	<0.20		mg/kg	
			Total Thallium (Tl)	2019/04/30	<0.10		mg/kg	
			Total Tin (Sn)	2019/04/30	<1.0		mg/kg	
			Total Uranium (U)	2019/04/30	<0.20		mg/kg	
			Total Vanadium (V)	2019/04/30	<1.0		mg/kg	
			Total Zinc (Zn)	2019/04/30	<10		mg/kg	
9396749	ANE	RPD [VO4886-01]	Total Antimony (Sb)	2019/04/30	NC		%	30
			Total Arsenic (As)	2019/04/30	12		%	30
			Total Barium (Ba)	2019/04/30	15		%	35

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Beryllium (Be)	2019/04/30	NC		%	30
			Total Cadmium (Cd)	2019/04/30	11		%	30
			Total Chromium (Cr)	2019/04/30	22		%	30
			Total Cobalt (Co)	2019/04/30	9.7		%	30
			Total Copper (Cu)	2019/04/30	14		%	30
			Total Lead (Pb)	2019/04/30	19		%	35
			Total Mercury (Hg)	2019/04/30	10		%	35
			Total Molybdenum (Mo)	2019/04/30	12		%	35
			Total Nickel (Ni)	2019/04/30	14		%	30
			Total Selenium (Se)	2019/04/30	NC		%	30
			Total Silver (Ag)	2019/04/30	NC		%	35
			Total Thallium (Tl)	2019/04/30	4.7		%	30
			Total Tin (Sn)	2019/04/30	0		%	35
			Total Uranium (U)	2019/04/30	16		%	30
			Total Vanadium (V)	2019/04/30	10		%	30
			Total Zinc (Zn)	2019/04/30	11		%	30
9397635	ALX	Matrix Spike [VO4894-01]	Available (NH4F) Phosphorus (P)	2019/04/30		94	%	75 - 125
9397635	ALX	Spiked Blank	Available (NH4F) Phosphorus (P)	2019/04/30		95	%	80 - 120
9397635	ALX	Method Blank	Available (NH4F) Phosphorus (P)	2019/04/30	<1.0		mg/kg	
9397635	ALX	RPD [VO4894-01]	Available (NH4F) Phosphorus (P)	2019/04/30	NC		%	35
9397703	STI	Matrix Spike [VO4877-01]	Soluble Chloride (Cl)	2019/04/30		111	%	75 - 125
9397703	STI	QC Standard	Soluble Chloride (Cl)	2019/04/30		100	%	75 - 125
9397703	STI	Spiked Blank	Soluble Chloride (Cl)	2019/04/30		111	%	80 - 120
9397703	STI	Method Blank	Soluble Chloride (Cl)	2019/04/30	<5.0		mg/L	
9397703	STI	RPD [VO4877-01]	Soluble Chloride (Cl)	2019/04/30	4.3		%	30
9397706	ALX	Matrix Spike [VO4894-01]	Available (NH4OAc) Potassium (K)	2019/04/30		99	%	75 - 125
9397706	ALX	Spiked Blank	Available (NH4OAc) Potassium (K)	2019/04/30		99	%	80 - 120
9397706	ALX	Method Blank	Available (NH4OAc) Potassium (K)	2019/04/30	<2.0		mg/kg	
9397706	ALX	RPD [VO4894-01]	Available (NH4OAc) Potassium (K)	2019/04/30	1.2		%	35
9397716	ALX	Matrix Spike [VO4872-01]	Soluble Boron (B)	2019/04/30		96	%	75 - 125
			Soluble Calcium (Ca)	2019/04/30		94	%	75 - 125
			Soluble Magnesium (Mg)	2019/04/30		98	%	75 - 125
			Soluble Sodium (Na)	2019/04/30		90	%	75 - 125
			Soluble Potassium (K)	2019/04/30		99	%	75 - 125
9397716	ALX	QC Standard	Soluble Calcium (Ca)	2019/04/30		96	%	75 - 125
			Soluble Magnesium (Mg)	2019/04/30		100	%	75 - 125
			Soluble Sodium (Na)	2019/04/30		107	%	75 - 125
			Soluble Potassium (K)	2019/04/30		110	%	75 - 125
9397716	ALX	Spiked Blank	Soluble Boron (B)	2019/04/30		98	%	80 - 120
			Soluble Calcium (Ca)	2019/04/30		95	%	80 - 120
			Soluble Magnesium (Mg)	2019/04/30		98	%	80 - 120
			Soluble Sodium (Na)	2019/04/30		100	%	80 - 120
			Soluble Potassium (K)	2019/04/30		100	%	80 - 120
9397716	ALX	Method Blank	Soluble Boron (B)	2019/05/01	<0.10		mg/L	
			Soluble Calcium (Ca)	2019/05/01	<1.5		mg/L	
			Soluble Magnesium (Mg)	2019/05/01	<1.0		mg/L	
			Soluble Sodium (Na)	2019/05/01	<2.5		mg/L	
			Soluble Potassium (K)	2019/05/01	<1.3		mg/L	
			Soluble Sulphate (SO4)	2019/05/01	<5.0		mg/L	
9397716	ALX	RPD [VO4877-01]	Soluble Boron (B)	2019/05/01	NC		%	30
			Soluble Calcium (Ca)	2019/05/01	8.0		%	30
			Soluble Magnesium (Mg)	2019/05/01	9.9		%	30
			Soluble Sodium (Na)	2019/05/01	10		%	30

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Soluble Potassium (K)	2019/05/01	1.4		%	30
			Soluble Sulphate (SO4)	2019/05/01	3.7		%	30
9399041	FZ	QC Standard	Soluble Conductivity	2019/05/01		97	%	75 - 125
9399041	FZ	Spiked Blank	Soluble Conductivity	2019/05/01		99	%	90 - 110
9399041	FZ	Method Blank	Soluble Conductivity	2019/05/01	<0.020		dS/m	
9399041	FZ	RPD [VO4877-01]	Soluble Conductivity	2019/05/01	0.10		%	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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Maxxam Job #: B930137
Report Date: 2019/05/21

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
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NOTIFICATION LOG

No Reportable Regulation Exceedences Noted.

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Maxxam Job #: B930137
Report Date: 2019/05/21

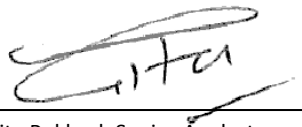
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE
Sampler Initials: AM

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



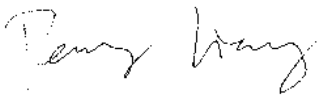
Dennis Ngondu, B.Sc., P.Chem., QP, Supervisor, Organics



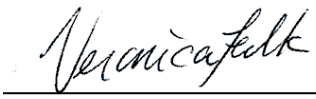
Gita Pokhrel, Senior Analyst



Janet Gao, B.Sc., QP, Supervisor, Organics



Harry (Peng) Liang, Senior Analyst



Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

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CHAIN OF CUSTODY RECORD

M 085256

Invoice Information		Report Information (if differs from invoice)		Project Information		Turnaround Time (TAT) Required	
Company:	Clifton Associates	Company:		Quotation #:	S81738	☑ 5 - 7 Days Regular (Most analyses)	
Contact Name:	Terryn Kuzyk	Contact Name:		P.O. #/ AFE#:		PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS	
Address:	2222 – 30 Ave. NE Calgary. AB	Address:				Rush TAT (Surcharges will be applied)	
				Project #:	CG3198.1	☐ Same Day ☐ 2 Days	
Phone:	403-990-8916	Phone:		Site Location:	Strathmore	☐ 1 Day ☐ 3-4 Days	
Email:	terryn_kuzyk@clifton.ca	Email:		Site #:		Date Required:	
Copies:	austin_mei@clifton.ca	Copies:		Sampled By:	Austin	Rush Confirmation #:	

Laboratory Use Only

	YES	NO	Cooler ID			
Seal Present		✓				
Seal Intact		✓	Temp	5	6	7
Cooling Media	✓					
	YES	NO	Cooler ID			
Seal Present		✓				
Seal Intact		✓	Temp	5	1	1
Cooling Media	✓					
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						

Depot Reception

Regulatory Criteria

☑ AT1
☐ CCME
☐ Drinking Water
☐ D50 (Drilling Waste)
☐ Saskatchewan
☐ Other:

Special Instructions

Analysis Requested

	Sample Identification	Depth (Unit)	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# of containers	BTEX F1 ☐ VOC ☑	BTEX F1-F2	BTEX F1-F4	Routine Water	Regulated Metals ☐ Tot ☐ Diss	Mercury ☐ Total ☐ Dissolved	Salinity 4	Sieve (75 micron)	Texture (% Sand, Silt, Clay)	Basic Class II Landfill	HOLD - DO NOT ANALYZE
1	101-3		2019/04/17		soil	4	✓		✓		✓		✓				
2	101-5		2019/04/17			4	✓		✓		✓		✓				
3	102-1		2019/04/22			4	✓		✓		✓		✓				
4	102-4		2019/04/22			4	✓		✓		✓		✓				
5	103-1		2019/04/17			4	✓		✓		✓		✓				
6	103-5		2019/04/17			4	✓		✓		✓		✓				
7	104-3		2019/04/17			4	✓		✓		✓		✓				
8	104-7		2019/04/17			4	✓		✓		✓		✓				
9	105-5		2019/04/22			4	✓		✓		✓		✓				
10	105-9		2019/04/22		soil	4	✓		✓		✓		✓				

Please indicate Filtered, Preserved or Both (F, P, F/P)

Relinquished by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Received by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)
Austin Mei	2019/04/24	16:30	Amita Sharma	2019/04/25	05:30

25-Apr-19 05:30
Linsay Sunderman
B930137
DH7 INS-0149

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AB ECD-00331/7

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CHAIN OF CUSTODY RECORD

M 021485

Report Information

Company: Clifton
Contact: Terryn Kuzyk
Phone: 403-990-8916
Email: terry_kuzyk@clifton.ca
Sampled by: Austin

Comments

Same as CoC: 085256

Project/LSD: CG3198.1

Special Instructions

Analysis Requested

	Sample Identification	Depth (Unit)	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# of containers	BTEX F1 ☐ VOC ☑	BTEX F1-F2	BTEX F1-F4	Routine Water	Regulated Metals Tot ☐ Diss ☐	Mercury Total ☐ Dissolved ☐	Salinity 4	Sieve (75 micron)	Texture (% Sand, Silt, Clay)	Basic Class II Landfill	PAHs	Herb / Pest	Nutrients	HOLD - DO NOT ANALYZE
11	106-2		2017/04/17		Soil	4	✓		✓		✓		✓							
12	106-5		↓		↓	4	✓		✓		✓		✓							
13	107-3					4	✓		✓		✓		✓							
14	107-5		↓		Soil	4	✓		✓		✓		✓							
15	Trip Blank 1		2017/04/17		MeOH	2	✓													
16	108-2		2017/04/22		Soil	4	✓		✓		✓						✓	✓	✓	
17	108-5		↓		↓	4	✓		✓		✓						✓	✓	✓	
18	109-2					4	✓		✓		✓						✓	✓	✓	
19	109-5					4	✓		✓		✓						✓	✓	✓	
20	110-2					4	✓		✓		✓						✓	✓	✓	
21	110-5					4	✓		✓		✓						✓	✓	✓	
22	111-2					4	✓		✓		✓						✓	✓	✓	
23	111-5					4	✓		✓		✓						✓	✓	✓	
24	112-2				↓	4	✓		✓		✓						✓	✓	✓	
25	112-4		↓		Soil	4	✓		✓		✓						✓	✓	✓	
26	Trip Blank 2		2017/04/22		MeOH	2	✓													
27																				
28																				
29																				
30																				

Please indicate Filtered, Preserved or Both (F, P, F/P) →

Relinquished by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Received by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)
Austin Mei	2019/04/24	16:30	AMITA SHARMA	2019/04/25	05:30

25-Apr-19 05:30
Linsay Sunderman
B930137
DH7 INS-0149

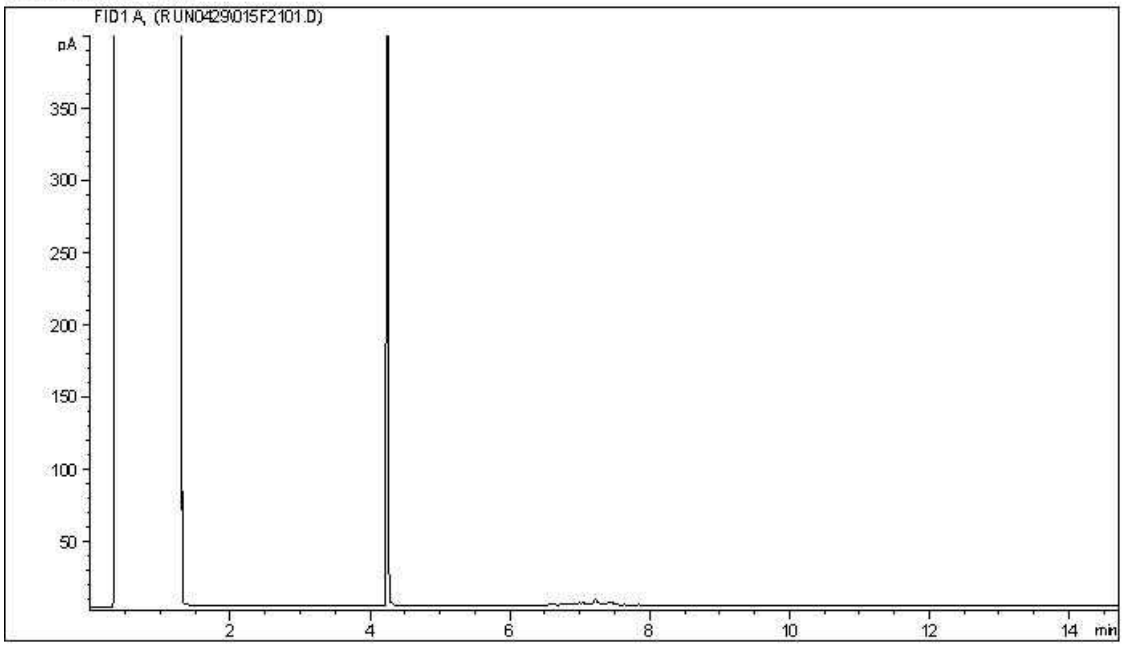
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Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4869

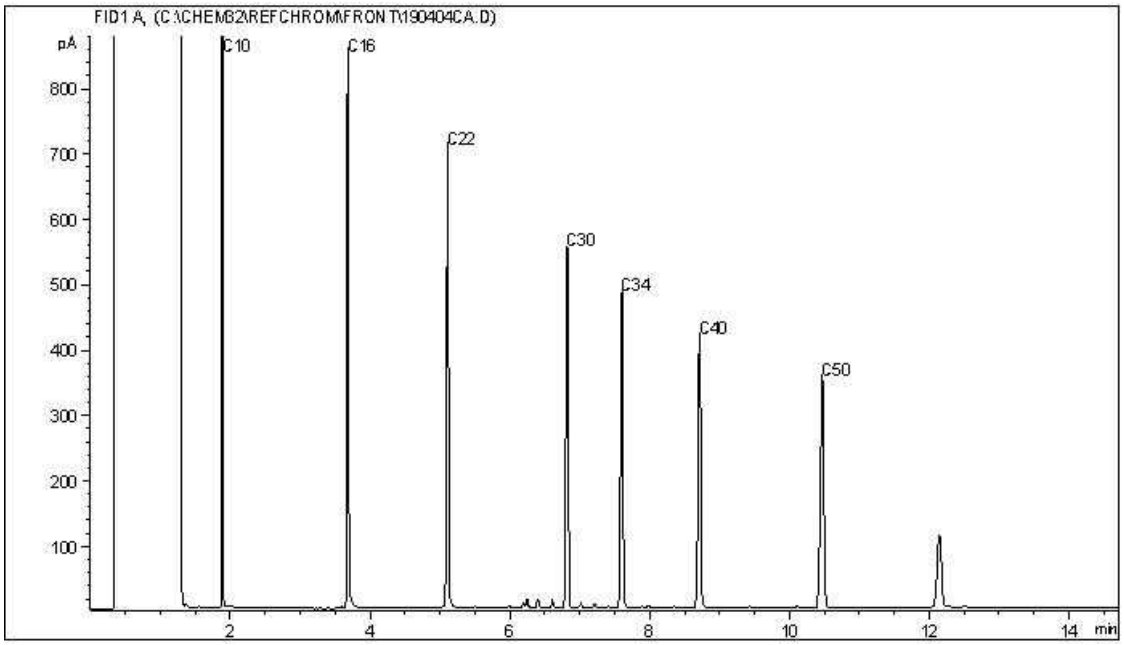
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 101-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

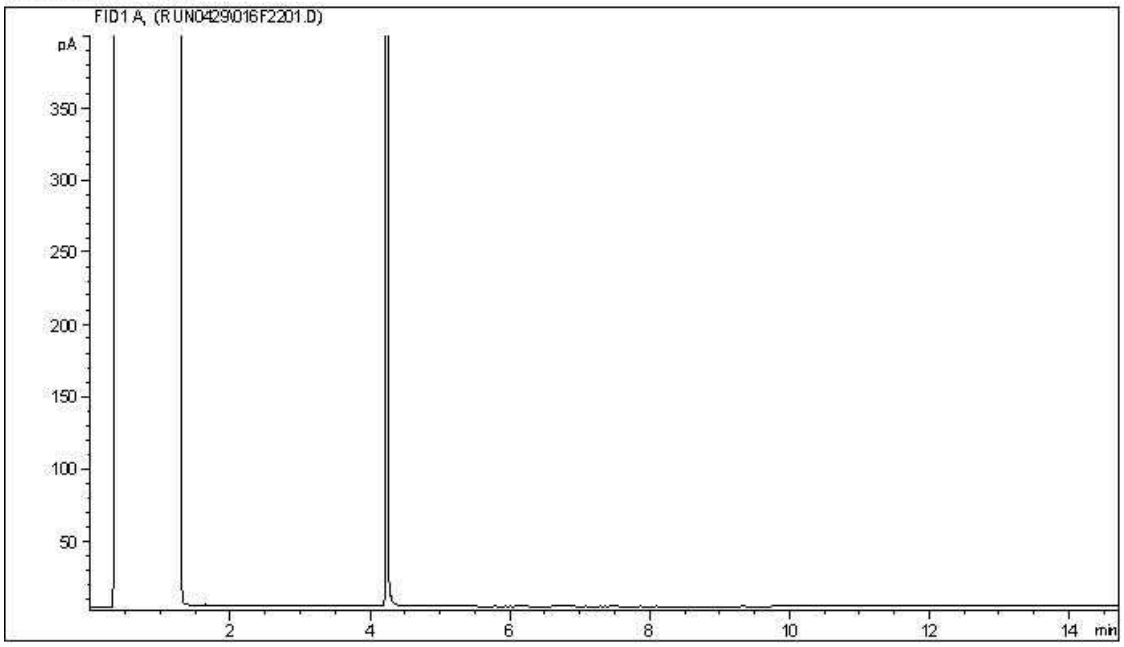
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4870

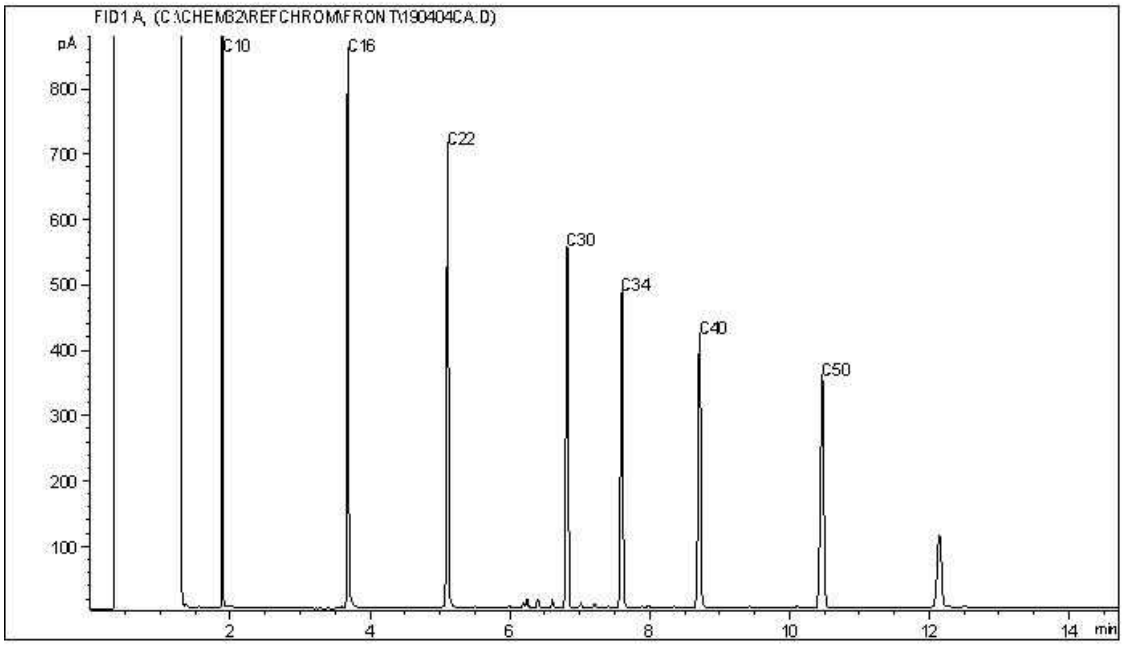
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 101-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

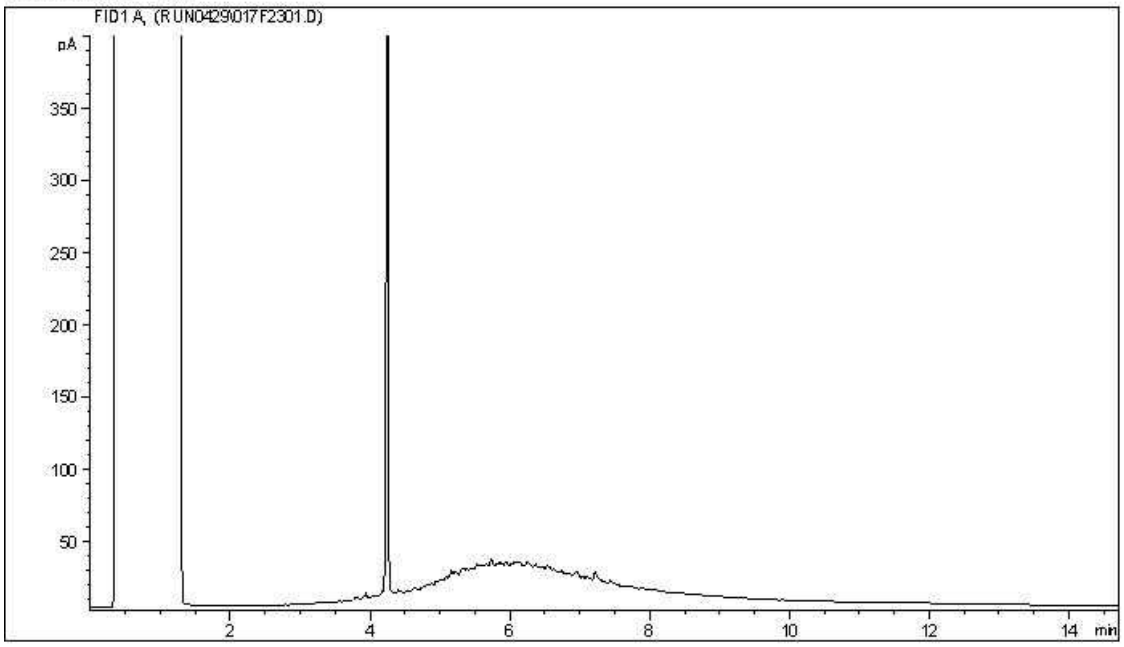
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Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4871

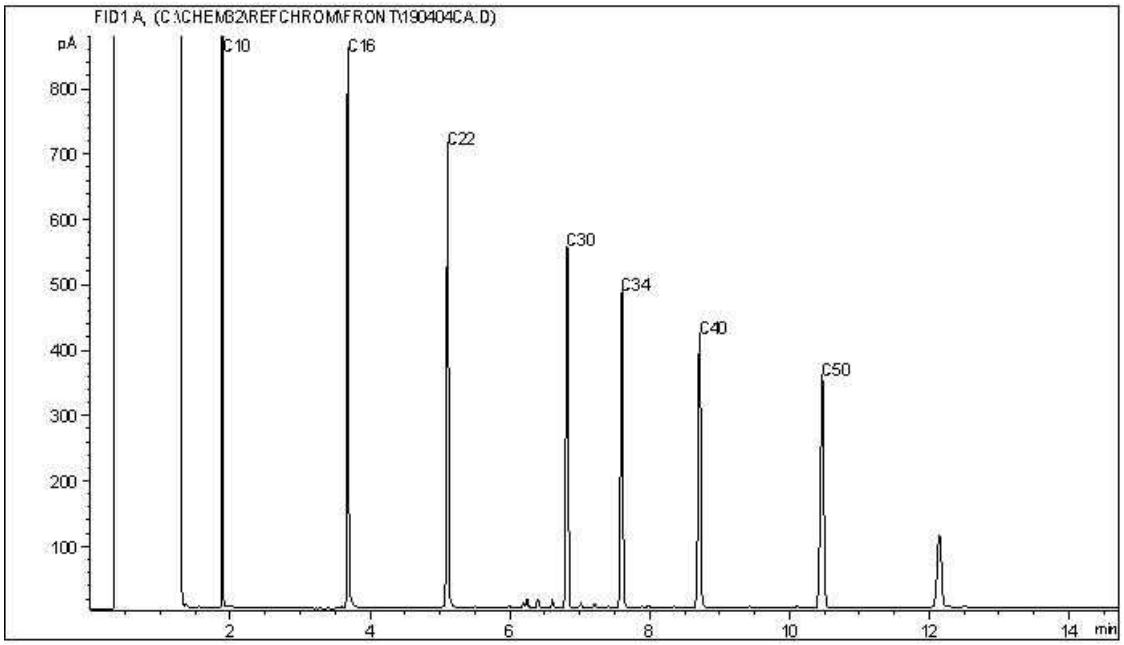
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 102-1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

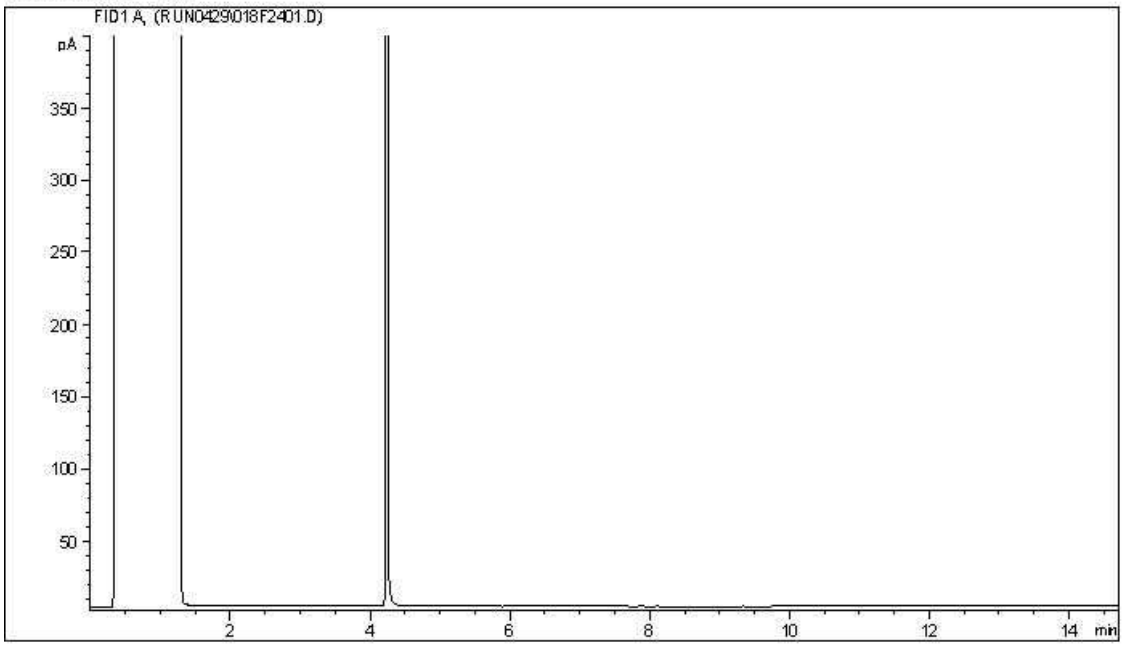
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4872

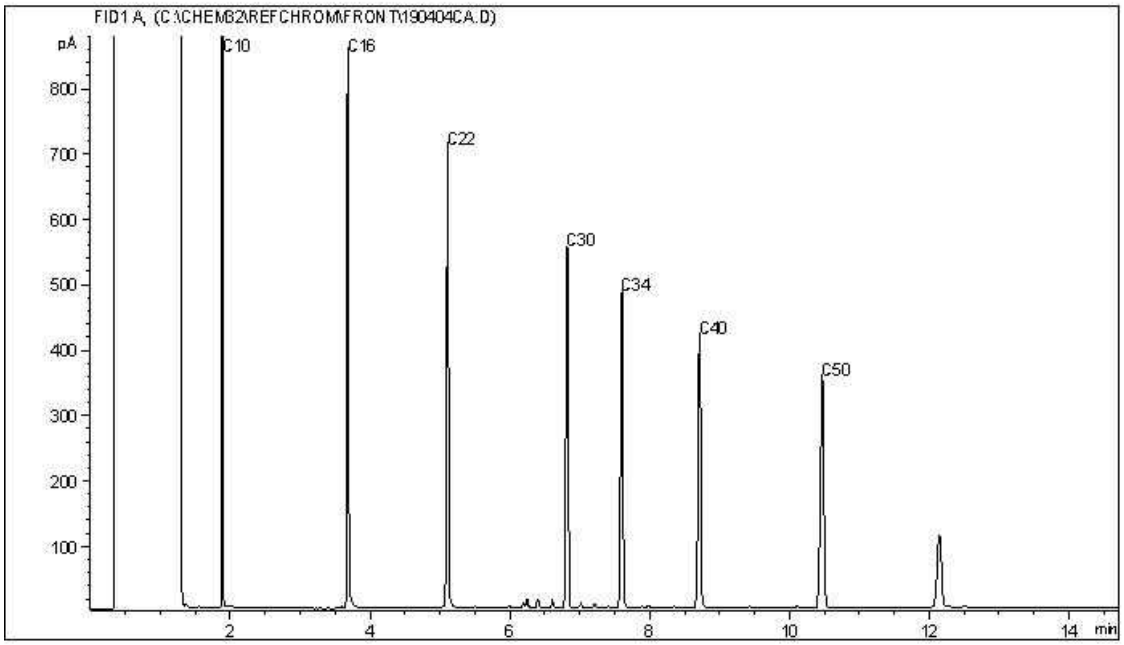
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 102-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

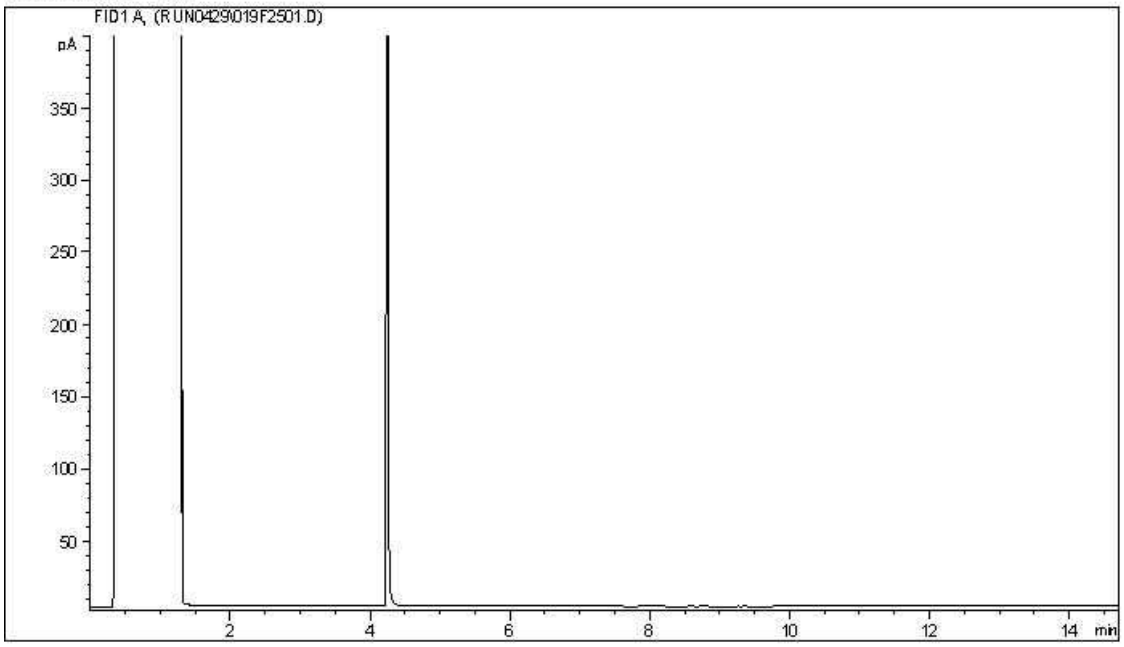
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Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4873

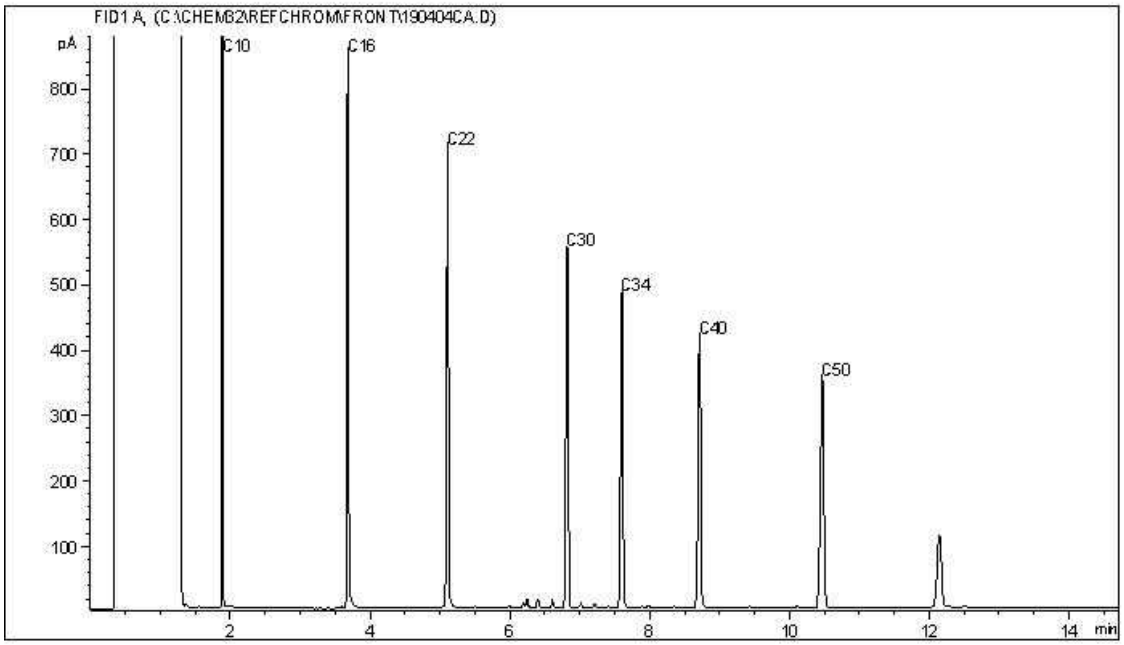
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 103-1

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

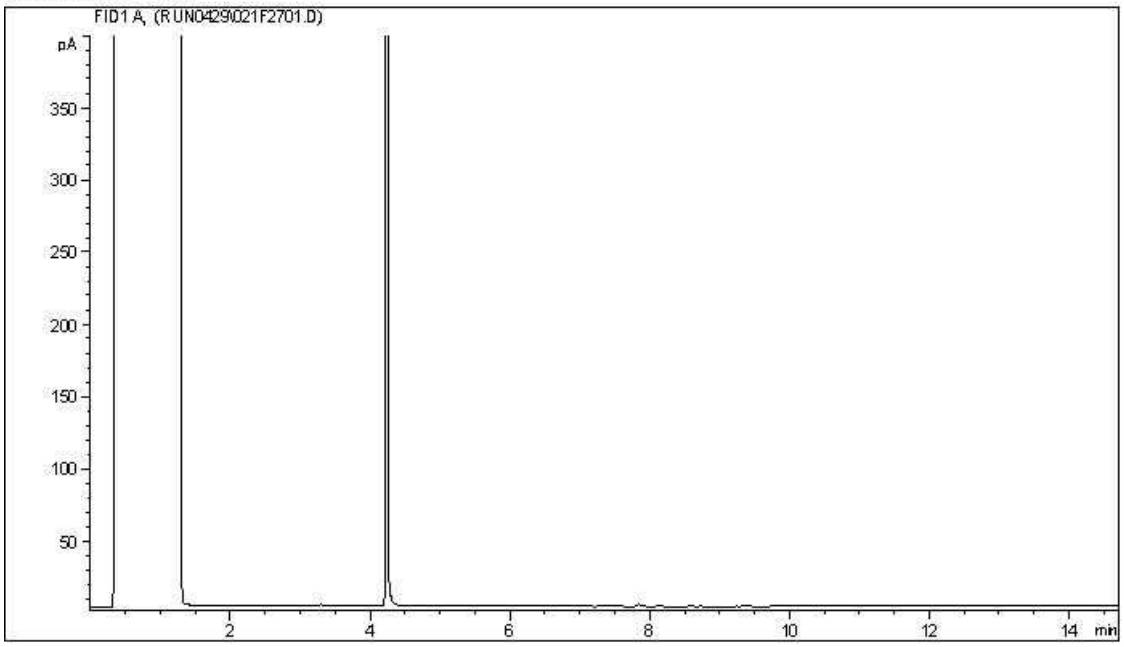
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4874

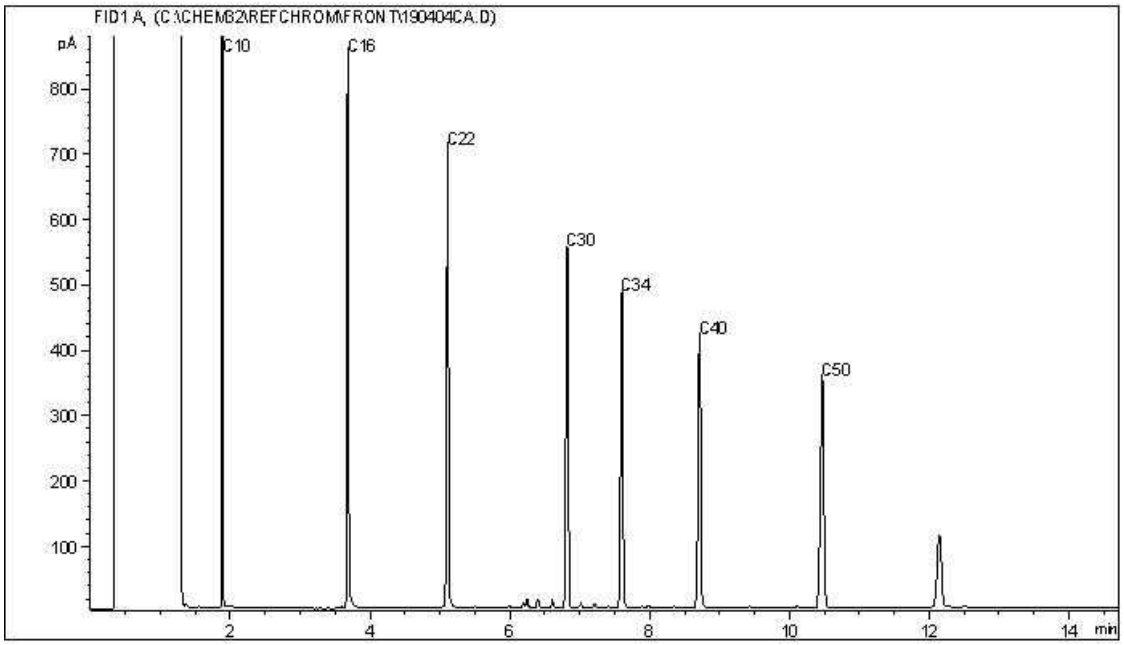
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 103-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

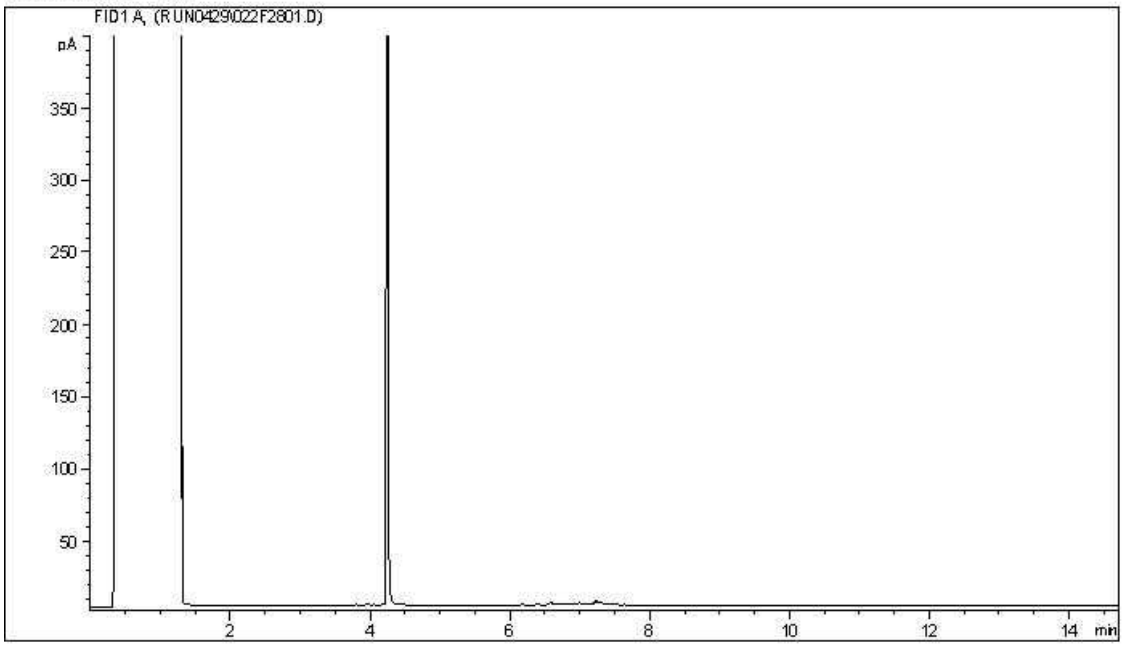
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4875

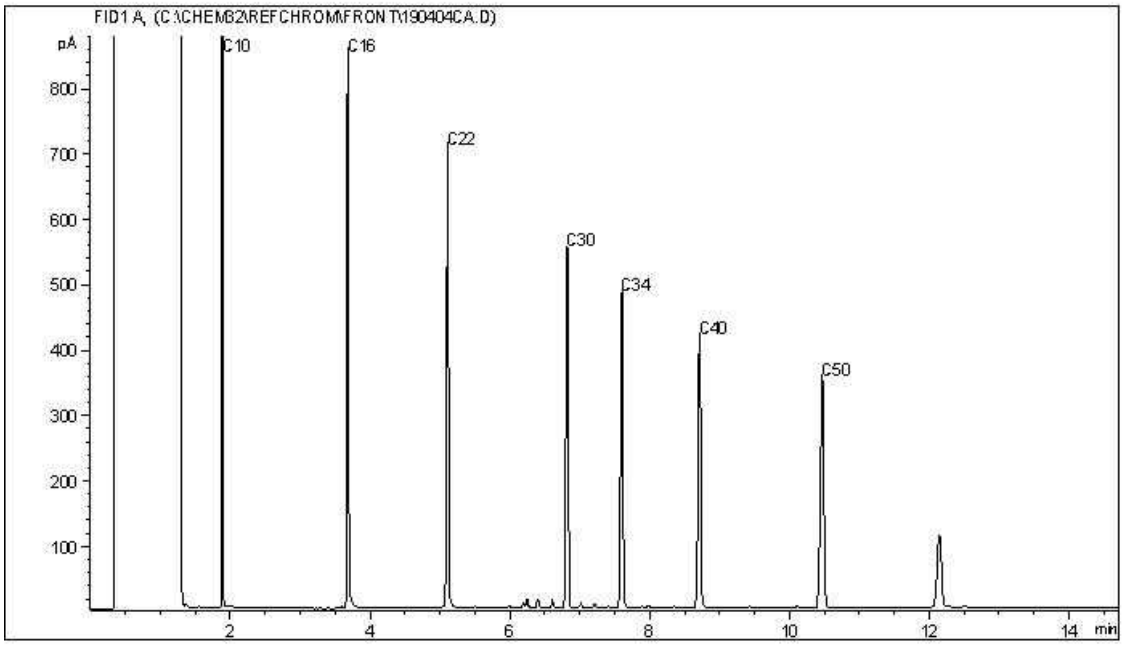
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 104-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



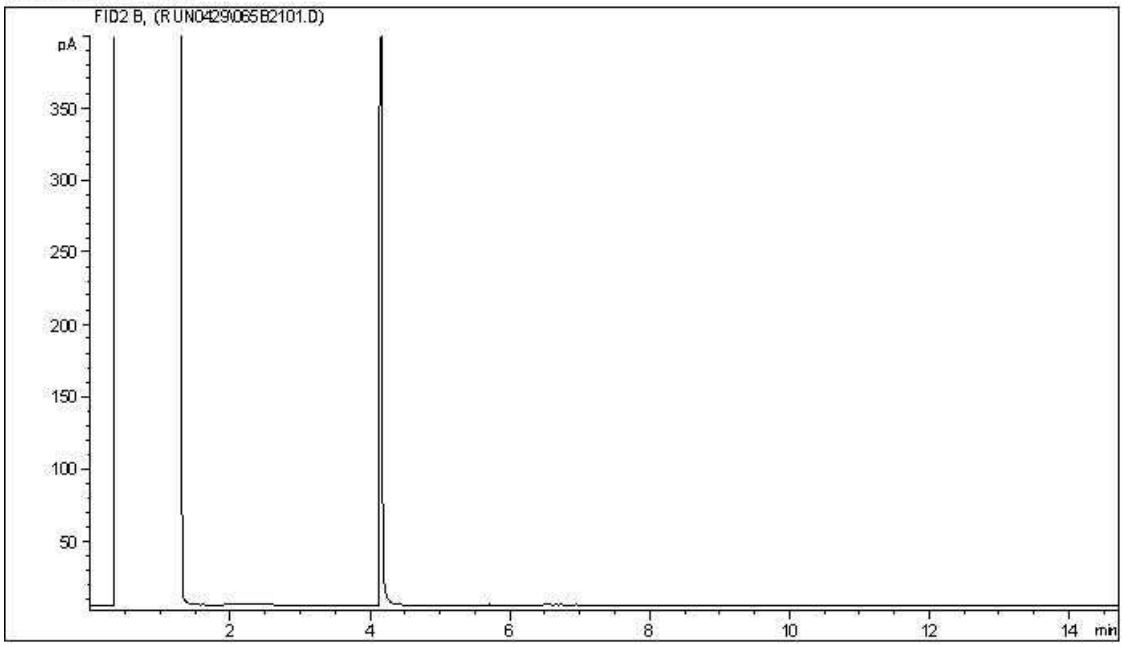
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

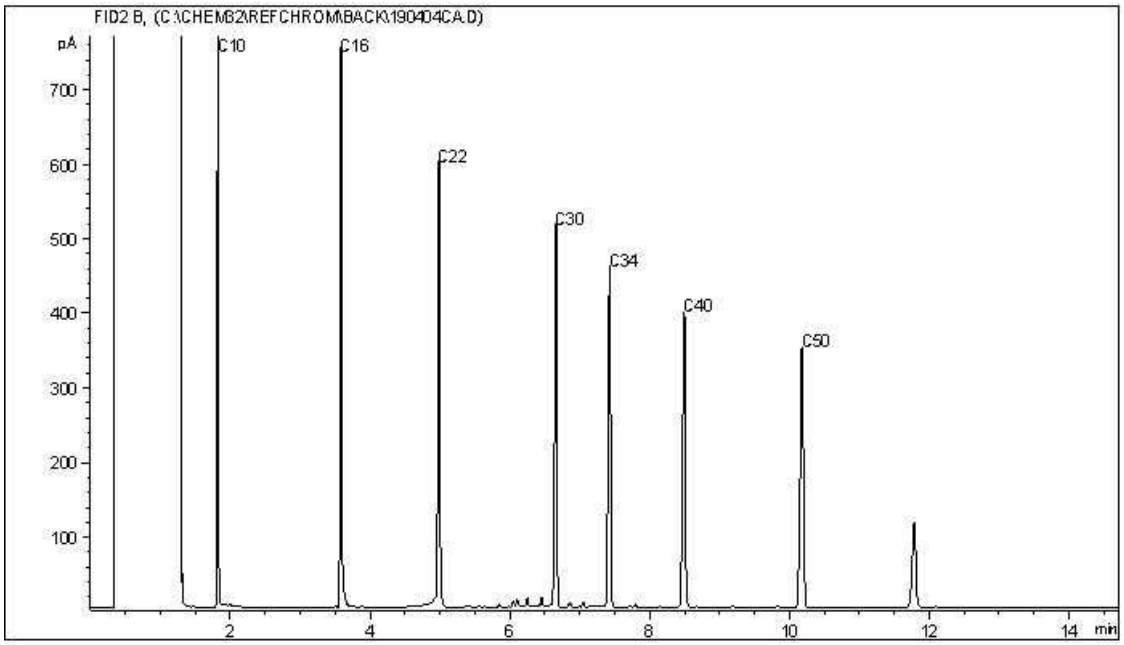
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

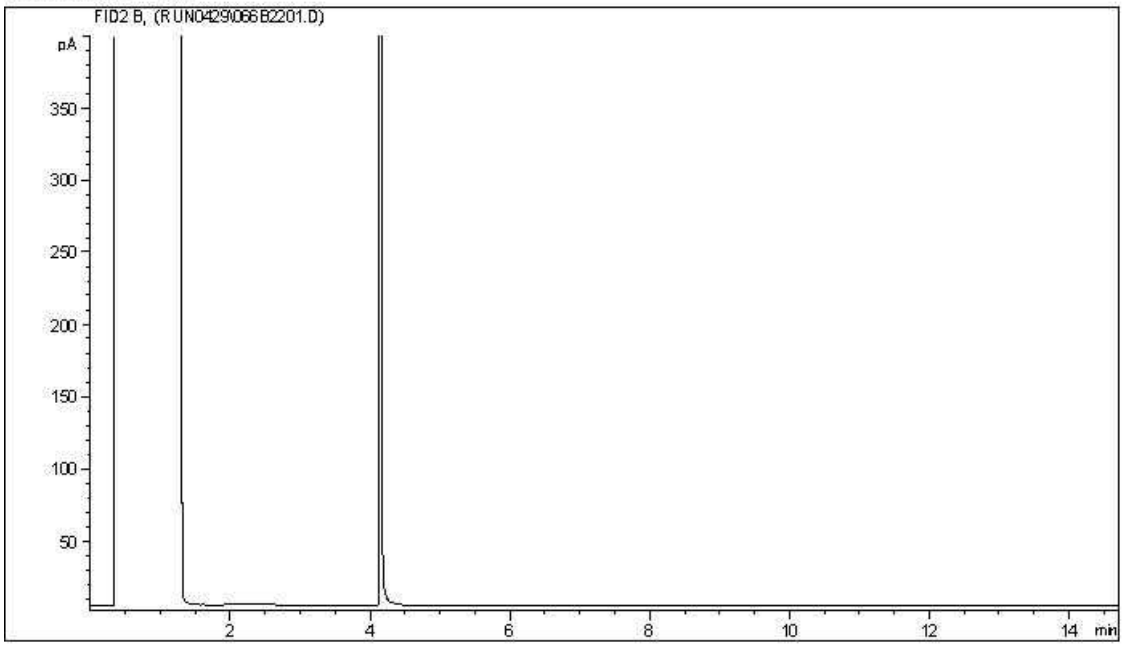
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4877

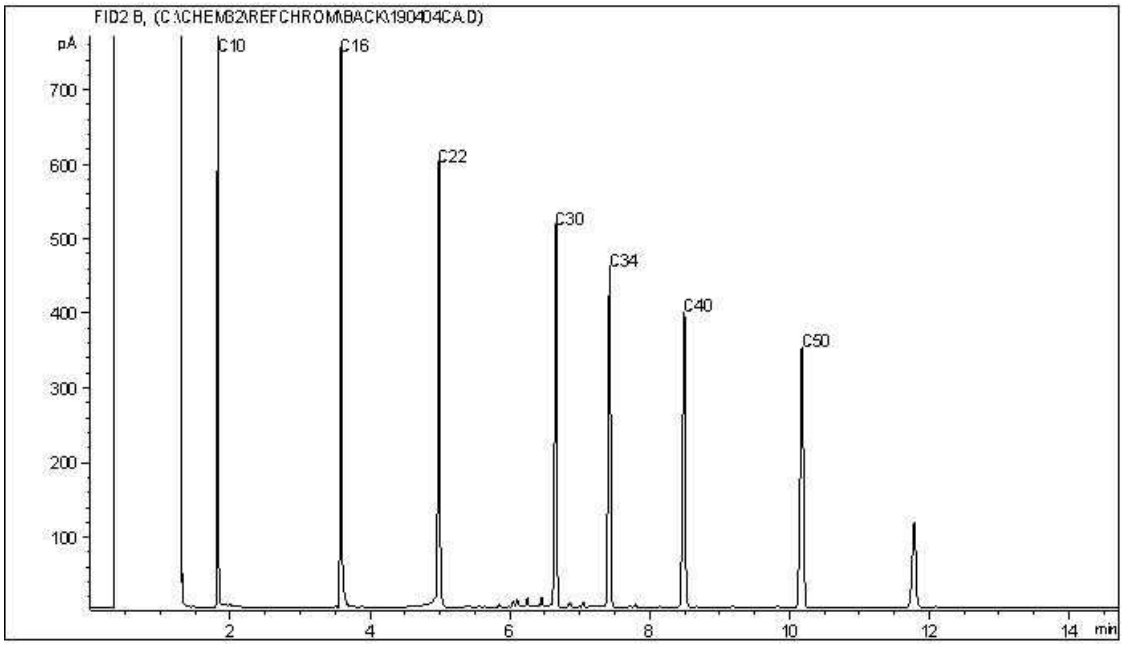
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 105-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

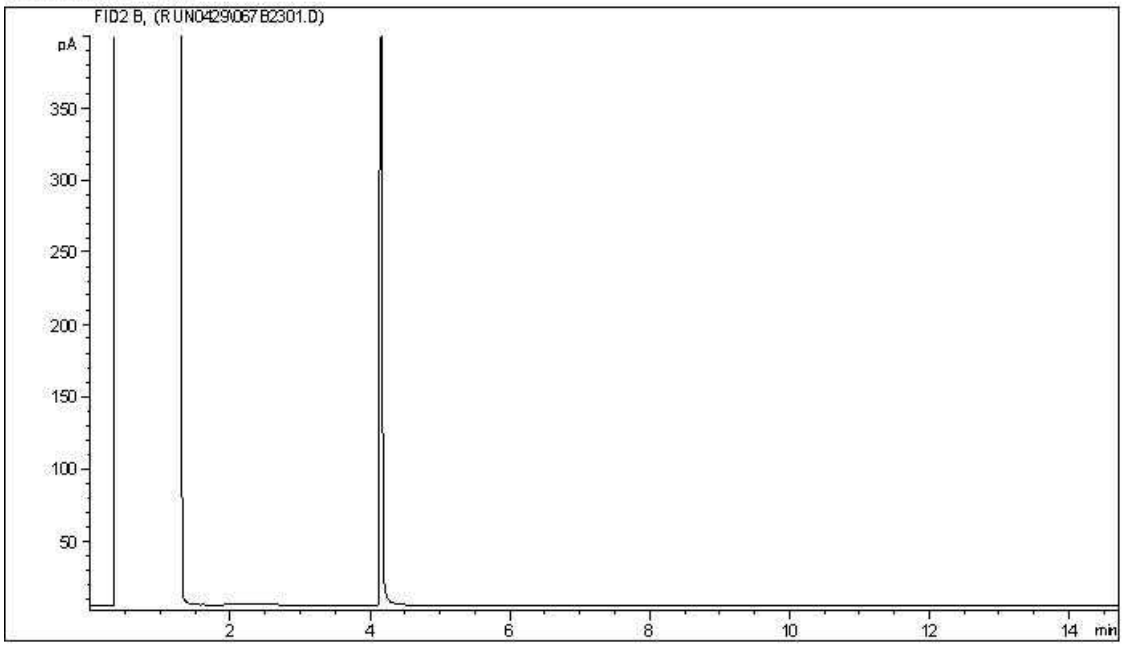
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4878

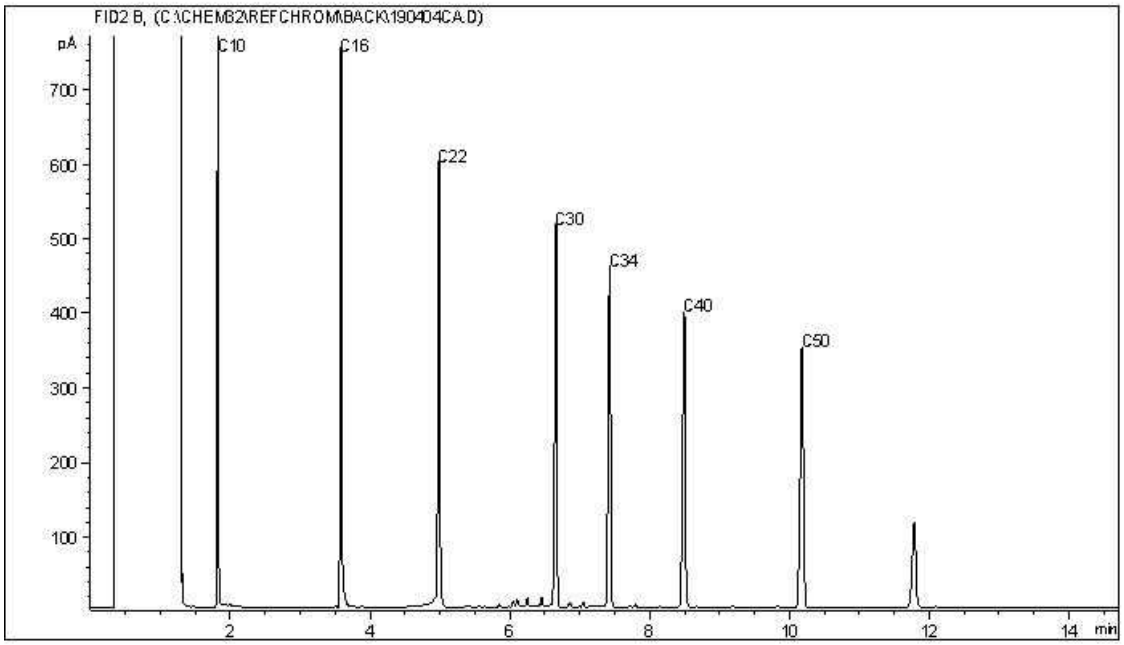
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 105-9

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

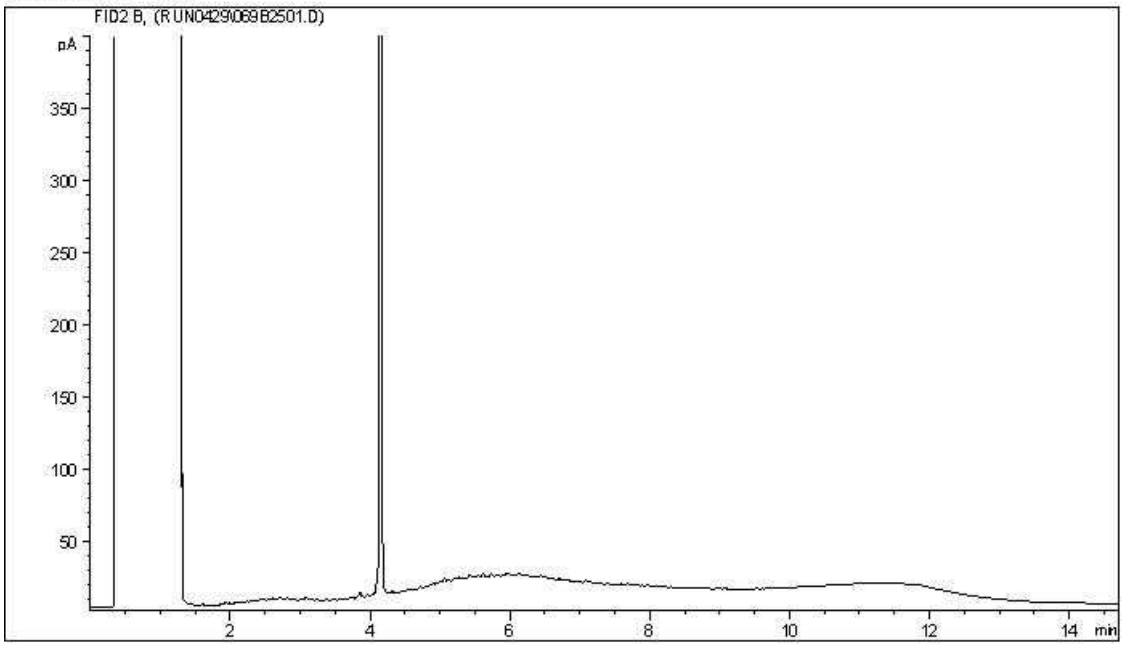
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4886

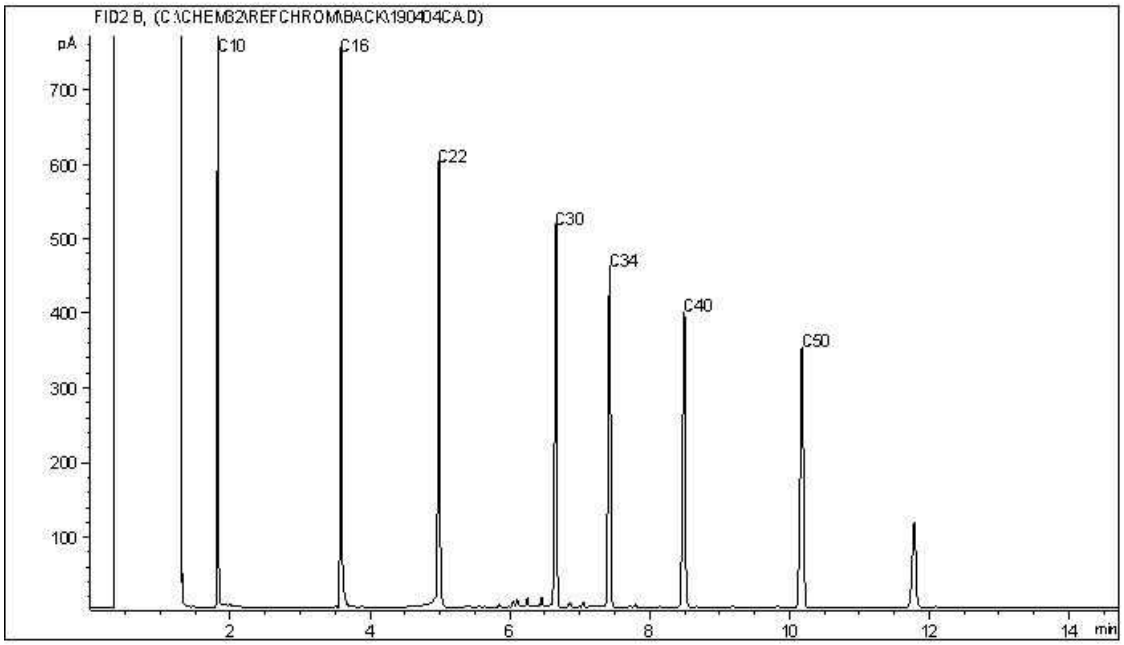
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 106-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

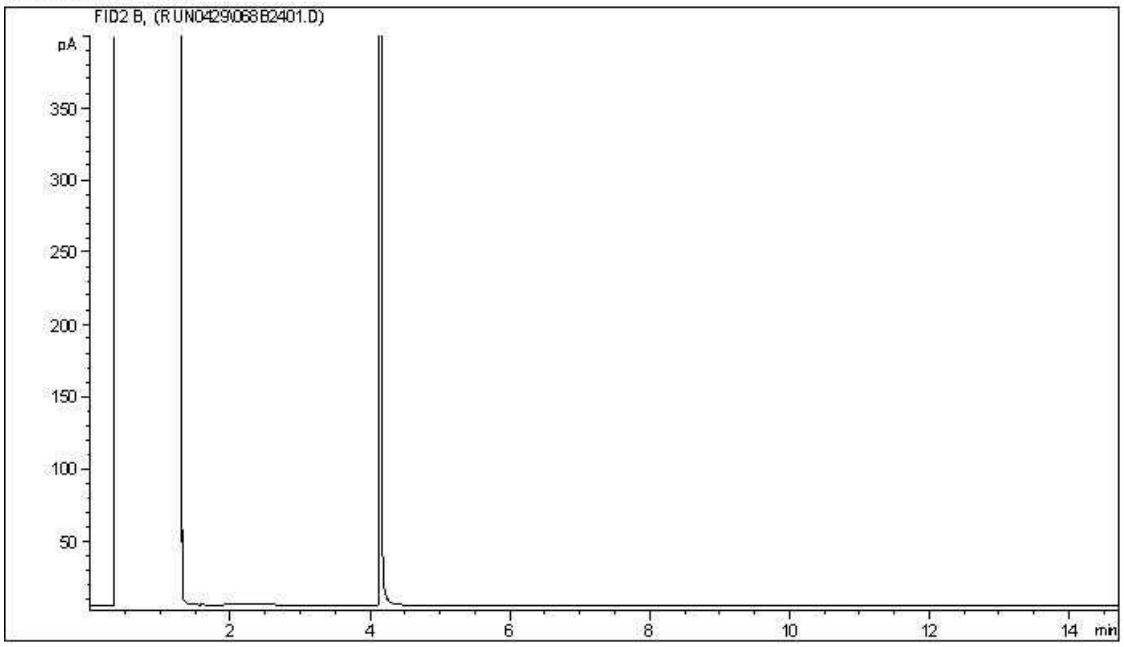
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4887

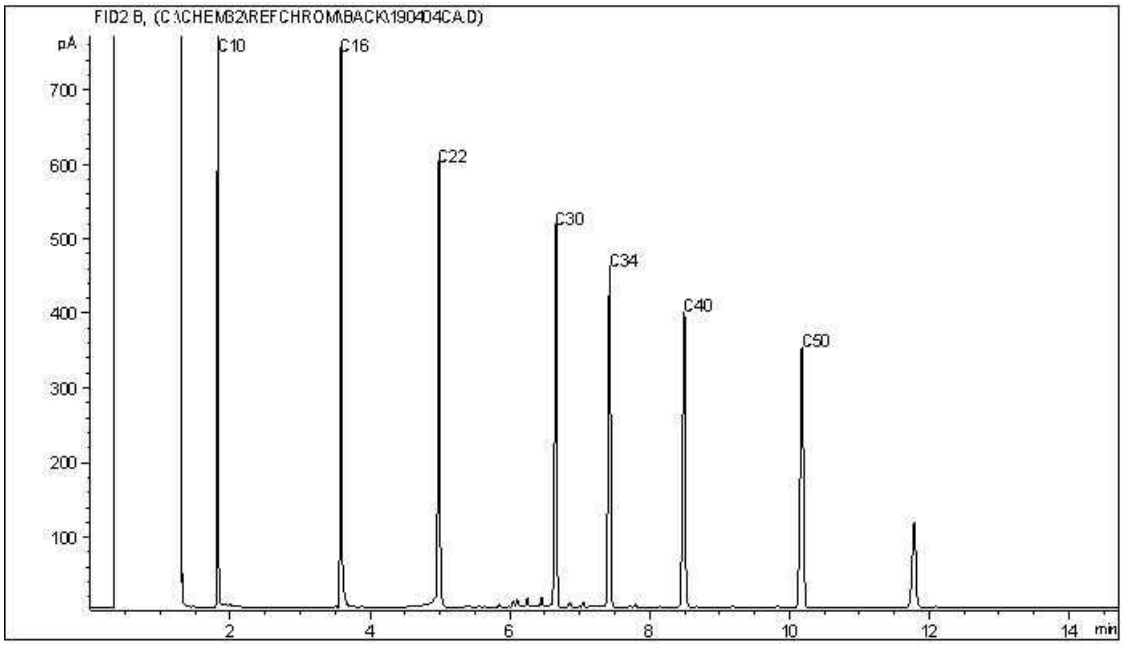
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 106-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

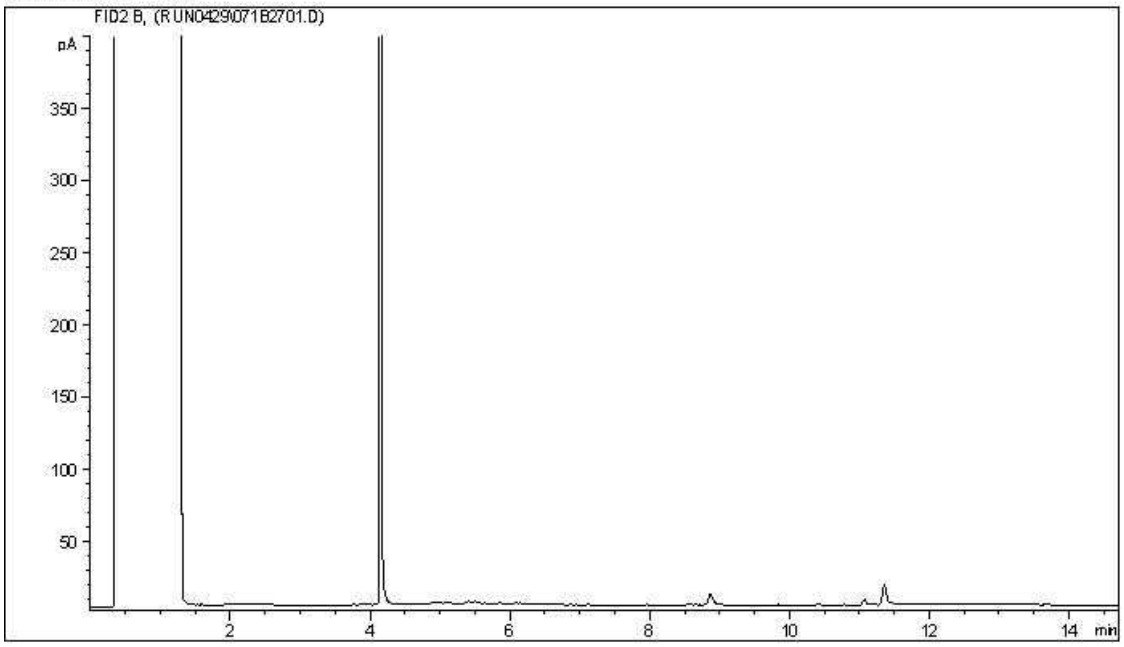
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4888

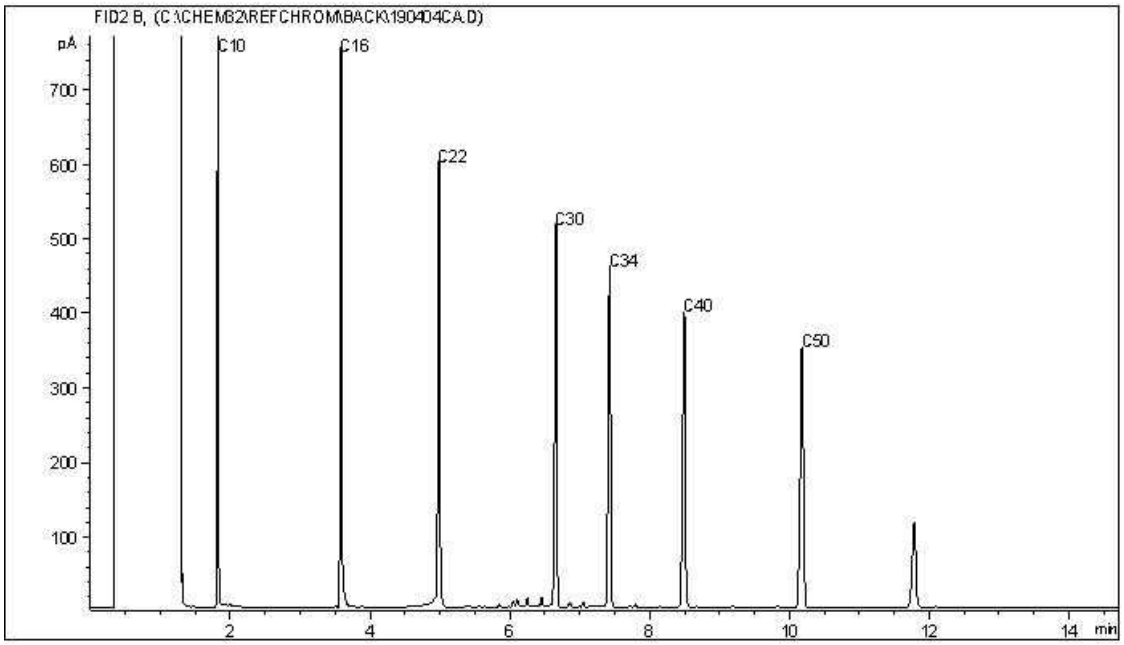
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 107-3

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

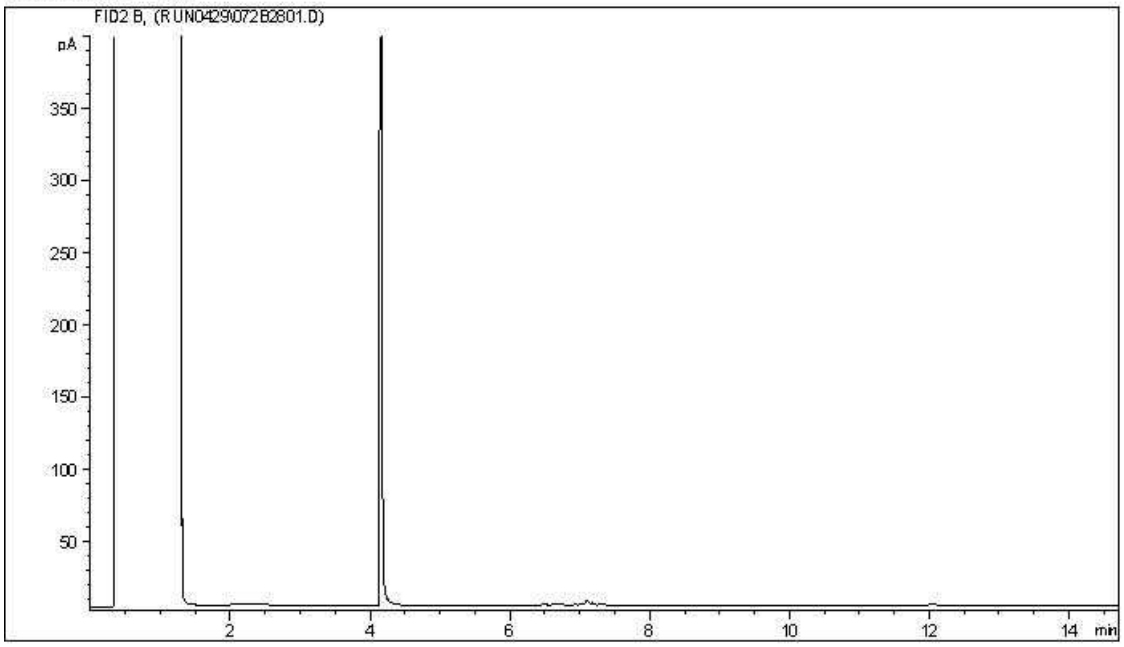
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4889

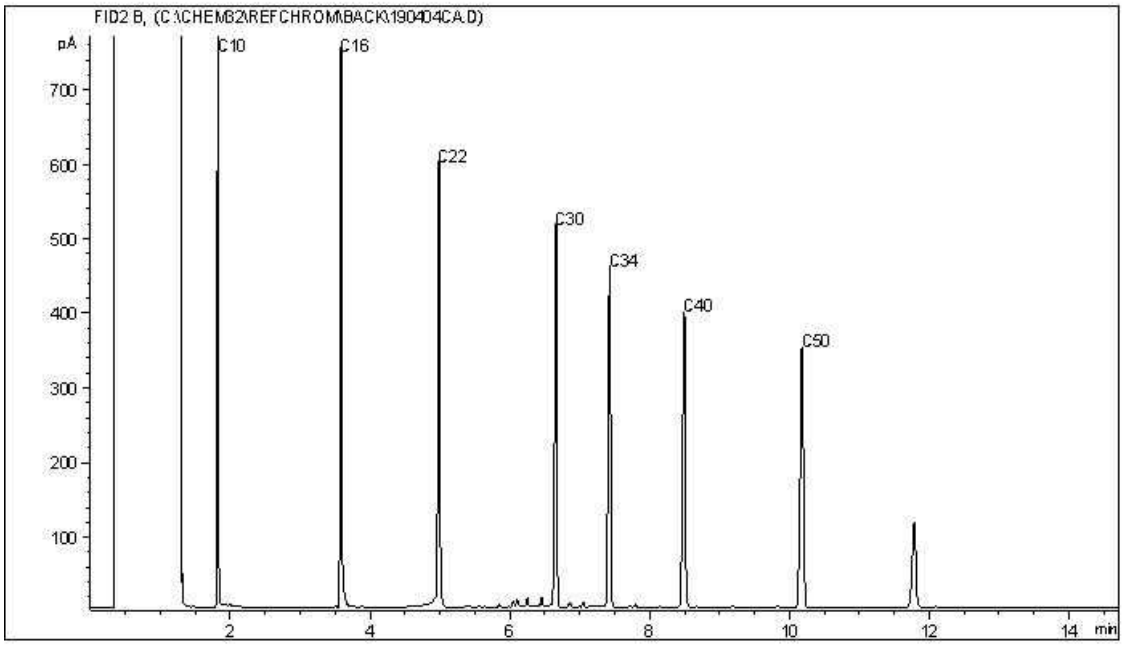
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 107-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

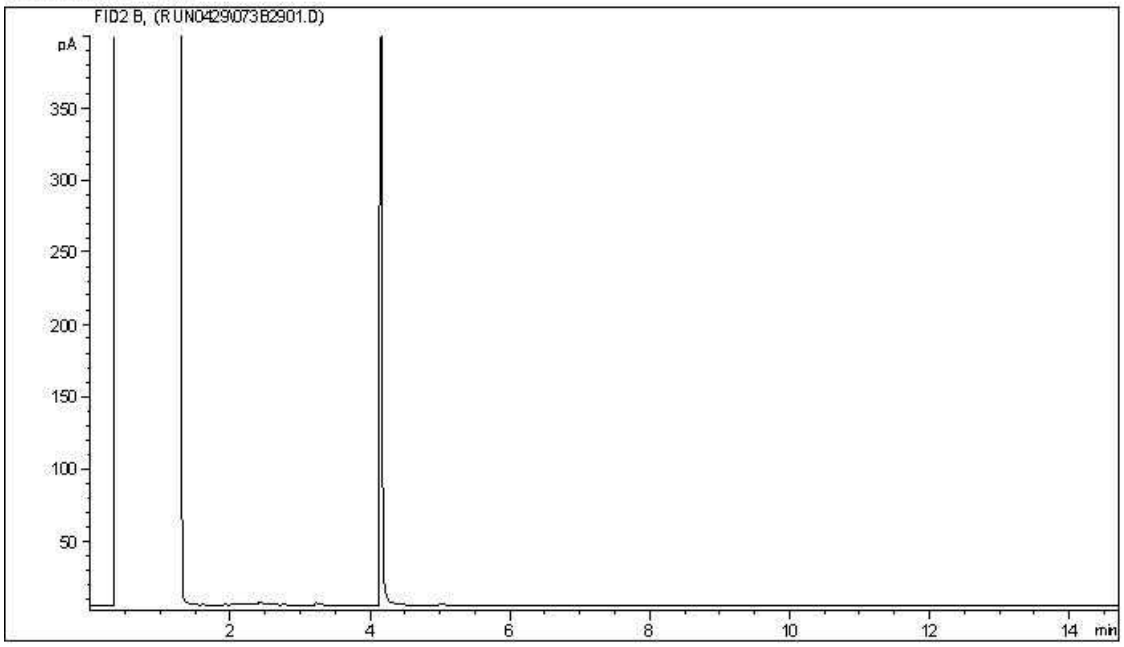
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4891

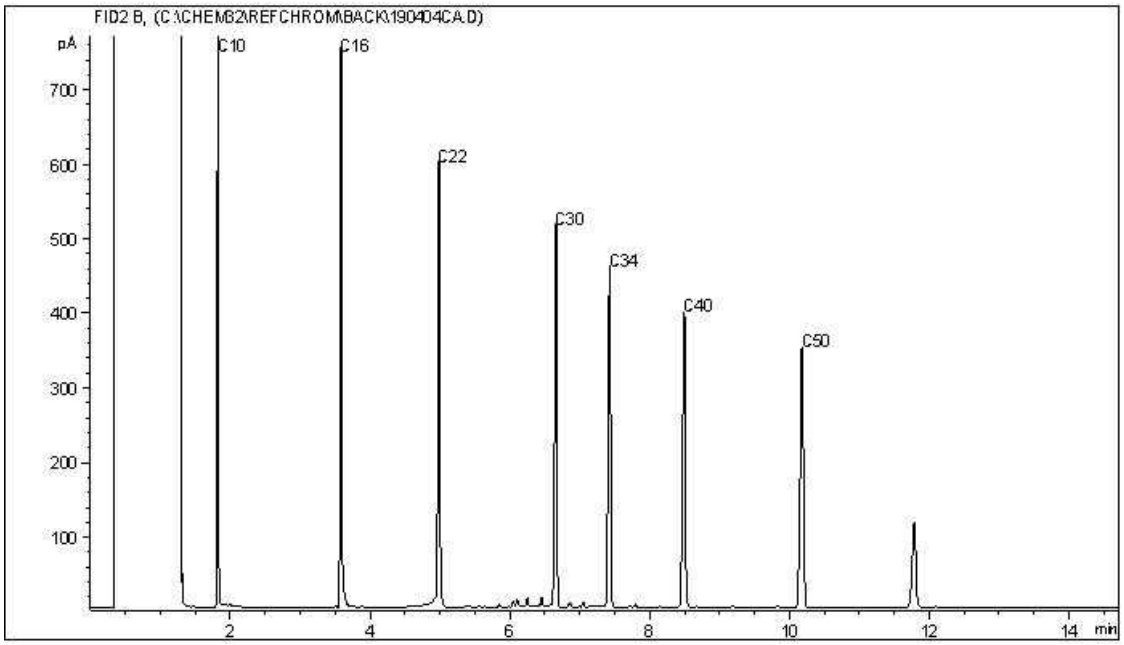
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 108-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

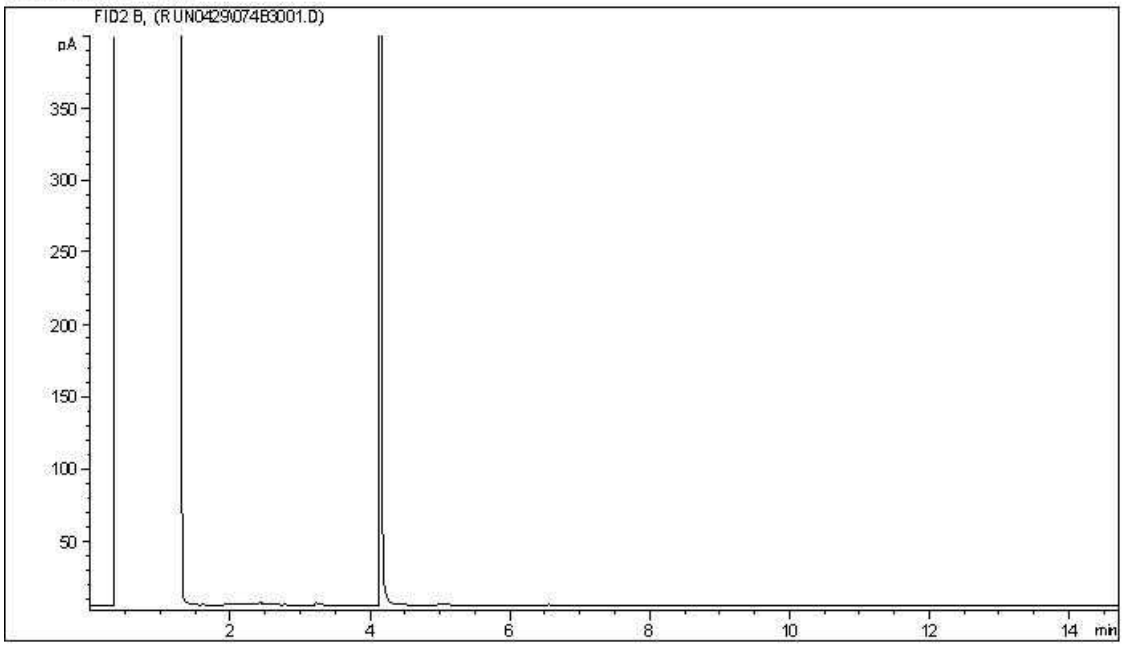
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
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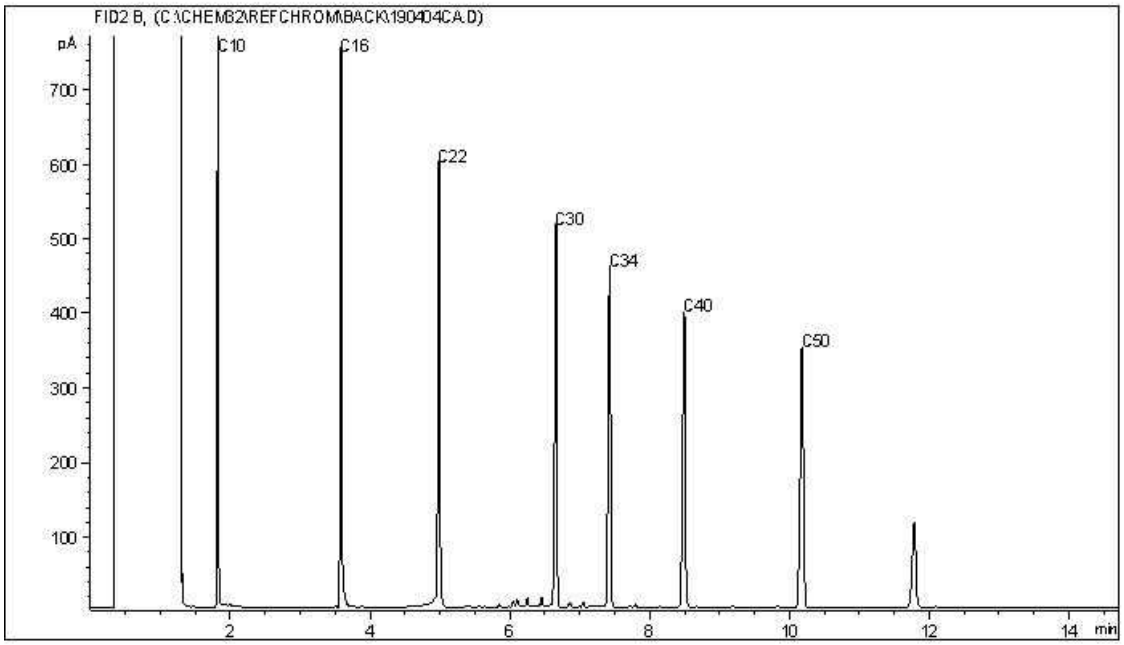
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 108-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

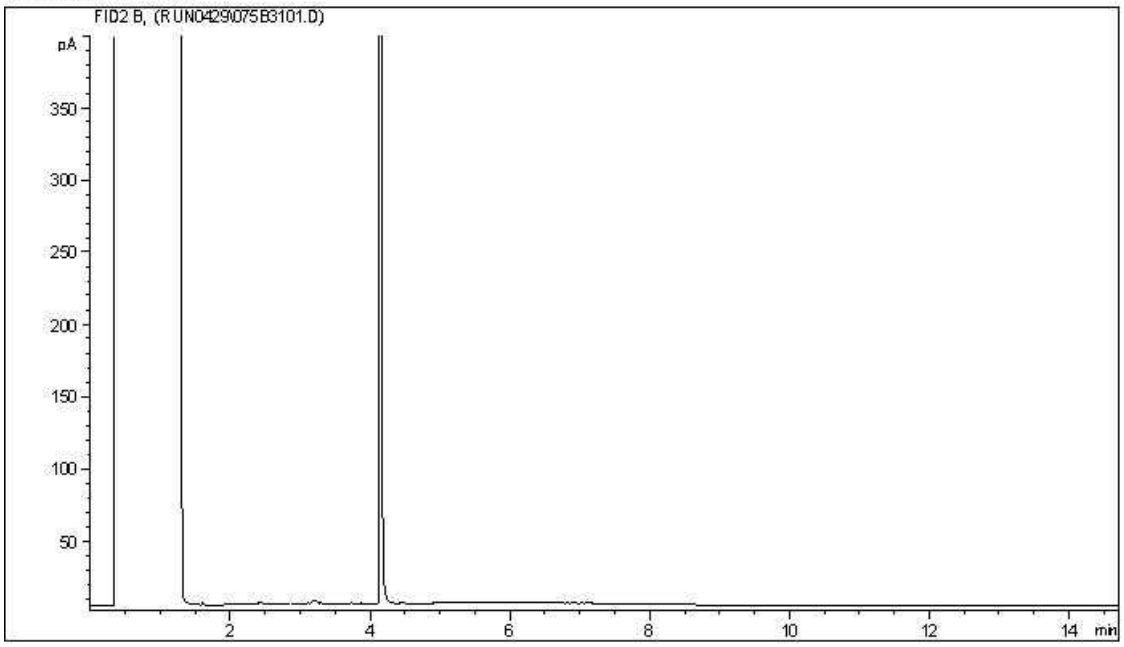
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

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Report Date: 2019/05/21
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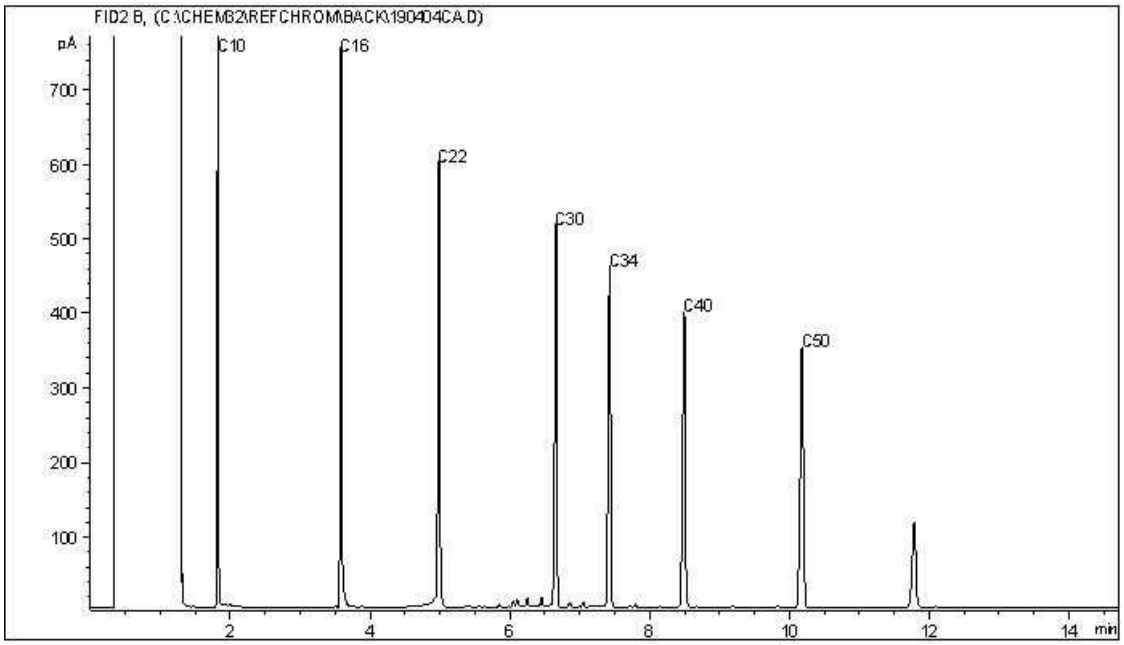
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 109-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

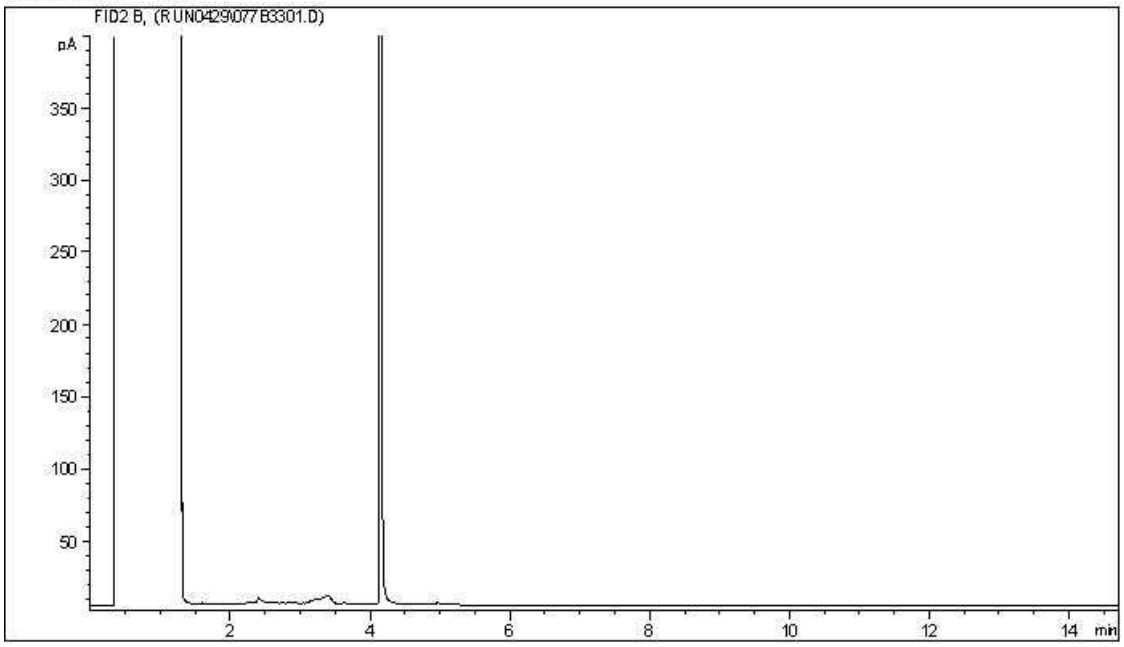
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4894

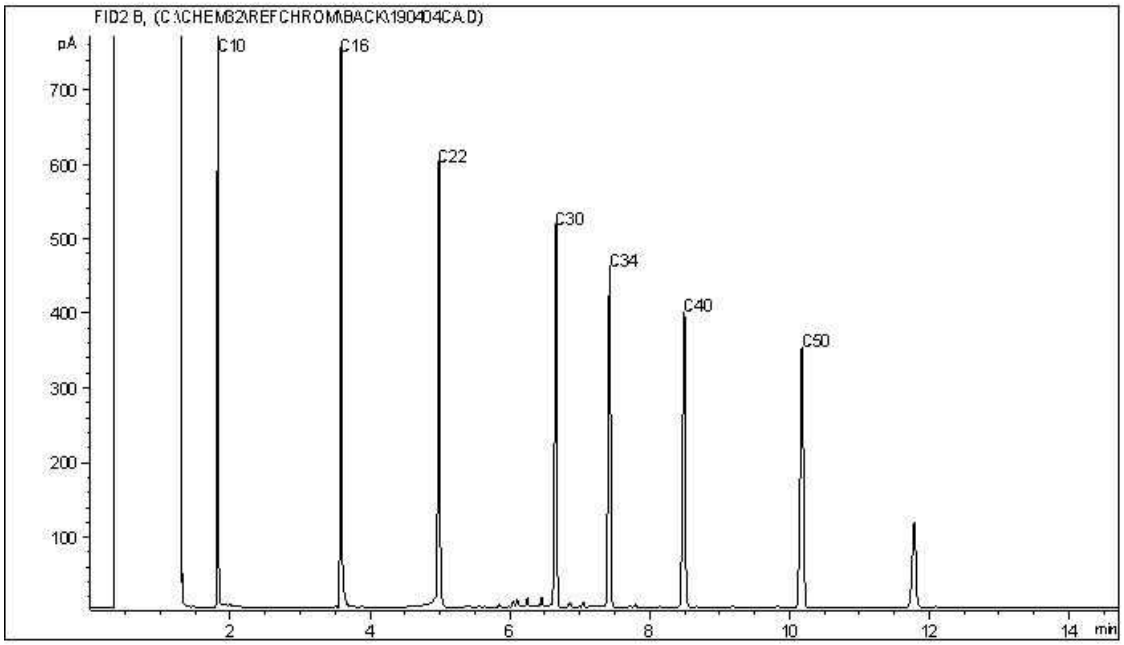
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 109-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

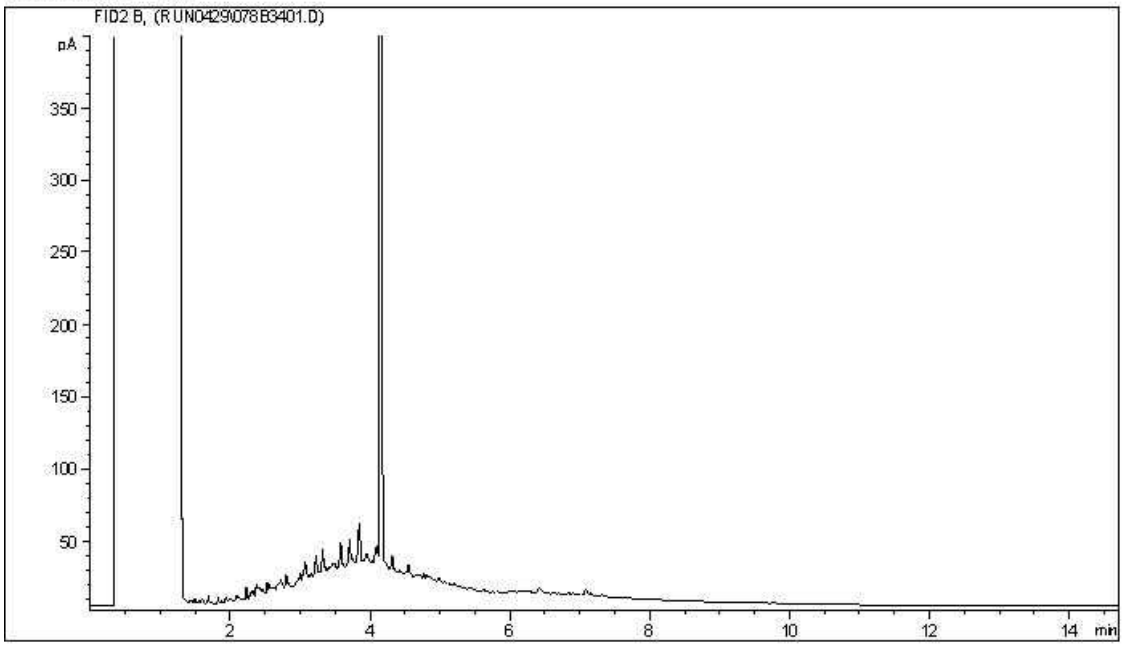
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Maxxam Job #: B930137
Report Date: 2019/05/21
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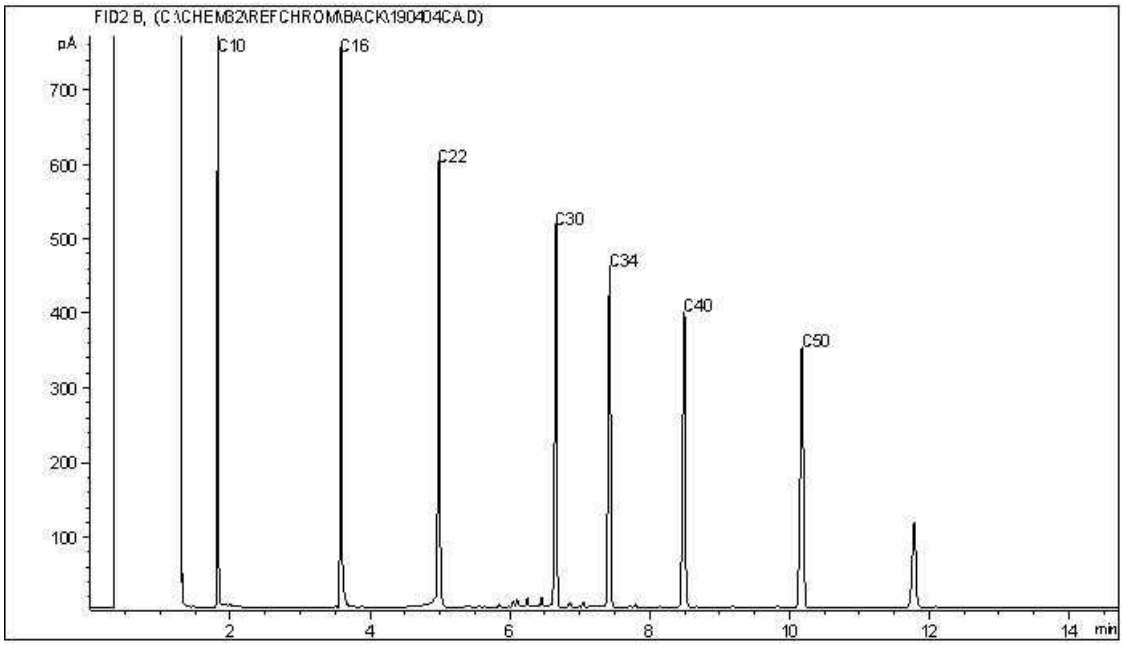
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 110-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

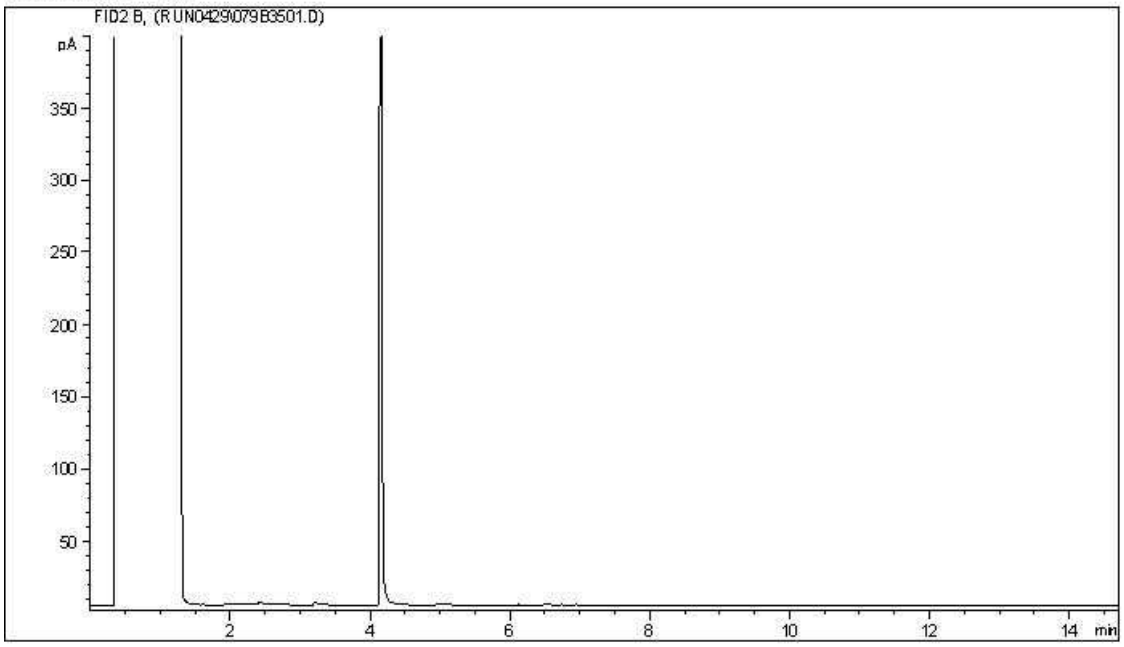
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4896

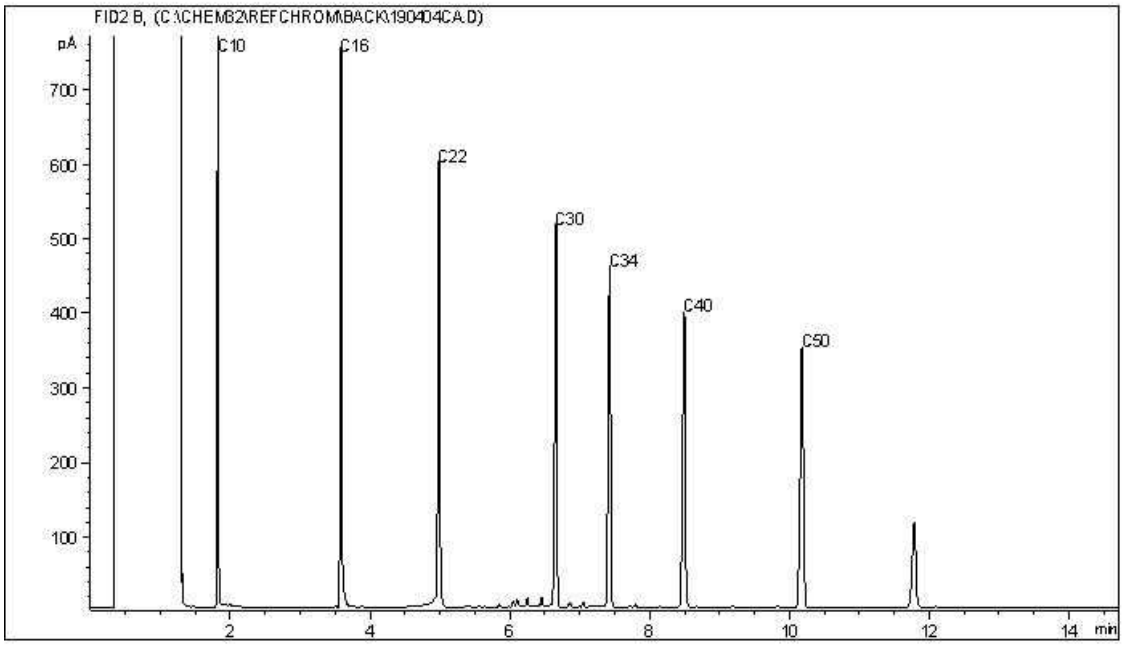
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 110-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

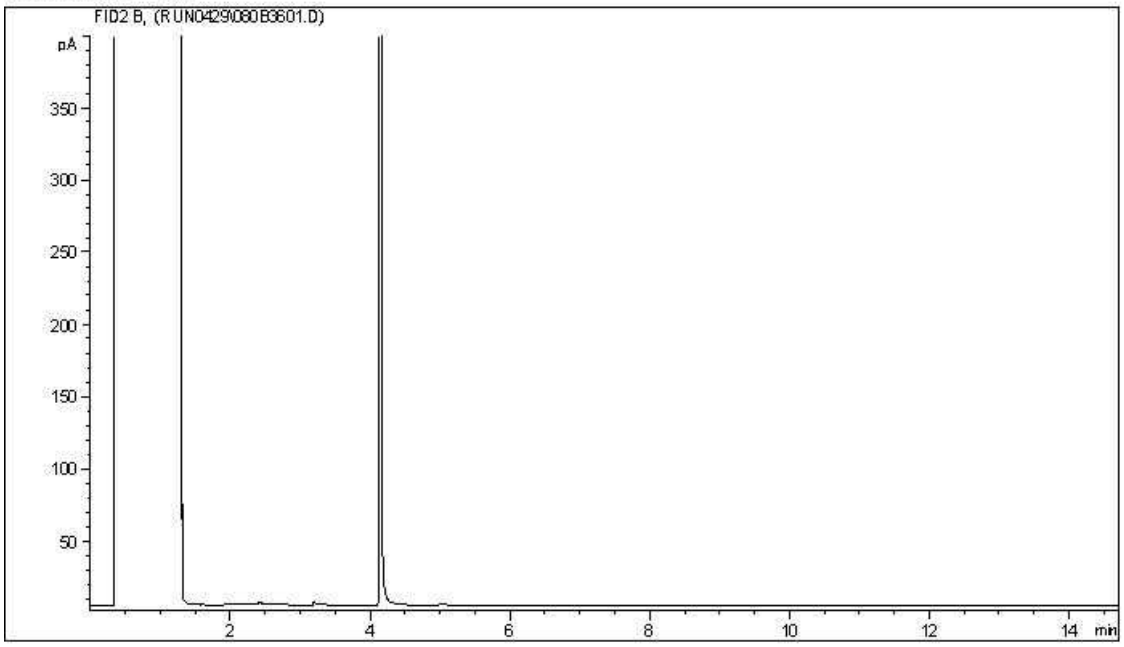
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4897

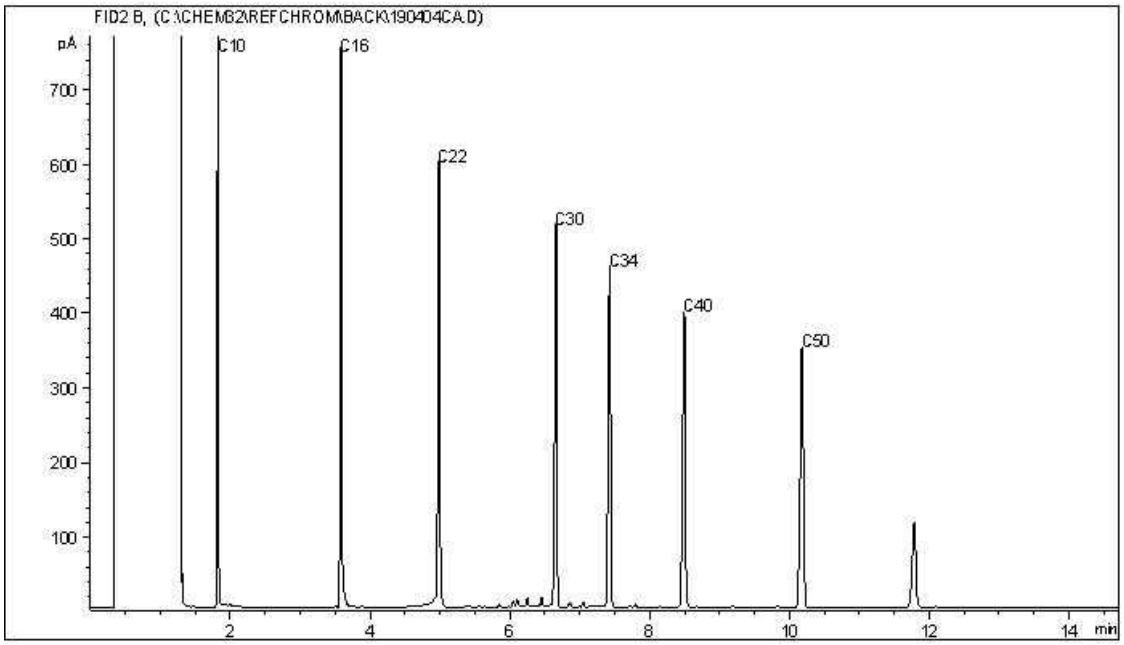
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 111-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

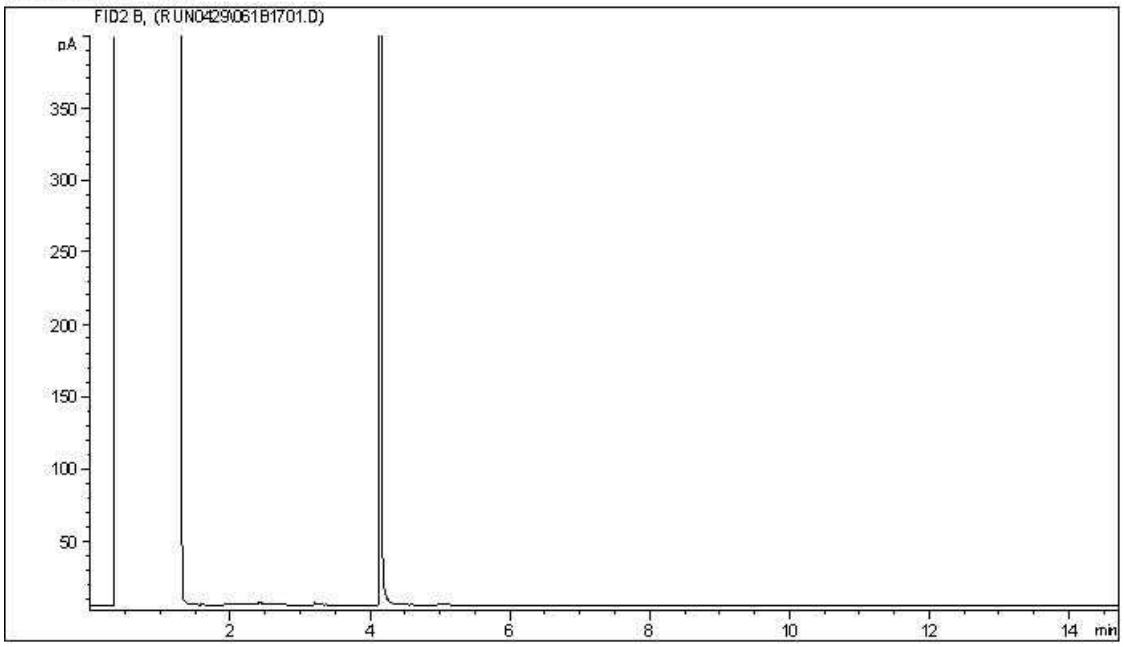
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4898

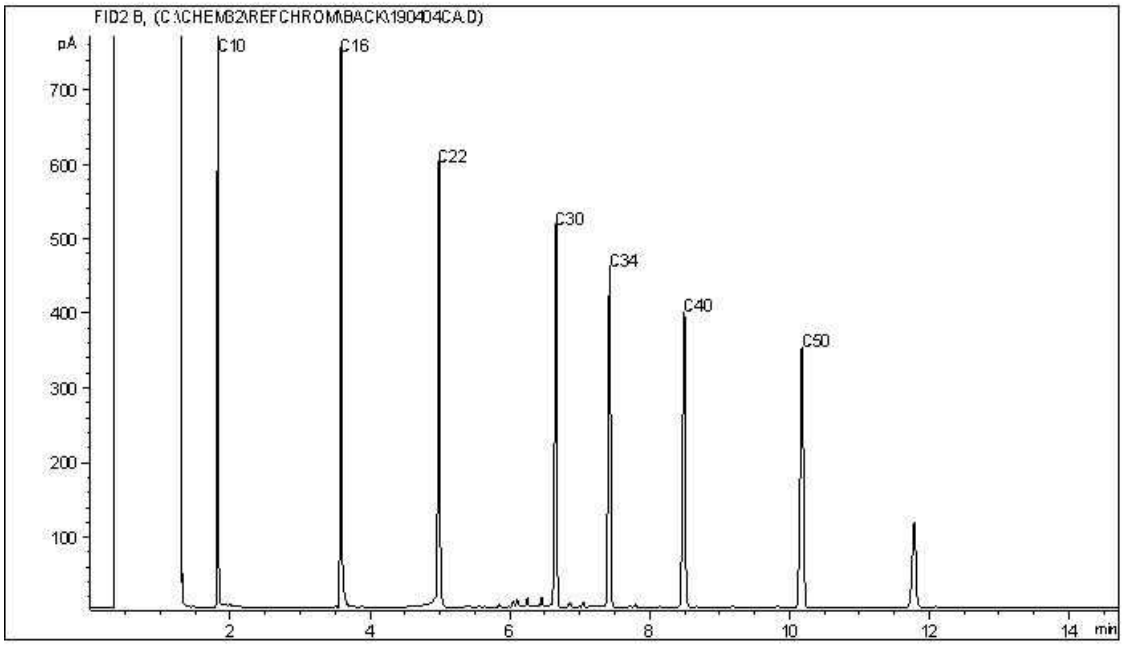
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 111-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

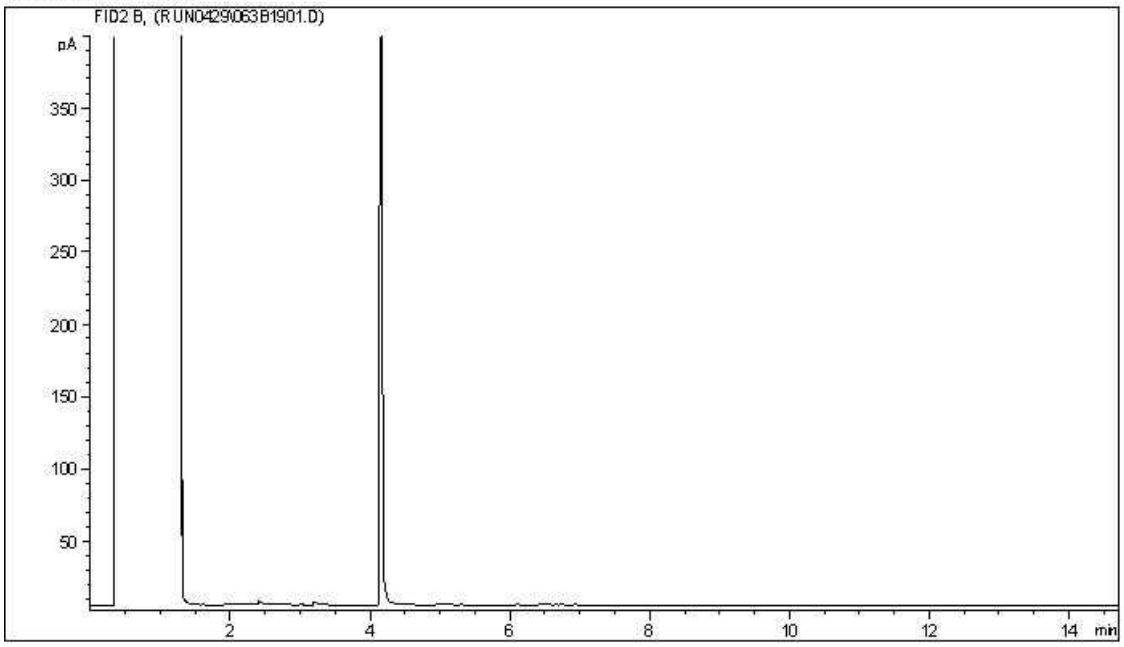
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4898 Lab-Dup

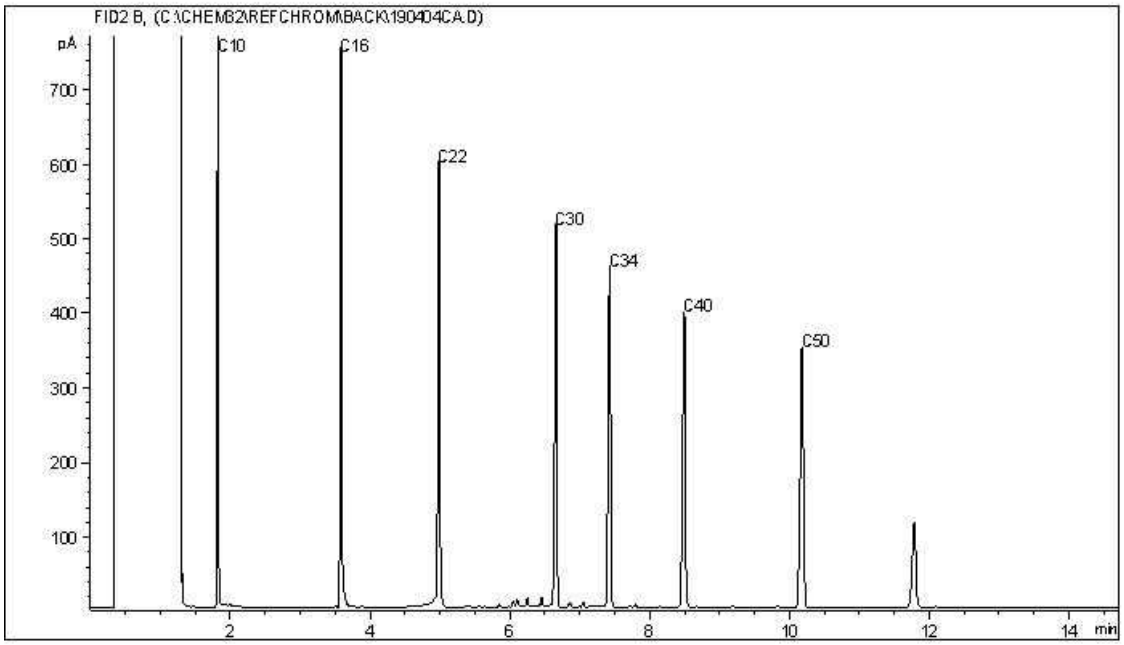
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 111-5

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

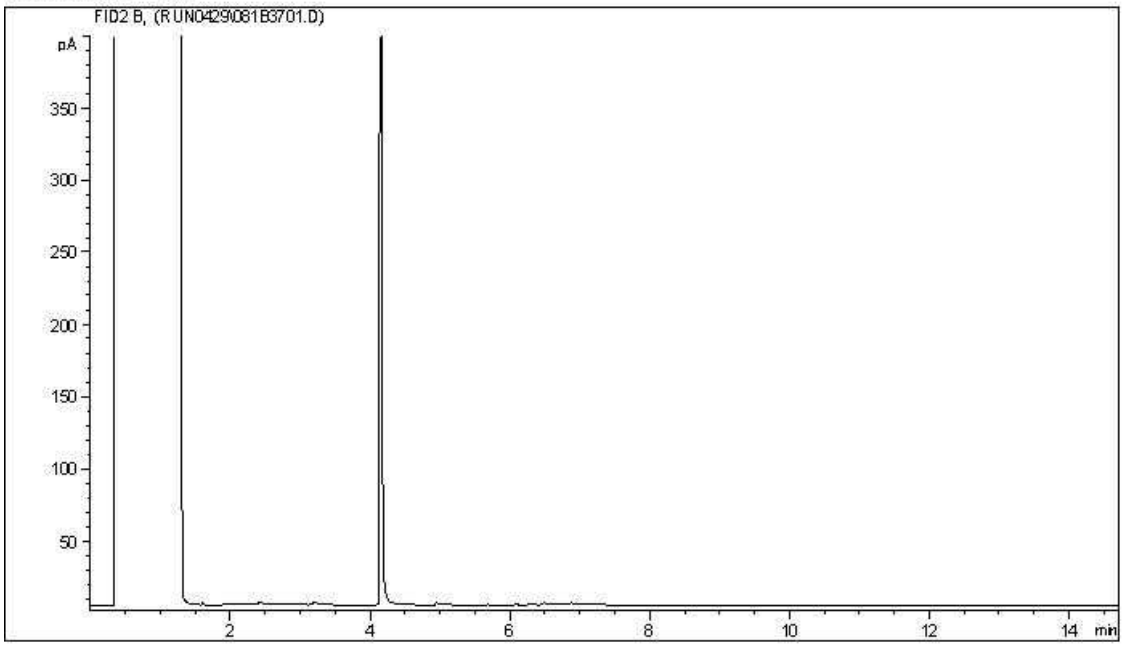
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4899

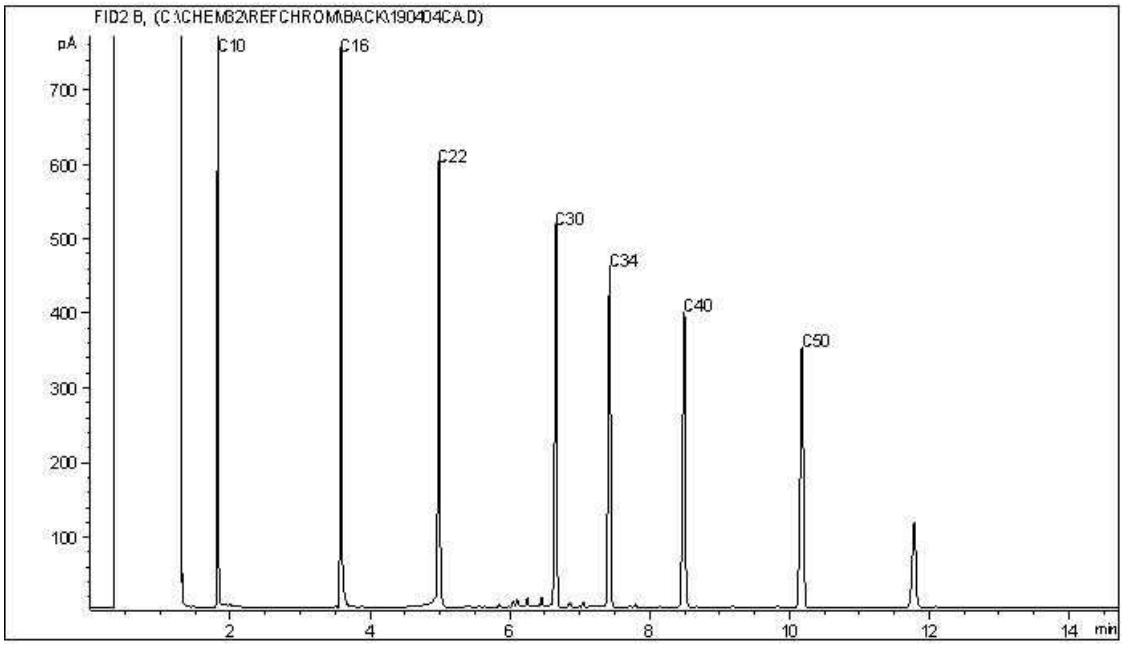
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 112-2

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

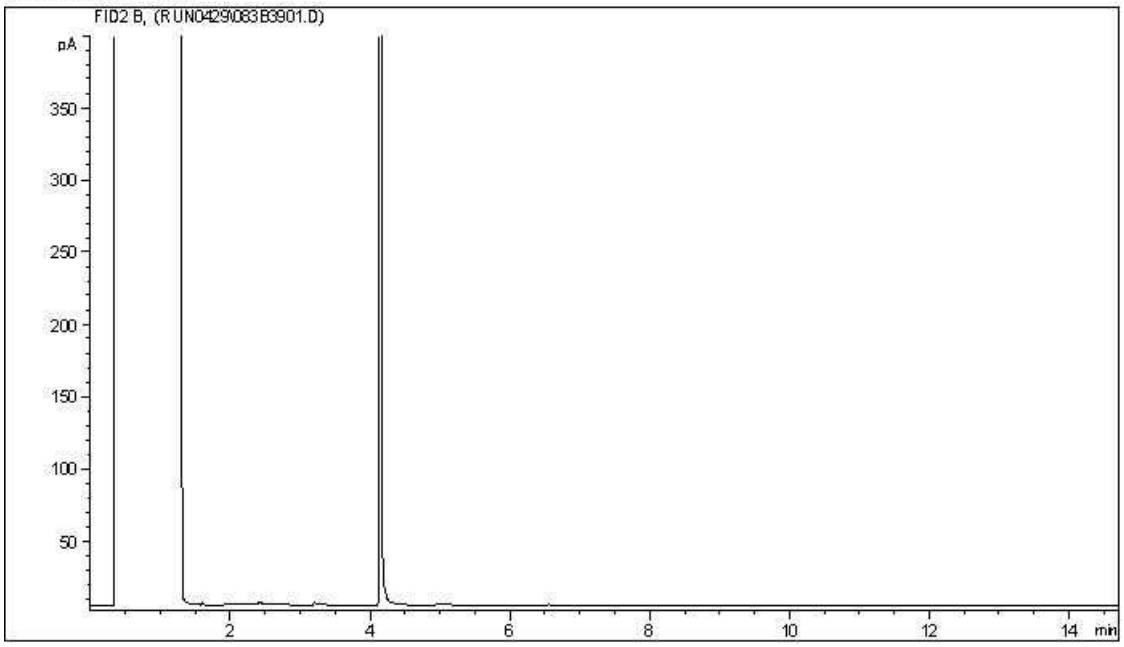
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B930137
Report Date: 2019/05/21
Maxxam Sample: VO4900

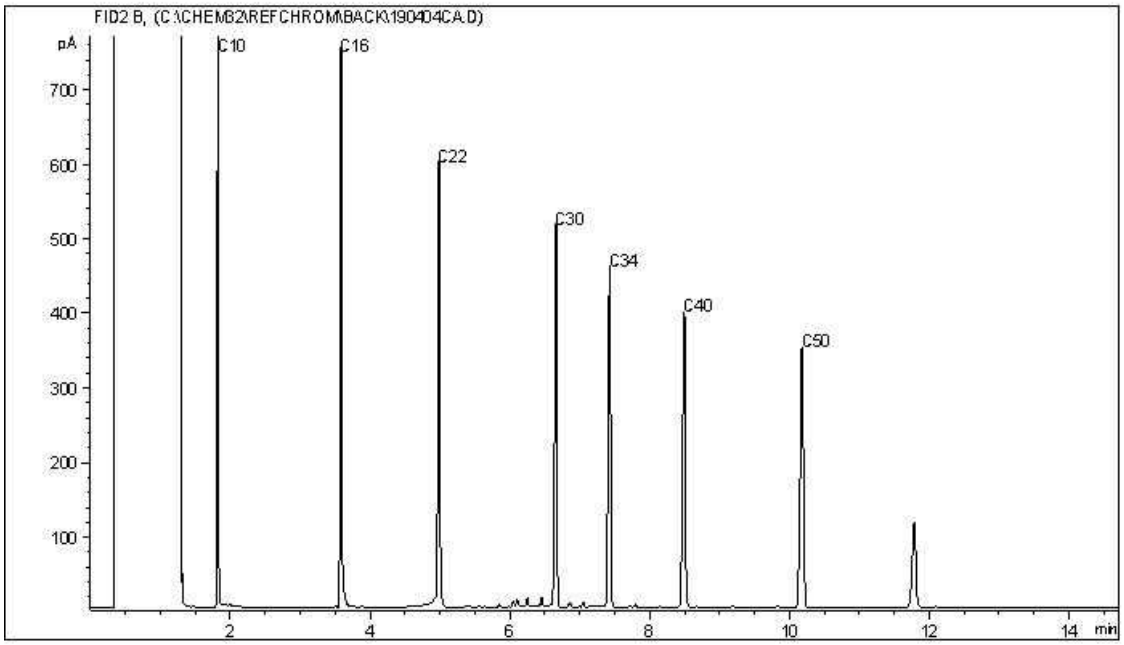
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Reference: STRATHMORE
Client ID: 112-4

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC7



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam
A Bureau Veritas Group Company

Your C.O.C. #: M085291

Attention: Terryn Kuzyk

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/13
Report #: R2721632
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B932977
Received: 2019/05/03, 12:20

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Carbonate and Bicarbonate @25C (Soluble)	1	2019/05/08	2019/05/08	AB SOP-00033 / AB SOP-00005	SM 23 2320 B m
BTEX/F1 by HS GC/MS/FID (MeOH extract) (1)	1	N/A	2019/05/05	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	1	N/A	2019/05/06		Auto Calc
Cation/EC Ratio	1	N/A	2019/05/11		Auto Calc
Chloride (Soluble)	1	2019/05/08	2019/05/09	AB SOP-00033 / AB SOP-00020	SM 23-4500-Cl-E m
Hexavalent Chromium (2)	1	2019/05/08	2019/05/08	AB SOP-00063	SM 23 3500-Cr B m
Conductivity @25C (Soluble)	1	2019/05/08	2019/05/08	AB SOP-00033 / AB SOP-00004	SM 23 2510 B m
CCME Hydrocarbons (F2-F4 in soil) (3)	1	2019/05/04	2019/05/05	AB SOP-00036	CCME PHC-CWS m
Elements by ICPMS - Soils	1	2019/05/08	2019/05/08	AB SOP-00001 / AB SOP-00043	EPA 6020b R2 m
Ion Balance (as Cations/Anions Ratio)	1	N/A	2019/05/05		Auto Calc
Sum of Cations, Anions	1	N/A	2019/05/11		Auto Calc
Moisture	1	N/A	2019/05/05	AB SOP-00002	CCME PHC-CWS m
Nitrite-N and Nitrate-N (soluble)	1	2019/05/08	2019/05/08	AB SOP-00033 / AB SOP-00023	SM 23 4110 B m
pH @25C (1:2 Calcium Chloride Extract)	1	2019/05/07	2019/05/08	AB SOP-00033 / AB SOP-00006	SM 23 4500 H+B m
Sodium Adsorption Ratio	1	N/A	2019/05/11		Auto Calc
Soluble Ions	1	2019/05/08	2019/05/08	AB SOP-00033 / AB SOP-00042	EPA 6010d R5 m
Soluble Paste	1	2019/05/08	2019/05/08	AB SOP-00033	Carter 2nd ed 15.2 m
Soluble Boron Calculation	1	N/A	2019/05/11		Auto Calc
Soluble Ions Calculation	1	N/A	2019/05/05		Auto Calc
Theoretical Gypsum Requirement (4)	1	N/A	2019/05/11		Auto Calc
VOCs in Soil by HS GC/MS (Std List) (1)	1	N/A	2019/05/06	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

Your C.O.C. #: M085291

Attention: Terryn Kuzyk

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/13
Report #: R2721632
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B932977
Received: 2019/05/03, 12:20

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) No lab extraction date is given for F1BTEX & VOC samples that are field preserved with methanol. Extraction date is date sampled unless otherwise stated.
(2) Some soil samples may react with the Cr(VI) spike reducing it to Cr(III). These samples are highly unlikely to contain native hexavalent chromium. Thus a failed spike recovery does not invalidate a negative result on the native sample.
(3) All CCME results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil, Validation of Performance-Based Alternative Methods September 2003. Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.
(4) TGR calculation is based on a theoretical SAR of 4. Salt Contamination and Assessment and remediation guideline 2001 recommended SAR is ranging 4-8. TGR is reported in tonnes/ha.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Linsay Sunderman, Key Account Specialist
Email: LSunderman@maxxam.ca
Phone# (403)735-2237 Ext:2237

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This report has been generated and distributed using a secure automated process.
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B932977
Report Date: 2019/05/13

CLIFTON ASSOCIATES LTD.

AT1 BTEX AND F1-F4 IN SOIL (VIALS)

Maxxam ID		VP7069		
Sampling Date		2019/04/18		
COC Number		M085291		
	UNITS	**102-14**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon				
F2 (C10-C16 Hydrocarbons)	mg/kg	<10	10	9403957
F3 (C16-C34 Hydrocarbons)	mg/kg	<50	50	9403957
F4 (C34-C50 Hydrocarbons)	mg/kg	<50	50	9403957
Reached Baseline at C50	mg/kg	Yes	N/A	9403957
Physical Properties				
Moisture	%	16	0.30	9404056
Volatiles				
Xylenes (Total)	mg/kg	<0.045	0.045	9402586
F1 (C6-C10) - BTEX	mg/kg	<10	10	9402586
Field Preserved Volatiles				
Benzene	mg/kg	<0.0050	0.0050	9404073
Toluene	mg/kg	<0.050	0.050	9404073
Ethylbenzene	mg/kg	<0.010	0.010	9404073
m & p-Xylene	mg/kg	<0.040	0.040	9404073
o-Xylene	mg/kg	<0.020	0.020	9404073
F1 (C6-C10)	mg/kg	<10	10	9404073
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	96	N/A	9404073
4-Bromofluorobenzene (sur.)	%	103	N/A	9404073
D10-o-Xylene (sur.)	%	112	N/A	9404073
D4-1,2-Dichloroethane (sur.)	%	99	N/A	9404073
O-TERPHENYL (sur.)	%	110	N/A	9403957

RDL = Reportable Detection Limit
N/A = Not Applicable

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CLIFTON ASSOCIATES LTD.

AT1 REGULATED METALS - SOILS (SOIL)

Maxxam ID		VP7069		
Sampling Date		2019/04/18		
COC Number		M085291		
	UNITS	102-14	RDL	QC Batch
Calculated Parameters				
Calculated Boron (B)	mg/kg	0.13	0.032	9403231
Elements				
Hex. Chromium (Cr 6+)	mg/kg	<0.080	0.080	9408396
Total Antimony (Sb)	mg/kg	<0.50	0.50	9408706
Total Arsenic (As)	mg/kg	2.2	1.0	9408706
Total Barium (Ba)	mg/kg	46	1.0	9408706
Total Beryllium (Be)	mg/kg	<0.40	0.40	9408706
Total Cadmium (Cd)	mg/kg	0.096	0.050	9408706
Total Chromium (Cr)	mg/kg	5.0	1.0	9408706
Total Cobalt (Co)	mg/kg	2.0	0.50	9408706
Total Copper (Cu)	mg/kg	3.4	1.0	9408706
Total Lead (Pb)	mg/kg	2.6	0.50	9408706
Total Mercury (Hg)	mg/kg	<0.050	0.050	9408706
Total Molybdenum (Mo)	mg/kg	<0.40	0.40	9408706
Total Nickel (Ni)	mg/kg	6.2	1.0	9408706
Total Selenium (Se)	mg/kg	<0.50	0.50	9408706
Total Silver (Ag)	mg/kg	<0.20	0.20	9408706
Total Thallium (Tl)	mg/kg	<0.10	0.10	9408706
Total Tin (Sn)	mg/kg	<1.0	1.0	9408706
Total Uranium (U)	mg/kg	0.24	0.20	9408706
Total Vanadium (V)	mg/kg	9.1	1.0	9408706
Total Zinc (Zn)	mg/kg	17	10	9408706
RDL = Reportable Detection Limit				

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Maxxam Job #: B932977
Report Date: 2019/05/13

CLIFTON ASSOCIATES LTD.

SOIL SALINITY 5 (SOIL)

Maxxam ID		VP7069	VP7069		
Sampling Date		2019/04/18	2019/04/18		
COC Number		M085291	M085291		
	UNITS	102-14	102-14 Lab-Dup	RDL	QC Batch
Calculated Parameters					
Anion Sum	meq/L	8.2	N/A	N/A	9403223
Cation Sum	meq/L	8.3	N/A	N/A	9403223
Cation/EC Ratio	N/A	10	N/A	0.10	9402951
Ion Balance	N/A	1.0	N/A	0.010	9403215
Calculated Calcium (Ca)	mg/kg	8.4	N/A	0.47	9402960
Calculated Magnesium (Mg)	mg/kg	3.8	N/A	0.32	9402960
Calculated Sodium (Na)	mg/kg	42	N/A	0.79	9402960
Calculated Potassium (K)	mg/kg	2.9	N/A	0.41	9402960
Calculated Chloride (Cl)	mg/kg	36	N/A	1.6	9402960
Calculated Sulphate (SO4)	mg/kg	34	N/A	1.6	9402960
Calculated Nitrate (N)	mg/kg	0.14	N/A	0.063	9402960
Calculated Bicarbonate (HCO3)	mg/kg	51	N/A	3.2	9402960
Calculated Carbonate (CO3)	mg/kg	<3.2	N/A	3.2	9402960
Calculated Hydroxide (OH)	mg/kg	<3.2	N/A	3.2	9402960
Soluble Parameters					
Soluble Bicarbonate (HCO3)	mg/L	160	N/A	10	9409281
Soluble Boron (B)	mg/L	0.42	N/A	0.10	9409283
Soluble Carbonate (CO3)	mg/L	<10	N/A	10	9409281
Soluble Chloride (Cl)	mg/L	110	N/A	5.0	9410302
Soluble Conductivity	dS/m	0.81	N/A	0.020	9408676
Soluble Hydroxide (OH)	mg/L	<10	N/A	10	9409281
Soluble (CaCl2) pH	pH	7.87	N/A	N/A	9407123
Sodium Adsorption Ratio	N/A	5.4	N/A	0.10	9402956
Soluble Calcium (Ca)	mg/L	27	N/A	1.5	9409283
Soluble Magnesium (Mg)	mg/L	12	N/A	1.0	9409283
Soluble Nitrate (N)	mg/L	0.43	0.49	0.20	9408960
Soluble Sodium (Na)	mg/L	130	N/A	2.5	9409283
Soluble Potassium (K)	mg/L	9.2	N/A	1.3	9409283
Saturation %	%	32	N/A	N/A	9407111
Soluble Sulphate (SO4)	mg/L	110	N/A	5.0	9409283
Theoretical Gypsum Requirement	tonnes/ha	<0.20	N/A	0.20	9402969

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VP7069	VP7069		
Sampling Date		2019/04/18	2019/04/18		
COC Number		M085291	M085291		
	UNITS	102-14	102-14 Lab-Dup	RDL	QC Batch
Field Preserved Volatiles					
Bromodichloromethane	mg/kg	<0.030	<0.030	0.030	9404081
Bromoform	mg/kg	<0.050	<0.050	0.050	9404081
Bromomethane	mg/kg	<0.020	<0.020	0.020	9404081
Carbon tetrachloride	mg/kg	<0.00050	<0.00050	0.00050	9404081
Chlorobenzene	mg/kg	<0.0010	<0.0010	0.0010	9404081
Chlorodibromomethane	mg/kg	<0.020	<0.020	0.020	9404081
Chloroethane	mg/kg	<0.020	<0.020	0.020	9404081
Chloroform	mg/kg	<0.010	<0.010	0.010	9404081
Chloromethane	mg/kg	<0.030	<0.030	0.030	9404081
1,2-dibromoethane	mg/kg	<0.0020	<0.0020	0.0020	9404081
1,2-dichlorobenzene	mg/kg	<0.020	<0.020	0.020	9404081
1,3-dichlorobenzene	mg/kg	<0.020	<0.020	0.020	9404081
1,4-dichlorobenzene	mg/kg	<0.020	<0.020	0.020	9404081
1,1-dichloroethane	mg/kg	<0.020	<0.020	0.020	9404081
1,2-dichloroethane	mg/kg	<0.0020	<0.0020	0.0020	9404081
1,1-dichloroethene	mg/kg	<0.020	<0.020	0.020	9404081
cis-1,2-dichloroethene	mg/kg	<0.020	<0.020	0.020	9404081
trans-1,2-dichloroethene	mg/kg	<0.020	<0.020	0.020	9404081
Dichloromethane	mg/kg	<0.030	<0.030	0.030	9404081
1,2-dichloropropane	mg/kg	<0.020	<0.020	0.020	9404081
cis-1,3-dichloropropene	mg/kg	<0.020	<0.020	0.020	9404081
trans-1,3-dichloropropene	mg/kg	<0.020	<0.020	0.020	9404081
Methyl methacrylate	mg/kg	<0.040	<0.040	0.040	9404081
Methyl-tert-butylether (MTBE)	mg/kg	<0.030	<0.030	0.030	9404081
Styrene	mg/kg	<0.020	<0.020	0.020	9404081
1,1,1,2-tetrachloroethane	mg/kg	<0.050	<0.050	0.050	9404081
1,1,2,2-tetrachloroethane	mg/kg	<0.050	<0.050	0.050	9404081
Tetrachloroethene	mg/kg	<0.010	<0.010	0.010	9404081
1,2,3-trichlorobenzene	mg/kg	<0.040	<0.040	0.040	9404081
1,2,4-trichlorobenzene	mg/kg	<0.040	<0.040	0.040	9404081
1,3,5-trichlorobenzene	mg/kg	<0.040	<0.040	0.040	9404081
1,1,1-trichloroethane	mg/kg	<0.020	<0.020	0.020	9404081
1,1,2-trichloroethane	mg/kg	<0.020	<0.020	0.020	9404081
Trichloroethene	mg/kg	<0.010	<0.010	0.010	9404081

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate

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VOLATILE ORGANICS BY GC-MS (SOIL)

Maxxam ID		VP7069	VP7069		
Sampling Date		2019/04/18	2019/04/18		
COC Number		M085291	M085291		
	UNITS	**102-14**	**102-14 Lab-Dup**	**RDL**	**QC Batch**
Trichlorofluoromethane	mg/kg	<0.020	<0.020	0.020	9404081
1,2,4-trimethylbenzene	mg/kg	<0.50	<0.50	0.50	9404081
1,3,5-trimethylbenzene	mg/kg	<0.50	<0.50	0.50	9404081
Vinyl chloride	mg/kg	<0.00030	0.00039	0.00030	9404081
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	100	100	N/A	9404081
4-Bromofluorobenzene (sur.)	%	96	94	N/A	9404081
D10-o-Xylene (sur.)	%	108	112	N/A	9404081
D4-1,2-Dichloroethane (sur.)	%	103	106	N/A	9404081

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.7°C

Sample VP7069 [102-14] : Sample was analyzed past method specified hold time for CCME Hydrocarbons (F2-F4 in soil).

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9403957	MHF	Matrix Spike	O-TERPHENYL (sur.)	2019/05/05		93	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/05/05		98	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2019/05/05		96	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2019/05/05		98	%	60 - 140
9403957	MHF	Spiked Blank	O-TERPHENYL (sur.)	2019/05/05		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/05/05		101	%	60 - 140
			F3 (C16-C34 Hydrocarbons)	2019/05/05		100	%	60 - 140
			F4 (C34-C50 Hydrocarbons)	2019/05/05		100	%	60 - 140
9403957	MHF	Method Blank	O-TERPHENYL (sur.)	2019/05/05		112	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/05/05	<10		mg/kg	
			F3 (C16-C34 Hydrocarbons)	2019/05/05	<50		mg/kg	
			F4 (C34-C50 Hydrocarbons)	2019/05/05	<50		mg/kg	
9403957	MHF	RPD	F2 (C10-C16 Hydrocarbons)	2019/05/05	NC		%	40
			F3 (C16-C34 Hydrocarbons)	2019/05/05	NC		%	40
			F4 (C34-C50 Hydrocarbons)	2019/05/05	NC		%	40
9404056	SRI	Method Blank	Moisture	2019/05/05	<0.30		%	
9404056	SRI	RPD	Moisture	2019/05/05	7.1		%	20
9404073	RSU	Matrix Spike	1,4-Difluorobenzene (sur.)	2019/05/05		98	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/05		101	%	50 - 140
			D10-o-Xylene (sur.)	2019/05/05		112	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/05		97	%	50 - 140
			Benzene	2019/05/05		111	%	50 - 140
			Toluene	2019/05/05		107	%	50 - 140
			Ethylbenzene	2019/05/05		114	%	50 - 140
			m & p-Xylene	2019/05/05		111	%	50 - 140
			o-Xylene	2019/05/05		108	%	50 - 140
			F1 (C6-C10)	2019/05/05		74	%	60 - 140
9404073	RSU	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/05/05		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/05		101	%	50 - 140
			D10-o-Xylene (sur.)	2019/05/05		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/05		97	%	50 - 140
			Benzene	2019/05/05		108	%	60 - 130
			Toluene	2019/05/05		107	%	60 - 130
			Ethylbenzene	2019/05/05		113	%	60 - 130
			m & p-Xylene	2019/05/05		111	%	60 - 130
			o-Xylene	2019/05/05		109	%	60 - 130
			F1 (C6-C10)	2019/05/05		94	%	60 - 140
9404073	RSU	Method Blank	1,4-Difluorobenzene (sur.)	2019/05/05		96	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/05		102	%	50 - 140
			D10-o-Xylene (sur.)	2019/05/05		106	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/05		97	%	50 - 140
			Benzene	2019/05/05	<0.0050		mg/kg	
			Toluene	2019/05/05	<0.050		mg/kg	
			Ethylbenzene	2019/05/05	<0.010		mg/kg	
			m & p-Xylene	2019/05/05	<0.040		mg/kg	
			o-Xylene	2019/05/05	<0.020		mg/kg	
			F1 (C6-C10)	2019/05/05	<10		mg/kg	
9404073	RSU	RPD	Benzene	2019/05/05	NC		%	50
			Toluene	2019/05/05	NC		%	50
			Ethylbenzene	2019/05/05	NC		%	50
			m & p-Xylene	2019/05/05	NC		%	50
			o-Xylene	2019/05/05	NC		%	50
			F1 (C6-C10)	2019/05/05	NC		%	30
9404081	MZ	Matrix Spike [VP7069-02]	1,4-Difluorobenzene (sur.)	2019/05/06		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/06		99	%	50 - 140

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			D10-o-Xylene (sur.)	2019/05/06		113	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/06		100	%	50 - 140
			Bromodichloromethane	2019/05/06		104	%	50 - 140
			Bromoform	2019/05/06		109	%	50 - 140
			Bromomethane	2019/05/06		94	%	50 - 140
			Carbon tetrachloride	2019/05/06		101	%	50 - 140
			Chlorobenzene	2019/05/06		93	%	50 - 140
			Chlorodibromomethane	2019/05/06		105	%	50 - 140
			Chloroethane	2019/05/06		83	%	50 - 140
			Chloroform	2019/05/06		93	%	50 - 140
			Chloromethane	2019/05/06		76	%	50 - 140
			1,2-dibromoethane	2019/05/06		100	%	50 - 140
			1,2-dichlorobenzene	2019/05/06		91	%	50 - 140
			1,3-dichlorobenzene	2019/05/06		93	%	50 - 140
			1,4-dichlorobenzene	2019/05/06		89	%	50 - 140
			1,1-dichloroethane	2019/05/06		94	%	50 - 140
			1,2-dichloroethane	2019/05/06		98	%	50 - 140
			1,1-dichloroethene	2019/05/06		90	%	50 - 140
			cis-1,2-dichloroethene	2019/05/06		97	%	50 - 140
			trans-1,2-dichloroethene	2019/05/06		89	%	50 - 140
			Dichloromethane	2019/05/06		93	%	50 - 140
			1,2-dichloropropane	2019/05/06		99	%	50 - 140
			cis-1,3-dichloropropene	2019/05/06		103	%	50 - 140
			trans-1,3-dichloropropene	2019/05/06		109	%	50 - 140
			Methyl methacrylate	2019/05/06		98	%	50 - 140
			Methyl-tert-butylether (MTBE)	2019/05/06		95	%	50 - 140
			Styrene	2019/05/06		96	%	50 - 140
			1,1,1,2-tetrachloroethane	2019/05/06		93	%	50 - 140
			1,1,2,2-tetrachloroethane	2019/05/06		96	%	50 - 140
			Tetrachloroethene	2019/05/06		96	%	50 - 140
			1,2,3-trichlorobenzene	2019/05/06		95	%	50 - 140
			1,2,4-trichlorobenzene	2019/05/06		95	%	50 - 140
			1,3,5-trichlorobenzene	2019/05/06		92	%	50 - 140
			1,1,1-trichloroethane	2019/05/06		99	%	50 - 140
			1,1,2-trichloroethane	2019/05/06		100	%	50 - 140
			Trichloroethene	2019/05/06		100	%	50 - 140
			Trichlorofluoromethane	2019/05/06		94	%	50 - 140
			1,2,4-trimethylbenzene	2019/05/06		88	%	50 - 140
			1,3,5-trimethylbenzene	2019/05/06		90	%	50 - 140
			Vinyl chloride	2019/05/06		82	%	50 - 140
9404081	MZ	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/05/06		102	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/06		100	%	50 - 140
			D10-o-Xylene (sur.)	2019/05/06		100	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/06		106	%	50 - 140
			Bromodichloromethane	2019/05/06		108	%	60 - 130
			Bromoform	2019/05/06		121	%	60 - 130
			Bromomethane	2019/05/06		98	%	60 - 130
			Carbon tetrachloride	2019/05/06		97	%	60 - 130
			Chlorobenzene	2019/05/06		93	%	60 - 130
			Chlorodibromomethane	2019/05/06		110	%	60 - 130
			Chloroethane	2019/05/06		78	%	60 - 130
			Chloroform	2019/05/06		93	%	60 - 130
			Chloromethane	2019/05/06		77	%	60 - 130
			1,2-dibromoethane	2019/05/06		109	%	60 - 130
			1,2-dichlorobenzene	2019/05/06		93	%	60 - 130

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,3-dichlorobenzene	2019/05/06		92	%	60 - 130
			1,4-dichlorobenzene	2019/05/06		92	%	60 - 130
			1,1-dichloroethane	2019/05/06		94	%	60 - 130
			1,2-dichloroethane	2019/05/06		105	%	60 - 130
			1,1-dichloroethene	2019/05/06		87	%	60 - 130
			cis-1,2-dichloroethene	2019/05/06		97	%	60 - 130
			trans-1,2-dichloroethene	2019/05/06		87	%	60 - 130
			Dichloromethane	2019/05/06		96	%	60 - 130
			1,2-dichloropropane	2019/05/06		100	%	60 - 130
			cis-1,3-dichloropropene	2019/05/06		114	%	60 - 130
			trans-1,3-dichloropropene	2019/05/06		125	%	60 - 130
			Methyl methacrylate	2019/05/06		106	%	60 - 130
			Methyl-tert-butylether (MTBE)	2019/05/06		96	%	60 - 130
			Styrene	2019/05/06		96	%	60 - 130
			1,1,1,2-tetrachloroethane	2019/05/06		93	%	60 - 130
			1,1,2,2-tetrachloroethane	2019/05/06		105	%	60 - 130
			Tetrachloroethene	2019/05/06		94	%	60 - 130
			1,2,3-trichlorobenzene	2019/05/06		90	%	60 - 130
			1,2,4-trichlorobenzene	2019/05/06		91	%	60 - 130
			1,3,5-trichlorobenzene	2019/05/06		89	%	60 - 130
			1,1,1-trichloroethane	2019/05/06		97	%	60 - 130
			1,1,2-trichloroethane	2019/05/06		106	%	60 - 130
			Trichloroethene	2019/05/06		97	%	60 - 130
			Trichlorofluoromethane	2019/05/06		89	%	60 - 130
			1,2,4-trimethylbenzene	2019/05/06		86	%	60 - 130
			1,3,5-trimethylbenzene	2019/05/06		88	%	60 - 130
			Vinyl chloride	2019/05/06		79	%	60 - 130
9404081	MZ	Method Blank	1,4-Difluorobenzene (sur.)	2019/05/06		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/06		96	%	50 - 140
			D10-o-Xylene (sur.)	2019/05/06		111	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/06		99	%	50 - 140
			Bromodichloromethane	2019/05/06	<0.030		mg/kg	
			Bromoform	2019/05/06	<0.050		mg/kg	
			Bromomethane	2019/05/06	<0.020		mg/kg	
			Carbon tetrachloride	2019/05/06	<0.00050		mg/kg	
			Chlorobenzene	2019/05/06	<0.0010		mg/kg	
			Chlorodibromomethane	2019/05/06	<0.020		mg/kg	
			Chloroethane	2019/05/06	<0.020		mg/kg	
			Chloroform	2019/05/06	<0.010		mg/kg	
			Chloromethane	2019/05/06	<0.030		mg/kg	
			1,2-dibromoethane	2019/05/06	<0.0020		mg/kg	
			1,2-dichlorobenzene	2019/05/06	<0.020		mg/kg	
			1,3-dichlorobenzene	2019/05/06	<0.020		mg/kg	
			1,4-dichlorobenzene	2019/05/06	<0.020		mg/kg	
			1,1-dichloroethane	2019/05/06	<0.020		mg/kg	
			1,2-dichloroethane	2019/05/06	<0.0020		mg/kg	
			1,1-dichloroethene	2019/05/06	<0.020		mg/kg	
			cis-1,2-dichloroethene	2019/05/06	<0.020		mg/kg	
			trans-1,2-dichloroethene	2019/05/06	<0.020		mg/kg	
			Dichloromethane	2019/05/06	<0.030		mg/kg	
			1,2-dichloropropane	2019/05/06	<0.020		mg/kg	
			cis-1,3-dichloropropene	2019/05/06	<0.020		mg/kg	
			trans-1,3-dichloropropene	2019/05/06	<0.020		mg/kg	
			Methyl methacrylate	2019/05/06	<0.040		mg/kg	
			Methyl-tert-butylether (MTBE)	2019/05/06	<0.030		mg/kg	

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Styrene	2019/05/06	<0.020		mg/kg	
			1,1,1,2-tetrachloroethane	2019/05/06	<0.050		mg/kg	
			1,1,2,2-tetrachloroethane	2019/05/06	<0.050		mg/kg	
			Tetrachloroethene	2019/05/06	<0.010		mg/kg	
			1,2,3-trichlorobenzene	2019/05/06	<0.040		mg/kg	
			1,2,4-trichlorobenzene	2019/05/06	<0.040		mg/kg	
			1,3,5-trichlorobenzene	2019/05/06	<0.040		mg/kg	
			1,1,1-trichloroethane	2019/05/06	<0.020		mg/kg	
			1,1,2-trichloroethane	2019/05/06	<0.020		mg/kg	
			Trichloroethene	2019/05/06	<0.010		mg/kg	
			Trichlorofluoromethane	2019/05/06	<0.020		mg/kg	
			1,2,4-trimethylbenzene	2019/05/06	<0.50		mg/kg	
			1,3,5-trimethylbenzene	2019/05/06	<0.50		mg/kg	
			Vinyl chloride	2019/05/06	<0.00030		mg/kg	
9404081	MZ	RPD [VP7069-02]	Bromodichloromethane	2019/05/06	NC		%	50
			Bromoform	2019/05/06	NC		%	50
			Bromomethane	2019/05/06	NC		%	50
			Carbon tetrachloride	2019/05/06	NC		%	50
			Chlorobenzene	2019/05/06	NC		%	50
			Chlorodibromomethane	2019/05/06	NC		%	50
			Chloroethane	2019/05/06	NC		%	50
			Chloroform	2019/05/06	NC		%	50
			Chloromethane	2019/05/06	NC		%	50
			1,2-dibromoethane	2019/05/06	NC		%	50
			1,2-dichlorobenzene	2019/05/06	NC		%	50
			1,3-dichlorobenzene	2019/05/06	NC		%	50
			1,4-dichlorobenzene	2019/05/06	NC		%	50
			1,1-dichloroethane	2019/05/06	NC		%	50
			1,2-dichloroethane	2019/05/06	NC		%	50
			1,1-dichloroethene	2019/05/06	NC		%	50
			cis-1,2-dichloroethene	2019/05/06	NC		%	50
			trans-1,2-dichloroethene	2019/05/06	NC		%	50
			Dichloromethane	2019/05/06	NC		%	50
			1,2-dichloropropane	2019/05/06	NC		%	50
			cis-1,3-dichloropropene	2019/05/06	NC		%	50
			trans-1,3-dichloropropene	2019/05/06	NC		%	50
			Methyl methacrylate	2019/05/06	NC		%	50
			Methyl-tert-butylether (MTBE)	2019/05/06	NC		%	50
			Styrene	2019/05/06	NC		%	50
			1,1,1,2-tetrachloroethane	2019/05/06	NC		%	50
			1,1,2,2-tetrachloroethane	2019/05/06	NC		%	50
			Tetrachloroethene	2019/05/06	NC		%	50
			1,2,3-trichlorobenzene	2019/05/06	NC		%	50
			1,2,4-trichlorobenzene	2019/05/06	NC		%	50
			1,3,5-trichlorobenzene	2019/05/06	NC		%	50
			1,1,1-trichloroethane	2019/05/06	NC		%	50
			1,1,2-trichloroethane	2019/05/06	NC		%	50
			Trichloroethene	2019/05/06	NC		%	50
			Trichlorofluoromethane	2019/05/06	NC		%	50
			1,2,4-trimethylbenzene	2019/05/06	NC		%	50
			1,3,5-trimethylbenzene	2019/05/06	NC		%	50
			Vinyl chloride	2019/05/06	26		%	50
9407111	JHC	QC Standard	Saturation %	2019/05/08		99	%	75 - 125
9407111	JHC	RPD	Saturation %	2019/05/08	3.5		%	12
9407123	MN0	QC Standard	Soluble (CaCl2) pH	2019/05/08		100	%	98 - 102

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9407123	MN0	Spiked Blank	Soluble (CaCl2) pH	2019/05/08		101	%	97 - 103
9407123	MN0	RPD	Soluble (CaCl2) pH	2019/05/08	0.13		%	N/A
9408396	STI	Matrix Spike	Hex. Chromium (Cr 6+)	2019/05/08		101	%	75 - 125
9408396	STI	Spiked Blank	Hex. Chromium (Cr 6+)	2019/05/08		106	%	80 - 120
9408396	STI	Method Blank	Hex. Chromium (Cr 6+)	2019/05/08	<0.080		mg/kg	
9408396	STI	RPD	Hex. Chromium (Cr 6+)	2019/05/08	NC		%	35
9408676	FZ	QC Standard	Soluble Conductivity	2019/05/08		99	%	75 - 125
9408676	FZ	Spiked Blank	Soluble Conductivity	2019/05/08		100	%	90 - 110
9408676	FZ	Method Blank	Soluble Conductivity	2019/05/08	<0.020		dS/m	
9408706	ANE	Matrix Spike	Total Antimony (Sb)	2019/05/08		79	%	75 - 125
			Total Arsenic (As)	2019/05/08		92	%	75 - 125
			Total Barium (Ba)	2019/05/08		NC	%	75 - 125
			Total Beryllium (Be)	2019/05/08		95	%	75 - 125
			Total Cadmium (Cd)	2019/05/08		93	%	75 - 125
			Total Chromium (Cr)	2019/05/08		107	%	75 - 125
			Total Cobalt (Co)	2019/05/08		93	%	75 - 125
			Total Copper (Cu)	2019/05/08		92	%	75 - 125
			Total Lead (Pb)	2019/05/08		91	%	75 - 125
			Total Mercury (Hg)	2019/05/08		87	%	75 - 125
			Total Molybdenum (Mo)	2019/05/08		94	%	75 - 125
			Total Nickel (Ni)	2019/05/08		96	%	75 - 125
			Total Selenium (Se)	2019/05/08		94	%	75 - 125
			Total Silver (Ag)	2019/05/08		93	%	75 - 125
			Total Thallium (Tl)	2019/05/08		90	%	75 - 125
			Total Tin (Sn)	2019/05/08		94	%	75 - 125
			Total Uranium (U)	2019/05/08		89	%	75 - 125
			Total Vanadium (V)	2019/05/08		122	%	75 - 125
			Total Zinc (Zn)	2019/05/08		NC	%	75 - 125
9408706	ANE	QC Standard	Total Arsenic (As)	2019/05/08		95	%	53 - 147
			Total Barium (Ba)	2019/05/08		87	%	80 - 119
			Total Chromium (Cr)	2019/05/08		89	%	59 - 141
			Total Cobalt (Co)	2019/05/08		87	%	58 - 142
			Total Copper (Cu)	2019/05/08		90	%	83 - 117
			Total Lead (Pb)	2019/05/08		99	%	79 - 121
			Total Nickel (Ni)	2019/05/08		94	%	79 - 121
			Total Vanadium (V)	2019/05/08		91	%	79 - 121
			Total Zinc (Zn)	2019/05/08		91	%	79 - 121
9408706	ANE	Spiked Blank	Total Antimony (Sb)	2019/05/08		87	%	80 - 120
			Total Arsenic (As)	2019/05/08		91	%	80 - 120
			Total Barium (Ba)	2019/05/08		92	%	80 - 120
			Total Beryllium (Be)	2019/05/08		91	%	80 - 120
			Total Cadmium (Cd)	2019/05/08		92	%	80 - 120
			Total Chromium (Cr)	2019/05/08		93	%	80 - 120
			Total Cobalt (Co)	2019/05/08		92	%	80 - 120
			Total Copper (Cu)	2019/05/08		93	%	80 - 120
			Total Lead (Pb)	2019/05/08		91	%	80 - 120
			Total Mercury (Hg)	2019/05/08		95	%	80 - 120
			Total Molybdenum (Mo)	2019/05/08		92	%	80 - 120
			Total Nickel (Ni)	2019/05/08		92	%	80 - 120
			Total Selenium (Se)	2019/05/08		91	%	80 - 120
			Total Silver (Ag)	2019/05/08		92	%	80 - 120
			Total Thallium (Tl)	2019/05/08		92	%	80 - 120
			Total Tin (Sn)	2019/05/08		90	%	80 - 120
			Total Uranium (U)	2019/05/08		91	%	80 - 120
			Total Vanadium (V)	2019/05/08		93	%	80 - 120

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Total Zinc (Zn)	2019/05/08		91	%	80 - 120
9408706	ANE	Method Blank	Total Antimony (Sb)	2019/05/08	<0.50		mg/kg	
			Total Arsenic (As)	2019/05/08	<1.0		mg/kg	
			Total Barium (Ba)	2019/05/08	<1.0		mg/kg	
			Total Beryllium (Be)	2019/05/08	<0.40		mg/kg	
			Total Cadmium (Cd)	2019/05/08	<0.050		mg/kg	
			Total Chromium (Cr)	2019/05/08	<1.0		mg/kg	
			Total Cobalt (Co)	2019/05/08	<0.50		mg/kg	
			Total Copper (Cu)	2019/05/08	<1.0		mg/kg	
			Total Lead (Pb)	2019/05/08	<0.50		mg/kg	
			Total Mercury (Hg)	2019/05/08	<0.050		mg/kg	
			Total Molybdenum (Mo)	2019/05/08	<0.40		mg/kg	
			Total Nickel (Ni)	2019/05/08	<1.0		mg/kg	
			Total Selenium (Se)	2019/05/08	<0.50		mg/kg	
			Total Silver (Ag)	2019/05/08	<0.20		mg/kg	
			Total Thallium (Tl)	2019/05/08	<0.10		mg/kg	
			Total Tin (Sn)	2019/05/08	<1.0		mg/kg	
			Total Uranium (U)	2019/05/08	<0.20		mg/kg	
			Total Vanadium (V)	2019/05/08	<1.0		mg/kg	
			Total Zinc (Zn)	2019/05/08	<10		mg/kg	
9408706	ANE	RPD	Total Antimony (Sb)	2019/05/08	NC		%	30
			Total Arsenic (As)	2019/05/08	4.2		%	30
			Total Barium (Ba)	2019/05/08	9.1		%	35
			Total Beryllium (Be)	2019/05/08	1.4		%	30
			Total Cadmium (Cd)	2019/05/08	2.1		%	30
			Total Chromium (Cr)	2019/05/08	5.4		%	30
			Total Cobalt (Co)	2019/05/08	8.3		%	30
			Total Copper (Cu)	2019/05/08	5.2		%	30
			Total Lead (Pb)	2019/05/08	2.6		%	35
			Total Mercury (Hg)	2019/05/08	NC		%	35
			Total Molybdenum (Mo)	2019/05/08	7.8		%	35
			Total Nickel (Ni)	2019/05/08	6.7		%	30
			Total Selenium (Se)	2019/05/08	NC		%	30
			Total Silver (Ag)	2019/05/08	NC		%	35
			Total Thallium (Tl)	2019/05/08	2.1		%	30
			Total Tin (Sn)	2019/05/08	NC		%	35
			Total Uranium (U)	2019/05/08	3.2		%	30
			Total Vanadium (V)	2019/05/08	3.3		%	30
			Total Zinc (Zn)	2019/05/08	0.73		%	30
9408960	PR6	Matrix Spike [VP7069-01]	Soluble Nitrate (N)	2019/05/08		100	%	75 - 125
9408960	PR6	QC Standard	Soluble Nitrate (N)	2019/05/08		83	%	75 - 125
9408960	PR6	Spiked Blank	Soluble Nitrate (N)	2019/05/08		102	%	80 - 120
9408960	PR6	Method Blank	Soluble Nitrate (N)	2019/05/08	<0.20		mg/L	
9408960	PR6	RPD [VP7069-01]	Soluble Nitrate (N)	2019/05/08	13		%	30
9409281	KD9	Method Blank	Soluble Bicarbonate (HCO3)	2019/05/08	<10		mg/L	
			Soluble Carbonate (CO3)	2019/05/08	<10		mg/L	
			Soluble Hydroxide (OH)	2019/05/08	<10		mg/L	
9409283	ALX	Matrix Spike	Soluble Boron (B)	2019/05/08		94	%	75 - 125
			Soluble Calcium (Ca)	2019/05/08		94	%	75 - 125
			Soluble Magnesium (Mg)	2019/05/08		102	%	75 - 125
			Soluble Sodium (Na)	2019/05/08		94	%	75 - 125
			Soluble Potassium (K)	2019/05/08		95	%	75 - 125
9409283	ALX	QC Standard	Soluble Calcium (Ca)	2019/05/08		100	%	75 - 125
			Soluble Magnesium (Mg)	2019/05/08		109	%	75 - 125
			Soluble Sodium (Na)	2019/05/08		105	%	75 - 125

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Soluble Potassium (K)	2019/05/08		97	%	75 - 125
9409283	ALX	Spiked Blank	Soluble Boron (B)	2019/05/08		99	%	80 - 120
			Soluble Calcium (Ca)	2019/05/08		99	%	80 - 120
			Soluble Magnesium (Mg)	2019/05/08		107	%	80 - 120
			Soluble Sodium (Na)	2019/05/08		100	%	80 - 120
			Soluble Potassium (K)	2019/05/08		99	%	80 - 120
9409283	ALX	Method Blank	Soluble Boron (B)	2019/05/08	<0.10		mg/L	
			Soluble Calcium (Ca)	2019/05/08	<1.5		mg/L	
			Soluble Magnesium (Mg)	2019/05/08	<1.0		mg/L	
			Soluble Sodium (Na)	2019/05/08	<2.5		mg/L	
			Soluble Potassium (K)	2019/05/08	<1.3		mg/L	
9410302	STI	Matrix Spike	Soluble Chloride (Cl)	2019/05/09		108	%	75 - 125
9410302	STI	QC Standard	Soluble Chloride (Cl)	2019/05/09		103	%	75 - 125
9410302	STI	Spiked Blank	Soluble Chloride (Cl)	2019/05/09		109	%	80 - 120
9410302	STI	Method Blank	Soluble Chloride (Cl)	2019/05/09	<5.0		mg/L	
9410302	STI	RPD	Soluble Chloride (Cl)	2019/05/09	0.0041		%	30

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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NOTIFICATION LOG

No Reportable Regulation Exceedences Noted.

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VALIDATION SIGNATURE PAGE

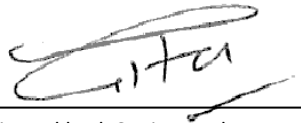
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Dennis Ngondu, B.Sc., P.Chem., QP, Supervisor, Organics



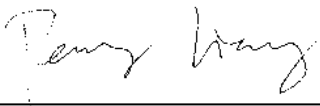
Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Gita Pokhrel, Senior Analyst



Janet Gao, B.Sc., QP, Supervisor, Organics



Harry (Peng) Liang, Senior Analyst



Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

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Maxxam
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Calgary: 4000 19th St. NE, T2E 6P8. Toll Free (800) 386-7247
Edmonton: 9331-48 St. T6B 2R4. Toll Free (800) 386-7247
maxxam.ca

CHAIN OF CUSTODY RECORD

M 085291

Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information	Turnaround Time (TAT) Required
Company: Clifton	Company: Clifton	Quotation #:	☑ 5 - 7 Days Regular (Most analyses)
Contact Name: Terryn Kuzyk	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 2222 - 30 Ave NE Calgary, AB T2E 7K	Address:		Rush TAT (Surcharges will be applied)
Phone: 403-263-2556	Phone:	Project #:	☐ Same Day ☐ 2 Days ☐ 1 Day ☐ 3-4 Days
Email: terryn_kuzyk@clifton.ca	Email:	Site Location:	Date Required:
Copies:	Copies:	Site #:	Rush Confirmation #:
		Sampled By:	

Laboratory Use Only

	YES	NO	Cooler ID			
Seal Present		✓				
Seal Intact		✓	Temp	5	5	7
Cooling Media	✓					
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						

Depot Reception

Analysis Requested

Sample Identification	Depth (Unit)	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# of containers	BTEX F1 ☐ VOC ☒	BTEX F1-F2	BTEX F1-F4	Routine Water	Regulated Metals ☐ Tot ☐ Diss	Mercury ☐ Total ☐ Dissolved	Salinity 4	Sieve (75 micron)	Texture (% Sand, Silt, Clay)	Basic Class II Landfill	Salinity 5	HOLD - DO NOT ANALYZE
1 102-14		18 April		Soil		X		X		X						X	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Please indicate Filtered, Preserved or Both (F, P, F/P)

Regulatory Criteria

☐ AT1
☐ CCME
☐ Drinking Water
☐ D50 (Drilling Waste)
☐ Saskatchewan
☐ Other:

Special Instructions

Relinquished by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Received by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)
Terryn Kuzyk	2019/05/03	12:20	Sara Bischoff	2019/05/03	12:20

03-May-19 12:20
Linsay Sunderman
B932977

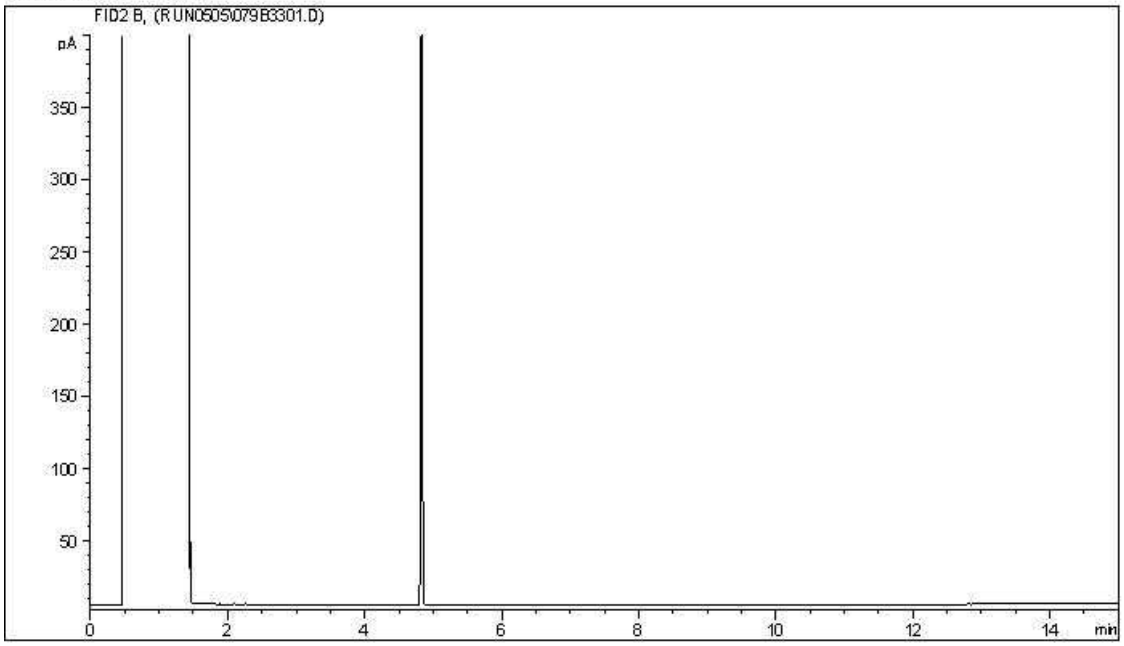
Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxx

SBZ INS-0001

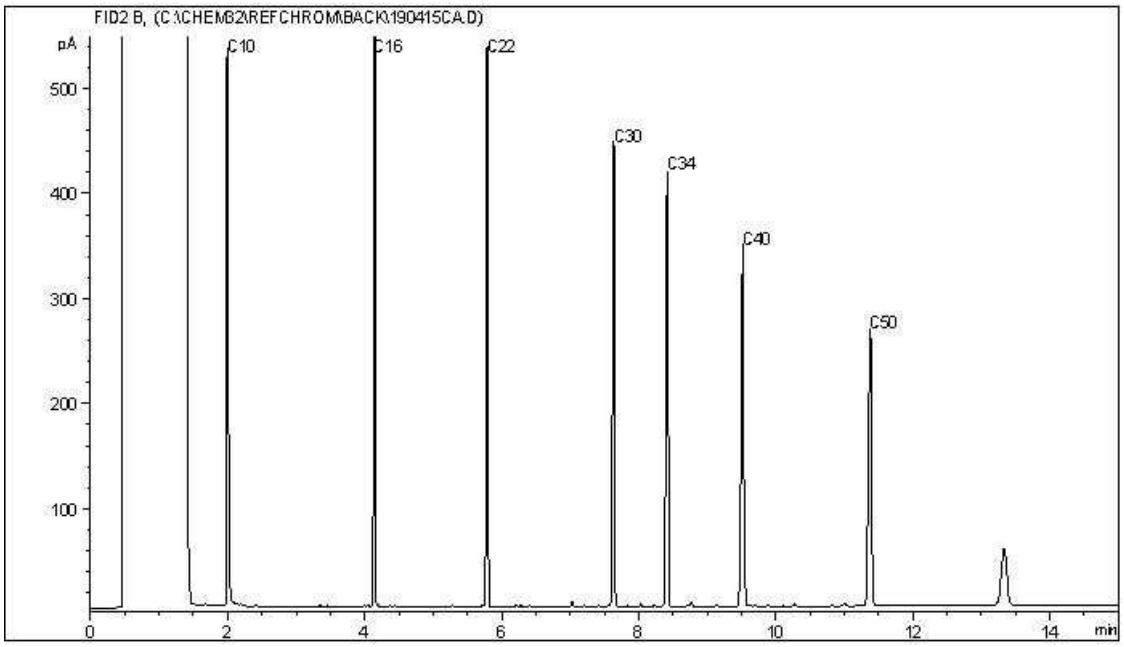
AB FCD-00331/7

CCME Hydrocarbons (F2-F4 in soil) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam
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Success Through Science®

Your Project #: CG3198.1
Site Location: STRATHMORE, AB
Your C.O.C. #: M070793

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/04/28
Report #: R2715400
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B929505
Received: 2019/04/23, 11:01

Sample Matrix: Soil
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
BTEX in Leachates by HS GC/MS/FID (1)	1	2019/04/25	2019/04/26	AB SOP-00039	EPA 8260d m
Flash Point	1	N/A	2019/04/23	AB SOP-00062	ASTM D3828-16a/ A m
ICPMS Metals on TCLP Leachate (1)	1	2019/04/25	2019/04/26	AB SOP-00043	EPA 6020b R2 m
Free Liquid (Paint filter)	1	N/A	2019/04/23	AB SOP-00047	EPA 9095B R2 m
TCLP pH Measurements	1	2019/04/25	2019/04/26	AB SOP-00006	SM 23 4500 H+B m
pH @25C (1:1 extract, solid waste)	1	2019/04/24	2019/04/24	AB SOP-00033 / AB SOP-00006	SM 23 4500 H+B m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) Samples were extracted as per EPA 1311 unless otherwise noted in the report.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your Project #: CG3198.1
Site Location: STRATHMORE, AB
Your C.O.C. #: M070793

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/04/28
Report #: R2715400
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B929505
Received: 2019/04/23, 11:01

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Linsay Sunderman, Key Account Specialist
Email: LSunderman@maxxam.ca
Phone# (403)735-2237 Ext:2237
==========
This report has been generated and distributed using a secure automated process.
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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

BASIC CLASS II LANDFILL PACKAGE (SOIL)

Maxxam ID		VO2099	VO2099		
Sampling Date		2019/04/23	2019/04/23		
COC Number		M070793	M070793		
	UNITS	CUTTINGS	CUTTINGS Lab-Dup	RDL	QC Batch
Soluble Parameters					
Soluble (1:1) pH	pH	8.27	8.18	N/A	9391370
Physical Properties					
Closed Cup Flash Point	deg. C	>61	N/A	N/A	9390256
Free Liquid	N/A	PASS	N/A	N/A	9390265
Elements					
Leachable Antimony (Sb)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Arsenic (As)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Barium (Ba)	mg/L	1.2	1.3	1.0	9393532
Leachable Beryllium (Be)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Boron (B)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Cadmium (Cd)	mg/L	<0.10	<0.10	0.10	9393532
Leachable Chromium (Cr)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Cobalt (Co)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Copper (Cu)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Iron (Fe)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Lead (Pb)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Mercury (Hg)	mg/L	<0.020	<0.020	0.020	9393532
Leachable Nickel (Ni)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Selenium (Se)	mg/L	<0.10	<0.10	0.10	9393532
Leachable Silver (Ag)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Thallium (Tl)	mg/L	<0.50	<0.50	0.50	9393532
Leachable Uranium (U)	mg/L	<0.20	<0.20	0.20	9393532
Leachable Vanadium (V)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Zinc (Zn)	mg/L	<1.0	<1.0	1.0	9393532
Leachable Zirconium (Zr)	mg/L	<1.0	<1.0	1.0	9393532
Volatiles					
Leachable (ZH) Benzene	mg/L	<0.010	N/A	0.010	9392883
Leachable (ZH) Toluene	mg/L	<0.010	N/A	0.010	9392883
Leachable (ZH) Ethylbenzene	mg/L	<0.010	N/A	0.010	9392883
Leachable (ZH) o-Xylene	mg/L	<0.010	N/A	0.010	9392883
Leachable (ZH) m & p-Xylene	mg/L	<0.020	N/A	0.020	9392883

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

BASIC CLASS II LANDFILL PACKAGE (SOIL)

Maxxam ID		VO2099	VO2099		
Sampling Date		2019/04/23	2019/04/23		
COC Number		M070793	M070793		
	UNITS	**CUTTINGS**	**CUTTINGS Lab-Dup**	**RDL**	**QC Batch**
Leachable (ZH) Xylenes (Total)	mg/L	<0.020	N/A	0.020	9392883
Surrogate Recovery (%)					
Leachable (ZH) 1,4-Difluorobenzene (sur.)	%	103	N/A	N/A	9392883
Leachable (ZH) 4-Bromofluorobenzene (sur.)	%	99	N/A	N/A	9392883
Leachable (ZH) D4-1,2-Dichloroethane (sur.)	%	97	N/A	N/A	9392883

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

RESULTS OF CHEMICAL ANALYSES OF SOIL

Maxxam ID		VO2099	VO2099	
Sampling Date		2019/04/23	2019/04/23	
COC Number		M070793	M070793	
	UNITS	**CUTTINGS**	**CUTTINGS Lab-Dup**	**QC Batch**
Misc. Inorganics				
Leachable Initial pH of Sample	pH	9.13	9.30	9392882
Leachable pH after HCl	pH	1.76	1.80	9392882
Leachable Final pH of Leachate	pH	5.97	5.85	9392882
Lab-Dup = Laboratory Initiated Duplicate				

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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	1.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9390256	RK3	RPD	Closed Cup Flash Point	2019/04/23	NC		%	35
9391370	FZ	QC Standard	Soluble (1:1) pH	2019/04/24		101	%	98 - 102
9391370	FZ	Spiked Blank	Soluble (1:1) pH	2019/04/24		100	%	97 - 103
9391370	FZ	RPD [VO2099-01]	Soluble (1:1) pH	2019/04/24	1.1		%	N/A
9392882	JAX	Spiked Blank	Leachable Initial pH of Sample	2019/04/26		100	%	97 - 103
			Leachable pH after HCl	2019/04/26		99	%	97 - 103
			Leachable Final pH of Leachate	2019/04/26		99	%	97 - 103
9392882	JAX	RPD [VO2099-01]	Leachable Initial pH of Sample	2019/04/26	1.8		%	N/A
			Leachable pH after HCl	2019/04/26	2.2		%	N/A
			Leachable Final pH of Leachate	2019/04/26	2.0		%	N/A
9392883	DO1	Matrix Spike	Leachable (ZH) 1,4-Difluorobenzene (sur.)	2019/04/26		97	%	50 - 140
			Leachable (ZH) 4-Bromofluorobenzene (sur.)	2019/04/26		100	%	50 - 140
			Leachable (ZH) D4-1,2-Dichloroethane (sur.)	2019/04/26		100	%	50 - 140
			Leachable (ZH) Benzene	2019/04/26		85	%	50 - 140
			Leachable (ZH) Toluene	2019/04/26		85	%	50 - 140
			Leachable (ZH) Ethylbenzene	2019/04/26		89	%	50 - 140
			Leachable (ZH) o-Xylene	2019/04/26		88	%	50 - 140
			Leachable (ZH) m & p-Xylene	2019/04/26		90	%	50 - 140
9392883	DO1	Spiked Blank	Leachable (ZH) 1,4-Difluorobenzene (sur.)	2019/04/26		102	%	50 - 140
			Leachable (ZH) 4-Bromofluorobenzene (sur.)	2019/04/26		100	%	50 - 140
			Leachable (ZH) D4-1,2-Dichloroethane (sur.)	2019/04/26		91	%	50 - 140
			Leachable (ZH) Benzene	2019/04/26		82	%	60 - 130
			Leachable (ZH) Toluene	2019/04/26		82	%	60 - 130
			Leachable (ZH) Ethylbenzene	2019/04/26		84	%	60 - 130
			Leachable (ZH) o-Xylene	2019/04/26		86	%	60 - 130
			Leachable (ZH) m & p-Xylene	2019/04/26		91	%	60 - 130
9392883	DO1	Method Blank	Leachable (ZH) 1,4-Difluorobenzene (sur.)	2019/04/26		103	%	50 - 140
			Leachable (ZH) 4-Bromofluorobenzene (sur.)	2019/04/26		100	%	50 - 140
			Leachable (ZH) D4-1,2-Dichloroethane (sur.)	2019/04/26		100	%	50 - 140
			Leachable (ZH) Benzene	2019/04/26	<0.010		mg/L	
			Leachable (ZH) Toluene	2019/04/26	<0.010		mg/L	
			Leachable (ZH) Ethylbenzene	2019/04/26	<0.010		mg/L	
			Leachable (ZH) o-Xylene	2019/04/26	<0.010		mg/L	
			Leachable (ZH) m & p-Xylene	2019/04/26	<0.020		mg/L	
			Leachable (ZH) Xylenes (Total)	2019/04/26	<0.020		mg/L	
9392883	DO1	RPD	Leachable (ZH) Benzene	2019/04/26	NC		%	30
			Leachable (ZH) Toluene	2019/04/26	NC		%	30
			Leachable (ZH) Ethylbenzene	2019/04/26	NC		%	30
			Leachable (ZH) o-Xylene	2019/04/26	NC		%	30
			Leachable (ZH) m & p-Xylene	2019/04/26	NC		%	30
			Leachable (ZH) Xylenes (Total)	2019/04/26	NC		%	30
9393532	ANE	Matrix Spike [VO2099-01]	Leachable Antimony (Sb)	2019/04/26		90	%	75 - 125
			Leachable Arsenic (As)	2019/04/26		95	%	75 - 125
			Leachable Barium (Ba)	2019/04/26		NC	%	75 - 125
			Leachable Beryllium (Be)	2019/04/26		91	%	75 - 125
			Leachable Boron (B)	2019/04/26		97	%	75 - 125
			Leachable Cadmium (Cd)	2019/04/26		93	%	75 - 125
			Leachable Chromium (Cr)	2019/04/26		95	%	75 - 125
			Leachable Cobalt (Co)	2019/04/26		93	%	75 - 125
			Leachable Copper (Cu)	2019/04/26		91	%	75 - 125
			Leachable Iron (Fe)	2019/04/26		104	%	75 - 125
			Leachable Lead (Pb)	2019/04/26		88	%	75 - 125
			Leachable Mercury (Hg)	2019/04/26		94	%	75 - 125

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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable Nickel (Ni)	2019/04/26		91	%	75 - 125
			Leachable Selenium (Se)	2019/04/26		93	%	75 - 125
			Leachable Silver (Ag)	2019/04/26		93	%	75 - 125
			Leachable Thallium (Tl)	2019/04/26		90	%	75 - 125
			Leachable Uranium (U)	2019/04/26		94	%	75 - 125
			Leachable Vanadium (V)	2019/04/26		98	%	75 - 125
			Leachable Zinc (Zn)	2019/04/26		91	%	75 - 125
			Leachable Zirconium (Zr)	2019/04/26		99	%	75 - 125
9393532	ANE	Spiked Blank	Leachable Antimony (Sb)	2019/04/26		90	%	80 - 120
			Leachable Arsenic (As)	2019/04/26		95	%	80 - 120
			Leachable Barium (Ba)	2019/04/26		99	%	80 - 120
			Leachable Beryllium (Be)	2019/04/26		92	%	80 - 120
			Leachable Boron (B)	2019/04/26		98	%	80 - 120
			Leachable Cadmium (Cd)	2019/04/26		94	%	80 - 120
			Leachable Chromium (Cr)	2019/04/26		95	%	80 - 120
			Leachable Cobalt (Co)	2019/04/26		94	%	80 - 120
			Leachable Copper (Cu)	2019/04/26		93	%	80 - 120
			Leachable Iron (Fe)	2019/04/26		96	%	80 - 120
			Leachable Lead (Pb)	2019/04/26		91	%	80 - 120
			Leachable Mercury (Hg)	2019/04/26		94	%	80 - 120
			Leachable Nickel (Ni)	2019/04/26		92	%	80 - 120
			Leachable Selenium (Se)	2019/04/26		94	%	80 - 120
			Leachable Silver (Ag)	2019/04/26		94	%	80 - 120
			Leachable Thallium (Tl)	2019/04/26		93	%	80 - 120
			Leachable Uranium (U)	2019/04/26		92	%	80 - 120
			Leachable Vanadium (V)	2019/04/26		96	%	80 - 120
			Leachable Zinc (Zn)	2019/04/26		95	%	80 - 120
			Leachable Zirconium (Zr)	2019/04/26		96	%	80 - 120
9393532	ANE	Method Blank	Leachable Antimony (Sb)	2019/04/26	<1.0		mg/L	
			Leachable Arsenic (As)	2019/04/26	<0.50		mg/L	
			Leachable Barium (Ba)	2019/04/26	<1.0		mg/L	
			Leachable Beryllium (Be)	2019/04/26	<0.50		mg/L	
			Leachable Boron (B)	2019/04/26	<1.0		mg/L	
			Leachable Cadmium (Cd)	2019/04/26	<0.10		mg/L	
			Leachable Chromium (Cr)	2019/04/26	<0.50		mg/L	
			Leachable Cobalt (Co)	2019/04/26	<1.0		mg/L	
			Leachable Copper (Cu)	2019/04/26	<1.0		mg/L	
			Leachable Iron (Fe)	2019/04/26	<1.0		mg/L	
			Leachable Lead (Pb)	2019/04/26	<0.50		mg/L	
			Leachable Mercury (Hg)	2019/04/26	<0.020		mg/L	
			Leachable Nickel (Ni)	2019/04/26	<0.50		mg/L	
			Leachable Selenium (Se)	2019/04/26	<0.10		mg/L	
			Leachable Silver (Ag)	2019/04/26	<0.50		mg/L	
			Leachable Thallium (Tl)	2019/04/26	<0.50		mg/L	
			Leachable Uranium (U)	2019/04/26	<0.20		mg/L	
			Leachable Vanadium (V)	2019/04/26	<1.0		mg/L	
			Leachable Zinc (Zn)	2019/04/26	<1.0		mg/L	
			Leachable Zirconium (Zr)	2019/04/26	<1.0		mg/L	
9393532	ANE	RPD [VO2099-01]	Leachable Antimony (Sb)	2019/04/26	NC		%	35
			Leachable Arsenic (As)	2019/04/26	NC		%	35
			Leachable Barium (Ba)	2019/04/26	9.6		%	35
			Leachable Beryllium (Be)	2019/04/26	NC		%	35
			Leachable Boron (B)	2019/04/26	NC		%	35

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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Leachable Cadmium (Cd)	2019/04/26	NC		%	35
			Leachable Chromium (Cr)	2019/04/26	NC		%	35
			Leachable Cobalt (Co)	2019/04/26	NC		%	35
			Leachable Copper (Cu)	2019/04/26	NC		%	35
			Leachable Iron (Fe)	2019/04/26	NC		%	35
			Leachable Lead (Pb)	2019/04/26	NC		%	35
			Leachable Mercury (Hg)	2019/04/26	NC		%	35
			Leachable Nickel (Ni)	2019/04/26	NC		%	35
			Leachable Selenium (Se)	2019/04/26	NC		%	35
			Leachable Silver (Ag)	2019/04/26	NC		%	35
			Leachable Thallium (Tl)	2019/04/26	NC		%	35
			Leachable Uranium (U)	2019/04/26	NC		%	35
			Leachable Vanadium (V)	2019/04/26	NC		%	35
			Leachable Zinc (Zn)	2019/04/26	NC		%	35
			Leachable Zirconium (Zr)	2019/04/26	NC		%	35

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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Maxxam Job #: B929505
Report Date: 2019/04/28

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

NOTIFICATION LOG

No Reportable Regulation Exceedences Noted.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B929505
Report Date: 2019/04/28

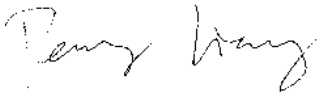
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198.1
Site Location: STRATHMORE, AB
Sampler Initials: AW

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Janet Gao, B.Sc., QP, Supervisor, Organics



Harry (Peng) Liang, Senior Analyst

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

Calgary: 4000 19th St. NE, T2E 6P8. Toll Free (800) 386-7247
Edmonton: 9331-48 St. T6B 2R4. Toll Free (800) 386-7247
maxxam.ca

CHAIN OF CUSTODY RECORD

639 M 070793

Page 1 of 1

Invoice Information	Report Information (if differs from invoice)	Project Information	Turnaround Time (TAT) Required
Company: Clifton	Company:	Quotation #:	☑ 5 - 7 Days Regular (Most analyses)
Contact Name: Terryn Kuzyk	Contact Name:	P.O. #/ AFE#:	PLEASE PROVIDE ADVANCE NOTICE FOR RUSH PROJECTS
Address: 2222 - 30 Ave NE Calgary AB	Address:	Project #: CG3198.1	Rush TAT (Surcharges will be applied)
Phone: 1-403-990-8916	Phone:	Site Location: Strathmore, AB	☐ Same Day ☐ 2 Days ☐ 1 Day ☐ 3-4 Days
Email: terryn_kuzyk@clifton.ca	Email:	Site #:	Date Required:
Copies:	Copies:	Sampled By: Austin	Rush Confirmation #:

Laboratory Use Only

	YES	NO	Cooler ID			
Seal Present		✓				
Seal Intact		✓	Temp	1	-1	3
Cooling Media	✓					
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						
	YES	NO	Cooler ID			
Seal Present						
Seal Intact			Temp			
Cooling Media						

Depot Reception

Analysis Requested

	Sample Identification	Depth (Unit)	Date Sampled (YYYY/MM/DD)	Time Sampled (HH:MM)	Matrix	# of containers	BTEX F1 ☐ VOC ☐	BTEX F1-F2	BTEX F1-F4	Routine Water	Regulated Metals ☐ Diss ☐ Tot	Mercury ☐ Dissolved ☐ Total	Salinity 4	Sieve (75 micron)	Texture (% Sand, Silt, Clay)	Basic Class II Landfill	HOLD - DO NOT ANALYZE
1	Cuttings		2019/04/23		soil	3										✓	
2																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	

Please indicate Filtered, Preserved or Both (F, P, F/P)

Regulatory Criteria

- ☑ AT1
- ☐ CCME
- ☐ Drinking Water
- ☐ D50 (Drilling Waste)
- ☐ Saskatchewan
- ☐ Other:

Special Instructions

Relinquished by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)	Received by: (Signature/ Print)	DATE (YYYY/MM/DD)	Time (HH:MM)
Austin Mei	2019/04/23	11:00	Jordan Bank	2019/04/23	11:01

Maxxam Job #
23-Apr-19 11:01
Linsay Sunderman
B929505

Unless otherwise agreed to in writing, work submitted on this Chain of Custody is subject to Maxxam's standard Terms and Conditions. Signing of this Chain of Custody document is acknowledgment and acceptance of our terms which are available for viewing at www.maxx

AB FCD-00331/7

SBZ

Your Project #: B930137
Site Location: STRATHMORE
Your C.O.C. #: B930137-QUEC-01-01

Attention: Linsay Sunderman

MAXXAM ANALYTICS. INC
4000-19th St. N.E
Calgary, AB
CANADA T2E 6P8

Report Date: 2019/05/13
Report #: R2439678
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B914523
Received: 2019/05/01, 09:30

Sample Matrix: Soil
Samples Received: 10

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Primary Reference
Pesticide Diagnostic Scan by GC/MS	5	2019/05/06	2019/05/09	STL-SOP 00259	EPA 8270D R5 m
Pesticide Diagnostic Scan by GC/MS	5	2019/05/06	2019/05/10	STL-SOP 00259	EPA 8270D R5 m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
Note: RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Note: All parameters included in the present certificate are accredited by the MELCC unless stated otherwise.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Your Project #: B930137
Site Location: STRATHMORE
Your C.O.C. #: B930137-QUEC-01-01

Attention: Linsay Sunderman

MAXXAM ANALYTICS. INC
4000-19th St. N.E
Calgary, AB
CANADA T2E 6P8

Report Date: 2019/05/13
Report #: R2439678
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B914523
Received: 2019/05/01, 09:30

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Sophie Retailleau, Project Manager
Email: SRetailleau@maxxam.ca
Phone# (514)448-9001 Ext:7066232
==========
This report has been generated and distributed using a secure automated process.
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Maxxam Job #: B914523
Report Date: 2019/05/13

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5032	GJ5033	GJ5034		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4891-108-2	VO4892-108-5	VO4893-109-2	RDL	QC Batch
% MOISTURE	%	12	12	17		
PESTICIDES						
Acephate †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Alachlor †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Aldrin †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Aspon †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Atrazine †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Azinphos-ethyl †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Azinphos-methyl †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Benfluralin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
a-BHC †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
b-BHC †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
d-BHC †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Bromacil †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Bromophos †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Bromophos-ethyl †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Butylate †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Captan †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Carbofenthion †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlorbenside †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
a-Chlordane †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
g-Chlordane †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlorfenson (Ovex) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Chlorfenvinphos (E/Z) †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlormephos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Chlorothalonil (Daconil) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Chlorpropham †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Chlorpyrifos †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlorpyrifos-methyl †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Dacthal (Chlorthal-Dimethyl) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Chlorthiophos †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Cyanazine (Bladex) †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Cyanophos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
o,p'-DDD †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
o,p'-DDE †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5032	GJ5033	GJ5034		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4891-108-2	VO4892-108-5	VO4893-109-2	RDL	QC Batch
p,p'-DDE †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
o,p-DDT + p,p-DDD †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
p,p'-DDT †	mg/kg	<0.010	<0.010	0.011	0.010	1986831
Desethyl atrazine †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Demeton (O+S) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Desmetryn †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Diallate(E/Z) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Diazinon †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dichlobenil †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Dicloran †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Dichlorfenthion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dichlofluanid †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dichlorvos & Naled †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Diclofop-methyl †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Dicofol †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Dicrotophos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Dieldrin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dimethoate †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dioxathion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Diphenylamine †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Disulfoton (Di-Syston) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Endosulfan sulfate †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Endosulfan I †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Endosulfan II †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Endrin †	mg/kg	<0.040	<0.040	<0.040	0.040	1986831
Endrin aldehyde †	mg/kg	<0.040	<0.040	<0.040	0.040	1986831
Endrin Ketone †	mg/kg	<0.040	<0.040	<0.040	0.040	1986831
EPN †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Eptam (EPTC) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Ethalfluralin †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Ethion †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Fenchlorphos (Ronnel) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Fenitrothion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Fenthion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Fensulfothion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

PESTICIDES (SOIL)

Maxxam ID		GJ5032	GJ5033	GJ5034		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4891-108-2	VO4892-108-5	VO4893-109-2	RDL	QC Batch
Folpet †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Fonofos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Heptachlor †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Heptachlor epoxide †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Hexachlorobenzene †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Hexazinone †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Iodofenphos †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Iprodione (Rovral) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Isofenphos †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Lindane (BHC-Gamma) †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Malaoxon †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Malathion †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Metalaxyl †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Methamidophos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Methidathion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
4,4'-methoxychlor †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Metolachlor (Dual) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Metribuzin (Sencor) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Mevinphos, cis/trans (Phosdrin) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Mirex †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Nitrofen †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Omethoate †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Parathion †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Methyl parathion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Permethrin (Cis/Trans) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Phorate (Thimet) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Phosalone †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Phosmet †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Phosphamidon †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Pirimicarb †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Pirimiphos-ethyl †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Pirimiphos-methyl †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Procymidone †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Profenofos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Profluralin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5032	GJ5033	GJ5034		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4891-108-2	VO4892-108-5	VO4893-109-2	RDL	QC Batch
Prometryne †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Pronamide †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Propazine †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Propiconazole (Tilt) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Pyrazophos †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Quinalophos †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Quintozene †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Simazine †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Stirophos (Tetrachlorvinphos) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Sulfotep †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Tecnazene †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Terbufos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Terbutryne †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Terbuthylazine †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Tetradifon †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Tolyfluanid †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Triadimefon †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Triallate †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Trifluralin †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Vinclozolin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Surrogate Recovery (%)						
13C-p,p'-DDE	%	78	78	71		1986831
2-Fluorobiphenyl	%	67	73	70		1986831
D5-Nitrobenzene	%	67	74	74		1986831
Triphenylphosphate	%	81	87	80		1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5035		GJ5036		GJ5037		
Sampling Date		2019/04/22		2019/04/22		2019/04/22		
COC Number		B930137-QUEC-01-01		B930137-QUEC-01-01		B930137-QUEC-01-01		
	Units	VO4894-109-5	RDL	VO4895-110-2	RDL	VO4896-110-5	RDL	QC Batch
% MOISTURE	%	12		12		15		
PESTICIDES								
Acephate †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Alachlor †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Aldrin †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Aspon †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Atrazine †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Azinphos-ethyl †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Azinphos-methyl †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Benfluralin †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
a-BHC †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
b-BHC †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
d-BHC †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Bromacil †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Bromophos †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Bromophos-ethyl †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Butylate †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Captan †	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	1986831
Carbofenthion †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Chlorbenside †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
a-Chlordane †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
g-Chlordane †	mg/kg	<0.010	0.010	0.041	0.010	<0.010	0.010	1986831
Chlorfenson (Ovex) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Chlorfenvinphos (E/Z) †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Chlormephos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Chlorothalonil (Daconil) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Chlorpropham †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Chlorpyrifos †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Chlorpyrifos-methyl †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Dacthal (Chlorthal-Dimethyl) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Chlorthiophos †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Cyanazine (Bladex) †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Cyanophos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
o,p'-DDD †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
o,p'-DDE †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5035		GJ5036		GJ5037		
Sampling Date		2019/04/22		2019/04/22		2019/04/22		
COC Number		B930137-QUEC-01-01		B930137-QUEC-01-01		B930137-QUEC-01-01		
	Units	VO4894-109-5	RDL	VO4895-110-2	RDL	VO4896-110-5	RDL	QC Batch
p,p'-DDE †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
o,p-DDT + p,p-DDD †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
p,p'-DDT †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Desethyl atrazine †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Demeton (O+S) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Desmetryn †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Diallate(E/Z) †	mg/kg	<0.020	0.020	0.022	0.020	<0.020	0.020	1986831
Diazinon †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Dichlobenil †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Dicloran †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Dichlorfenthion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Dichlofluanid †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Dichlorvos & Naled †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Diclofop-methyl †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Dicofol †	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	1986831
Dicrotophos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Dieldrin †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Dimethoate †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Dioxathion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Diphenylamine †	mg/kg	<0.050	0.050	<0.079 (1)	0.079	<0.050	0.050	1986831
Disulfoton (Di-Syston) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Endosulfan sulfate †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Endosulfan I †	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	1986831
Endosulfan II †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Endrin †	mg/kg	<0.040	0.040	<0.040	0.040	<0.040	0.040	1986831
Endrin aldehyde †	mg/kg	<0.040	0.040	<0.040	0.040	<0.040	0.040	1986831
Endrin Ketone †	mg/kg	<0.040	0.040	<0.040	0.040	<0.040	0.040	1986831
EPN †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Eptam (EPTC) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Ethalfluralin †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Ethion †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Fenchlorphos (Ronnel) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Fenitrothion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Fenthion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) Detection limit raised due to matrix interference.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5035		GJ5036		GJ5037		
Sampling Date		2019/04/22		2019/04/22		2019/04/22		
COC Number		B930137-QUEC-01-01		B930137-QUEC-01-01		B930137-QUEC-01-01		
	Units	VO4894-109-5	RDL	VO4895-110-2	RDL	VO4896-110-5	RDL	QC Batch
Fensulfothion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Folpet †	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	1986831
Fonofos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Heptachlor †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Heptachlor epoxide †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Hexachlorobenzene †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Hexazinone †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Iodofenphos †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Iprodione (Rovral) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Isofenphos †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Lindane (BHC-Gamma) †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Malaoxon †	mg/kg	<0.10	0.10	<0.10	0.10	<0.10	0.10	1986831
Malathion †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Metalaxyl †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Methamidophos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Methidathion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
4,4'-methoxychlor †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Metolachlor (Dual) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Metribuzin (Sencor) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Mevinphos, cis/trans (Phosdrin) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Mirex †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Nitrofen †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Omethoate †	mg/kg	<0.050	0.050	<0.068 (1)	0.068	<0.050	0.050	1986831
Parathion †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Methyl parathion †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Permethrin (Cis/Trans) †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Phorate (Thimet) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Phosalone †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Phosmet †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Phosphamidon †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Pirimicarb †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Pirimiphos-ethyl †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Pirimiphos-methyl †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Procymidone †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable
(1) Detection limit raised due to matrix interference.

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

PESTICIDES (SOIL)

Maxxam ID		GJ5035		GJ5036		GJ5037		
Sampling Date		2019/04/22		2019/04/22		2019/04/22		
COC Number		B930137-QUEC-01-01		B930137-QUEC-01-01		B930137-QUEC-01-01		
	Units	VO4894-109-5	RDL	VO4895-110-2	RDL	VO4896-110-5	RDL	QC Batch
Profenofos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Profluralin †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Prometryne †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Pronamide †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Propazine †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Propiconazole (Tilt) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Pyrazophos †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Quinalophos †	mg/kg	<0.030	0.030	<0.030	0.030	<0.030	0.030	1986831
Quintozene †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Simazine †	mg/kg	<0.010	0.010	<0.010	0.010	<0.010	0.010	1986831
Stirophos (Tetrachlorvinphos) †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Sulfotep †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Tecnazene †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Terbufos †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Terbutryne †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Terbuthylazine †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Tetradifon †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Tolyfluanid †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Triadimefon †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Triallate †	mg/kg	<0.020	0.020	0.29	0.020	<0.020	0.020	1986831
Trifluralin †	mg/kg	<0.050	0.050	<0.050	0.050	<0.050	0.050	1986831
Vinclozolin †	mg/kg	<0.020	0.020	<0.020	0.020	<0.020	0.020	1986831
Surrogate Recovery (%)								
13C-p,p'-DDE	%	76		70		72		1986831
2-Fluorobiphenyl	%	78		76		72		1986831
D5-Nitrobenzene	%	83		83		77		1986831
Triphenylphosphate	%	85		87		82		1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5038	GJ5039	GJ5040		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4897-111-2	VO4898-111-5	VO4899-112-2	RDL	QC Batch
% MOISTURE	%	14	15	11		
PESTICIDES						
Acephate †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Alachlor †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Aldrin †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Aspon †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Atrazine †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Azinphos-ethyl †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Azinphos-methyl †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Benfluralin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
a-BHC †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
b-BHC †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
d-BHC †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Bromacil †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Bromophos †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Bromophos-ethyl †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Butylate †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Captan †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Carbofenthion †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlorbenside †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
a-Chlordane †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
g-Chlordane †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlorfenson (Ovex) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Chlorfenvinphos (E/Z) †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlormephos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Chlorothalonil (Daconil) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Chlorpropham †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Chlorpyrifos †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Chlorpyrifos-methyl †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Dacthal (Chlorthal-Dimethyl) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Chlorthiophos †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Cyanazine (Bladex) †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Cyanophos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
o,p'-DDD †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
o,p'-DDE †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5038	GJ5039	GJ5040		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4897-111-2	VO4898-111-5	VO4899-112-2	RDL	QC Batch
p,p'-DDE †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
o,p-DDT + p,p-DDD †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
p,p'-DDT †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Desethyl atrazine †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Demeton (O+S) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Desmetryn †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Diallate(E/Z) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Diazinon †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dichlobenil †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Dicloran †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Dichlorfenthion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dichlofluanid †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dichlorvos & Naled †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Diclofop-methyl †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Dicofol †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Dicrotophos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Dieldrin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dimethoate †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Dioxathion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Diphenylamine †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Disulfoton (Di-Syston) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Endosulfan sulfate †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Endosulfan I †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Endosulfan II †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Endrin †	mg/kg	<0.040	<0.040	<0.040	0.040	1986831
Endrin aldehyde †	mg/kg	<0.040	<0.040	<0.040	0.040	1986831
Endrin Ketone †	mg/kg	<0.040	<0.040	<0.040	0.040	1986831
EPN †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Eptam (EPTC) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Ethalfluralin †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Ethion †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Fenchlorphos (Ronnel) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Fenitrothion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Fenthion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Fensulfothion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5038	GJ5039	GJ5040		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4897-111-2	VO4898-111-5	VO4899-112-2	RDL	QC Batch
Folpet †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Fonofos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Heptachlor †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Heptachlor epoxide †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Hexachlorobenzene †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Hexazinone †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Iodofenphos †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Iprodione (Rovral) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Isofenphos †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Lindane (BHC-Gamma) †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Malaoxon †	mg/kg	<0.10	<0.10	<0.10	0.10	1986831
Malathion †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Metalaxyl †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Methamidophos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Methidathion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
4,4'-methoxychlor †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Metolachlor (Dual) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Metribuzin (Sencor) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Mevinphos, cis/trans (Phosdrin) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Mirex †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Nitrofen †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Omethoate †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Parathion †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Methyl parathion †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Permethrin (Cis/Trans) †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Phorate (Thimet) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Phosalone †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Phosmet †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Phosphamidon †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Pirimicarb †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Pirimiphos-ethyl †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Pirimiphos-methyl †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Procymidone †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Profenofos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Profluralin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5038	GJ5039	GJ5040		
Sampling Date		2019/04/22	2019/04/22	2019/04/22		
COC Number		B930137-QUEC-01-01	B930137-QUEC-01-01	B930137-QUEC-01-01		
	Units	VO4897-111-2	VO4898-111-5	VO4899-112-2	RDL	QC Batch
Prometryne †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Pronamide †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Propazine †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Propiconazole (Tilt) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Pyrazophos †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Quinalophos †	mg/kg	<0.030	<0.030	<0.030	0.030	1986831
Quintozene †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Simazine †	mg/kg	<0.010	<0.010	<0.010	0.010	1986831
Stirophos (Tetrachlorvinphos) †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Sulfotep †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Tecnazene †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Terbufos †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Terbutryne †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Terbuthylazine †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Tetradifon †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Tolyfluanid †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Triadimefon †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Triallate †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Trifluralin †	mg/kg	<0.050	<0.050	<0.050	0.050	1986831
Vinclozolin †	mg/kg	<0.020	<0.020	<0.020	0.020	1986831
Surrogate Recovery (%)						
13C-p,p'-DDE	%	75	68	77		1986831
2-Fluorobiphenyl	%	64	68	83		1986831
D5-Nitrobenzene	%	68	71	88		1986831
Triphenylphosphate	%	80	77	88		1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5041		
Sampling Date		2019/04/22		
COC Number		B930137-QUEC-01-01		
	Units	VO4900-112-4	RDL	QC Batch
% MOISTURE	%	14		
PESTICIDES				
Acephate †	mg/kg	<0.050	0.050	1986831
Alachlor †	mg/kg	<0.050	0.050	1986831
Aldrin †	mg/kg	<0.050	0.050	1986831
Aspon †	mg/kg	<0.010	0.010	1986831
Atrazine †	mg/kg	<0.030	0.030	1986831
Azinphos-ethyl †	mg/kg	<0.050	0.050	1986831
Azinphos-methyl †	mg/kg	<0.050	0.050	1986831
Benfluralin †	mg/kg	<0.020	0.020	1986831
a-BHC †	mg/kg	<0.010	0.010	1986831
b-BHC †	mg/kg	<0.010	0.010	1986831
d-BHC †	mg/kg	<0.010	0.010	1986831
Bromacil †	mg/kg	<0.020	0.020	1986831
Bromophos †	mg/kg	<0.010	0.010	1986831
Bromophos-ethyl †	mg/kg	<0.050	0.050	1986831
Butylate †	mg/kg	<0.020	0.020	1986831
Captan †	mg/kg	<0.10	0.10	1986831
Carbofenthion †	mg/kg	<0.010	0.010	1986831
Chlorbenside †	mg/kg	<0.050	0.050	1986831
a-Chlordane †	mg/kg	<0.010	0.010	1986831
g-Chlordane †	mg/kg	<0.010	0.010	1986831
Chlorfenson (Ovex) †	mg/kg	<0.020	0.020	1986831
Chlorfenvinphos (E/Z) †	mg/kg	<0.010	0.010	1986831
Chlormephos †	mg/kg	<0.050	0.050	1986831
Chlorothalonil (Daconil) †	mg/kg	<0.020	0.020	1986831
Chlorpropham †	mg/kg	<0.020	0.020	1986831
Chlorpyrifos †	mg/kg	<0.010	0.010	1986831
Chlorpyrifos-methyl †	mg/kg	<0.030	0.030	1986831
Dacthal (Chlorthal-Dimethyl) †	mg/kg	<0.050	0.050	1986831
Chlorthiophos †	mg/kg	<0.030	0.030	1986831
Cyanazine (Bladex) †	mg/kg	<0.030	0.030	1986831
Cyanophos †	mg/kg	<0.050	0.050	1986831
o,p'-DDD †	mg/kg	<0.010	0.010	1986831
o,p'-DDE †	mg/kg	<0.010	0.010	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5041		
Sampling Date		2019/04/22		
COC Number		B930137-QUEC-01-01		
	Units	VO4900-112-4	RDL	QC Batch
p,p'-DDE †	mg/kg	<0.010	0.010	1986831
o,p-DDT + p,p-DDD †	mg/kg	<0.020	0.020	1986831
p,p'-DDT †	mg/kg	<0.010	0.010	1986831
Desethyl atrazine †	mg/kg	<0.030	0.030	1986831
Demeton (O+S) †	mg/kg	<0.020	0.020	1986831
Desmetryn †	mg/kg	<0.030	0.030	1986831
Diallate(E/Z) †	mg/kg	<0.020	0.020	1986831
Diazinon †	mg/kg	<0.020	0.020	1986831
Dichlobenil †	mg/kg	<0.050	0.050	1986831
Dicloran †	mg/kg	<0.050	0.050	1986831
Dichlorfenthion †	mg/kg	<0.020	0.020	1986831
Dichlofluanid †	mg/kg	<0.020	0.020	1986831
Dichlorvos & Naled †	mg/kg	<0.050	0.050	1986831
Diclofop-methyl †	mg/kg	<0.010	0.010	1986831
Dicofol †	mg/kg	<0.10	0.10	1986831
Dicrotophos †	mg/kg	<0.050	0.050	1986831
Dieldrin †	mg/kg	<0.020	0.020	1986831
Dimethoate †	mg/kg	<0.020	0.020	1986831
Dioxathion †	mg/kg	<0.020	0.020	1986831
Diphenylamine †	mg/kg	<0.050	0.050	1986831
Disulfoton (Di-Syston) †	mg/kg	<0.020	0.020	1986831
Endosulfan sulfate †	mg/kg	<0.010	0.010	1986831
Endosulfan I †	mg/kg	<0.10	0.10	1986831
Endosulfan II †	mg/kg	<0.020	0.020	1986831
Endrin †	mg/kg	<0.040	0.040	1986831
Endrin aldehyde †	mg/kg	<0.040	0.040	1986831
Endrin Ketone †	mg/kg	<0.040	0.040	1986831
EPN †	mg/kg	<0.050	0.050	1986831
Eptam (EPTC) †	mg/kg	<0.050	0.050	1986831
Ethalfluralin †	mg/kg	<0.050	0.050	1986831
Ethion †	mg/kg	<0.050	0.050	1986831
Fenchlorphos (Ronnel) †	mg/kg	<0.050	0.050	1986831
Fenitrothion †	mg/kg	<0.020	0.020	1986831
Fenthion †	mg/kg	<0.020	0.020	1986831
Fensulfothion †	mg/kg	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5041		
Sampling Date		2019/04/22		
COC Number		B930137-QUEC-01-01		
	Units	VO4900-112-4	RDL	QC Batch
Folpet †	mg/kg	<0.10	0.10	1986831
Fonofos †	mg/kg	<0.050	0.050	1986831
Heptachlor †	mg/kg	<0.010	0.010	1986831
Heptachlor epoxide †	mg/kg	<0.010	0.010	1986831
Hexachlorobenzene †	mg/kg	<0.030	0.030	1986831
Hexazinone †	mg/kg	<0.050	0.050	1986831
Iodofenphos †	mg/kg	<0.010	0.010	1986831
Iprodione (Rovral) †	mg/kg	<0.050	0.050	1986831
Isofenphos †	mg/kg	<0.020	0.020	1986831
Lindane (BHC-Gamma) †	mg/kg	<0.010	0.010	1986831
Malaoxon †	mg/kg	<0.10	0.10	1986831
Malathion †	mg/kg	<0.010	0.010	1986831
Metalaxyl †	mg/kg	<0.020	0.020	1986831
Methamidophos †	mg/kg	<0.050	0.050	1986831
Methidathion †	mg/kg	<0.020	0.020	1986831
4,4'-methoxychlor †	mg/kg	<0.050	0.050	1986831
Metolachlor (Dual) †	mg/kg	<0.020	0.020	1986831
Metribuzin (Sencor) †	mg/kg	<0.050	0.050	1986831
Mevinphos, cis/trans (Phosdrin) †	mg/kg	<0.050	0.050	1986831
Mirex †	mg/kg	<0.020	0.020	1986831
Nitrofen †	mg/kg	<0.050	0.050	1986831
Omethoate †	mg/kg	<0.050	0.050	1986831
Parathion †	mg/kg	<0.050	0.050	1986831
Methyl parathion †	mg/kg	<0.020	0.020	1986831
Permethrin (Cis/Trans) †	mg/kg	<0.050	0.050	1986831
Phorate (Thimet) †	mg/kg	<0.020	0.020	1986831
Phosalone †	mg/kg	<0.050	0.050	1986831
Phosmet †	mg/kg	<0.030	0.030	1986831
Phosphamidon †	mg/kg	<0.050	0.050	1986831
Pirimicarb †	mg/kg	<0.050	0.050	1986831
Pirimiphos-ethyl †	mg/kg	<0.020	0.020	1986831
Pirimiphos-methyl †	mg/kg	<0.020	0.020	1986831
Procymidone †	mg/kg	<0.050	0.050	1986831
Profenofos †	mg/kg	<0.050	0.050	1986831
Profluralin †	mg/kg	<0.020	0.020	1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

PESTICIDES (SOIL)

Maxxam ID		GJ5041		
Sampling Date		2019/04/22		
COC Number		B930137-QUEC-01-01		
	Units	VO4900-112-4	RDL	QC Batch
Prometryne †	mg/kg	<0.030	0.030	1986831
Pronamide †	mg/kg	<0.050	0.050	1986831
Propazine †	mg/kg	<0.020	0.020	1986831
Propiconazole (Tilt) †	mg/kg	<0.020	0.020	1986831
Pyrazophos †	mg/kg	<0.020	0.020	1986831
Quinalophos †	mg/kg	<0.030	0.030	1986831
Quintozene †	mg/kg	<0.050	0.050	1986831
Simazine †	mg/kg	<0.010	0.010	1986831
Stirophos (Tetrachlorvinphos) †	mg/kg	<0.020	0.020	1986831
Sulfotep †	mg/kg	<0.020	0.020	1986831
Tecnazene †	mg/kg	<0.050	0.050	1986831
Terbufos †	mg/kg	<0.050	0.050	1986831
Terbutryne †	mg/kg	<0.020	0.020	1986831
Terbuthylazine †	mg/kg	<0.020	0.020	1986831
Tetradifon †	mg/kg	<0.020	0.020	1986831
Tolyfluanid †	mg/kg	<0.050	0.050	1986831
Triadimefon †	mg/kg	<0.050	0.050	1986831
Triallate †	mg/kg	<0.020	0.020	1986831
Trifluralin †	mg/kg	<0.050	0.050	1986831
Vinclozolin †	mg/kg	<0.020	0.020	1986831
Surrogate Recovery (%)				
13C-p,p'-DDE	%	71		1986831
2-Fluorobiphenyl	%	73		1986831
D5-Nitrobenzene	%	76		1986831
Triphenylphosphate	%	81		1986831

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
† Parameter is not accreditable

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GENERAL COMMENTS

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
1986831	AK2	Spiked Blank	13C-p,p'-DDE	2019/05/09		77	%	50 - 130
			2-Fluorobiphenyl	2019/05/09		99	%	50 - 130
			D5-Nitrobenzene	2019/05/09		104	%	50 - 130
			Triphenylphosphate	2019/05/09		94	%	50 - 130
			Acephate	2019/05/09		133 (1)	%	50 - 130
			Alachlor	2019/05/09		108	%	50 - 130
			Aldrin	2019/05/09		84	%	50 - 130
			Aspon	2019/05/09		101	%	50 - 130
			Atrazine	2019/05/09		97	%	50 - 130
			Azinphos-ethyl	2019/05/09		110	%	50 - 130
			Azinphos-methyl	2019/05/09		99	%	50 - 130
			Benfluralin	2019/05/09		71	%	50 - 130
			a-BHC	2019/05/09		86	%	50 - 130
			b-BHC	2019/05/09		82	%	50 - 130
			d-BHC	2019/05/09		86	%	50 - 130
			Bromacil	2019/05/09		66	%	50 - 130
			Bromophos	2019/05/09		84	%	50 - 130
			Bromophos-ethyl	2019/05/09		77	%	50 - 130
			Butylate	2019/05/09		87	%	50 - 130
			Captan	2019/05/09		6.0 (1)	%	50 - 130
			Carbofenthion	2019/05/09		97	%	50 - 130
			Chlorbenside	2019/05/09		64	%	50 - 130
			a-Chlordane	2019/05/09		80	%	50 - 130
			g-Chlordane	2019/05/09		82	%	50 - 130
			Chlorfenson (Ovex)	2019/05/09		75	%	50 - 130
			Chlorfenvinphos (E/Z)	2019/05/09		91	%	50 - 120
			Chlormephos	2019/05/09		85	%	50 - 130
			Chlorothalonil (Daconil)	2019/05/09		6.5 (1)	%	50 - 130
			Chlorpropham	2019/05/09		87	%	50 - 130
			Chlorpyrifos	2019/05/09		88	%	50 - 130
			Chlorpyrifos-methyl	2019/05/09		88	%	50 - 130
			Dacthal (Chlorthal-Dimethyl)	2019/05/09		72	%	50 - 130
			Chlorthiophos	2019/05/09		69	%	50 - 130
			Cyanazine (Bladex)	2019/05/09		106	%	50 - 130
			Cyanophos	2019/05/09		102	%	50 - 130
			o,p'-DDD	2019/05/09		79	%	50 - 130
			o,p'-DDE	2019/05/09		82	%	50 - 130
			p,p'-DDE	2019/05/09		82	%	50 - 130
			o,p-DDT + p,p-DDD	2019/05/09		81	%	50 - 130
			p,p'-DDT	2019/05/09		82	%	50 - 130
			Desethyl atrazine	2019/05/09		91	%	50 - 130
			Demeton (O+S)	2019/05/09		65	%	50 - 130
			Desmetryn	2019/05/09		77	%	50 - 130
			Diallate(E/Z)	2019/05/09		100	%	50 - 130
			Diazinon	2019/05/09		92	%	50 - 130
			Dichlobenil	2019/05/09		111	%	50 - 130
			Dicloran	2019/05/09		71	%	50 - 130
			Dichlorfenthion	2019/05/09		87	%	50 - 130
			Dichlofluanid	2019/05/09		24 (1)	%	50 - 130
			Dichlorvos & Naled	2019/05/09		85	%	50 - 130
			Diclofop-methyl	2019/05/09		103	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Dicofol	2019/05/09		118	%	50 - 130
			Dicrotophos	2019/05/09		93	%	50 - 130
			Dieldrin	2019/05/09		86	%	50 - 130
			Dimethoate	2019/05/09		116	%	50 - 130
			Dioxathion	2019/05/09		78	%	50 - 130
			Diphenylamine	2019/05/09		74	%	50 - 130
			Disulfoton (Di-Syston)	2019/05/09		90	%	50 - 130
			Endosulfan sulfate	2019/05/09		83	%	50 - 130
			Endosulfan I	2019/05/09		65	%	50 - 130
			Endosulfan II	2019/05/09		55	%	50 - 130
			Endrin	2019/05/09		107	%	50 - 130
			Endrin aldehyde	2019/05/09		71	%	50 - 130
			Endrin Ketone	2019/05/09		77	%	50 - 130
			EPN	2019/05/09		85	%	50 - 130
			Eptam (EPTC)	2019/05/09		91	%	50 - 130
			Ethalfluralin	2019/05/09		89	%	50 - 130
			Ethion	2019/05/09		96	%	50 - 130
			Fenchlorphos (Ronnel)	2019/05/09		94	%	50 - 130
			Fenitrothion	2019/05/09		85	%	50 - 130
			Fenthion	2019/05/09		73	%	50 - 130
			Fensulfothion	2019/05/09		138 (1)	%	50 - 130
			Folpet	2019/05/09		6.0 (1)	%	50 - 130
			Fonofos	2019/05/09		99	%	50 - 130
			Heptachlor	2019/05/09		100	%	50 - 130
			Heptachlor epoxide	2019/05/09		88	%	50 - 130
			Hexachlorobenzene	2019/05/09		28 (1)	%	50 - 130
			Hexazinone	2019/05/09		80	%	50 - 130
			Iodofenphos	2019/05/09		74	%	50 - 130
			Iprodione (Rovral)	2019/05/09		6.0 (1)	%	50 - 130
			Isofenphos	2019/05/09		79	%	50 - 130
			Lindane (BHC-Gamma)	2019/05/09		91	%	50 - 130
			Malaoxon	2019/05/09		56	%	50 - 130
			Malathion	2019/05/09		99	%	50 - 130
			Metalaxyl	2019/05/09		77	%	50 - 130
			Methamidophos	2019/05/09		107	%	50 - 130
			Methidathion	2019/05/09		83	%	50 - 130
			4,4'-methoxychlor	2019/05/09		98	%	50 - 130
			Metolachlor (Dual)	2019/05/09		110	%	50 - 130
			Metribuzin (Sencor)	2019/05/09		109	%	50 - 130
			Mevinphos, cis/trans (Phosdrin)	2019/05/09		132 (1)	%	50 - 130
			Mirex	2019/05/09		82	%	50 - 130
			Nitrofen	2019/05/09		84	%	50 - 130
			Omethoate	2019/05/09		162 (1)	%	50 - 130
			Parathion	2019/05/09		63	%	50 - 130
			Methyl parathion	2019/05/09		90	%	50 - 130
			Permethrin (Cis/Trans)	2019/05/09		108	%	50 - 130
			Phorate (Thimet)	2019/05/09		80	%	50 - 130
			Phosalone	2019/05/09		103	%	50 - 130
			Phosmet	2019/05/09		6.0 (1)	%	50 - 130
			Phosphamidon	2019/05/09		120	%	50 - 130
			Pirimicarb	2019/05/09		89	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Pirimiphos-ethyl	2019/05/09		88	%	50 - 130
			Pirimiphos-methyl	2019/05/09		91	%	50 - 130
			Procymidone	2019/05/09		71	%	50 - 130
			Profenofos	2019/05/09		78	%	50 - 130
			Profluralin	2019/05/09		72	%	50 - 130
			Prometryne	2019/05/09		87	%	50 - 130
			Pronamide	2019/05/09		82	%	50 - 130
			Propazine	2019/05/09		89	%	50 - 130
			Propiconazole (Tilt)	2019/05/09		76	%	50 - 130
			Pyrazophos	2019/05/09		102	%	50 - 130
			Quinalophos	2019/05/09		70	%	50 - 130
			Quintozene	2019/05/09		79	%	50 - 130
			Simazine	2019/05/09		98	%	50 - 130
			Stirophos (Tetrachlorvinphos)	2019/05/09		87	%	50 - 130
			Sulfotep	2019/05/09		92	%	50 - 130
			Tecnazene	2019/05/09		81	%	50 - 130
			Terbufos	2019/05/09		113	%	50 - 130
			Terbutryne	2019/05/09		89	%	50 - 130
			Terbuthylazine	2019/05/09		74	%	50 - 130
			Tetradifon	2019/05/09		85	%	50 - 130
			Tolyfluanid	2019/05/09		38 (1)	%	50 - 130
			Triadimefon	2019/05/09		69	%	50 - 130
			Triallate	2019/05/09		98	%	50 - 130
			Trifluralin	2019/05/09		85	%	50 - 130
			Vinclozolin	2019/05/09		67	%	50 - 130
1986831	AK2	Method Blank	13C-p,p'-DDE	2019/05/09		80	%	50 - 130
			2-Fluorobiphenyl	2019/05/09		96	%	50 - 130
			D5-Nitrobenzene	2019/05/09		102	%	50 - 130
			Triphenylphosphate	2019/05/09		81	%	50 - 130
			Acephate	2019/05/09	<0.050		mg/kg	
			Alachlor	2019/05/09	<0.050		mg/kg	
			Aldrin	2019/05/09	<0.050		mg/kg	
			Aspon	2019/05/09	<0.010		mg/kg	
			Atrazine	2019/05/09	<0.030		mg/kg	
			Azinphos-ethyl	2019/05/09	<0.050		mg/kg	
			Azinphos-methyl	2019/05/09	<0.050		mg/kg	
			Benfluralin	2019/05/09	<0.020		mg/kg	
			a-BHC	2019/05/09	<0.010		mg/kg	
			b-BHC	2019/05/09	<0.010		mg/kg	
			d-BHC	2019/05/09	<0.010		mg/kg	
			Bromacil	2019/05/09	<0.020		mg/kg	
			Bromophos	2019/05/09	<0.010		mg/kg	
			Bromophos-ethyl	2019/05/09	<0.050		mg/kg	
			Butylate	2019/05/09	<0.020		mg/kg	
			Captan	2019/05/09	<0.10		mg/kg	
			Carbofenthion	2019/05/09	<0.010		mg/kg	
			Chlorbenside	2019/05/09	<0.050		mg/kg	
			a-Chlordane	2019/05/09	<0.010		mg/kg	
			g-Chlordane	2019/05/09	<0.010		mg/kg	
			Chlorfenson (Ovex)	2019/05/09	<0.020		mg/kg	
			Chlorfenvinphos (E/Z)	2019/05/09	<0.010		mg/kg	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Chlormephos	2019/05/09	<0.050		mg/kg	
			Chlorothalonil (Daconil)	2019/05/09	<0.020		mg/kg	
			Chlorpropham	2019/05/09	<0.020		mg/kg	
			Chlorpyrifos	2019/05/09	<0.010		mg/kg	
			Chlorpyrifos-methyl	2019/05/09	<0.030		mg/kg	
			Dacthal (Chlorthal-Dimethyl)	2019/05/09	<0.050		mg/kg	
			Chlorthiophos	2019/05/09	<0.030		mg/kg	
			Cyanazine (Bladex)	2019/05/09	<0.030		mg/kg	
			Cyanophos	2019/05/09	<0.050		mg/kg	
			o,p'-DDD	2019/05/09	<0.010		mg/kg	
			o,p'-DDE	2019/05/09	<0.010		mg/kg	
			p,p'-DDE	2019/05/09	<0.010		mg/kg	
			o,p-DDT + p,p-DDD	2019/05/09	<0.020		mg/kg	
			p,p'-DDT	2019/05/09	<0.010		mg/kg	
			Desethyl atrazine	2019/05/09	<0.030		mg/kg	
			Demeton (O+S)	2019/05/09	<0.020		mg/kg	
			Desmetryn	2019/05/09	<0.030		mg/kg	
			Diallate(E/Z)	2019/05/09	<0.020		mg/kg	
			Diazinon	2019/05/09	<0.020		mg/kg	
			Dichlobenil	2019/05/09	<0.050		mg/kg	
			Dicloran	2019/05/09	<0.050		mg/kg	
			Dichlorfenthion	2019/05/09	<0.020		mg/kg	
			Dichlofluanid	2019/05/09	<0.020		mg/kg	
			Dichlorvos & Naled	2019/05/09	<0.050		mg/kg	
			Diclofop-methyl	2019/05/09	<0.010		mg/kg	
			Dicofol	2019/05/09	<0.10		mg/kg	
			Dicrotophos	2019/05/09	<0.050		mg/kg	
			Dieldrin	2019/05/09	<0.020		mg/kg	
			Dimethoate	2019/05/09	<0.020		mg/kg	
			Dioxathion	2019/05/09	<0.020		mg/kg	
			Diphenylamine	2019/05/09	<0.050		mg/kg	
			Disulfoton (Di-Syston)	2019/05/09	<0.020		mg/kg	
			Endosulfan sulfate	2019/05/09	<0.010		mg/kg	
			Endosulfan I	2019/05/09	<0.10		mg/kg	
			Endosulfan II	2019/05/09	<0.020		mg/kg	
			Endrin	2019/05/09	<0.040		mg/kg	
			Endrin aldehyde	2019/05/09	<0.040		mg/kg	
			Endrin Ketone	2019/05/09	<0.040		mg/kg	
			EPN	2019/05/09	<0.050		mg/kg	
			Eptam (EPTC)	2019/05/09	<0.050		mg/kg	
			Ethalfluralin	2019/05/09	<0.050		mg/kg	
			Ethion	2019/05/09	<0.050		mg/kg	
			Fenchlorphos (Ronnel)	2019/05/09	<0.050		mg/kg	
			Fenitrothion	2019/05/09	<0.020		mg/kg	
			Fenthion	2019/05/09	<0.020		mg/kg	
			Fensulfothion	2019/05/09	<0.020		mg/kg	
			Folpet	2019/05/09	<0.10		mg/kg	
			Fonofos	2019/05/09	<0.050		mg/kg	
			Heptachlor	2019/05/09	<0.010		mg/kg	
			Heptachlor epoxide	2019/05/09	<0.010		mg/kg	
			Hexachlorobenzene	2019/05/09	<0.030		mg/kg	

889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Hexazinone	2019/05/09	<0.050		mg/kg	
			Iodofenphos	2019/05/09	<0.010		mg/kg	
			Iprodione (Rovral)	2019/05/09	<0.050		mg/kg	
			Isofenphos	2019/05/09	<0.020		mg/kg	
			Lindane (BHC-Gamma)	2019/05/09	<0.010		mg/kg	
			Malaoxon	2019/05/09	<0.10		mg/kg	
			Malathion	2019/05/09	<0.010		mg/kg	
			Metalaxyl	2019/05/09	<0.020		mg/kg	
			Methamidophos	2019/05/09	<0.050		mg/kg	
			Methidathion	2019/05/09	<0.020		mg/kg	
			4,4'-methoxychlor	2019/05/09	<0.050		mg/kg	
			Metolachlor (Dual)	2019/05/09	<0.020		mg/kg	
			Metribuzin (Sencor)	2019/05/09	<0.050		mg/kg	
			Mevinphos, cis/trans (Phosdrin)	2019/05/09	<0.050		mg/kg	
			Mirex	2019/05/09	<0.020		mg/kg	
			Nitrofen	2019/05/09	<0.050		mg/kg	
			Omethoate	2019/05/09	<0.050		mg/kg	
			Parathion	2019/05/09	<0.050		mg/kg	
			Methyl parathion	2019/05/09	<0.020		mg/kg	
			Permethrin (Cis/Trans)	2019/05/09	<0.050		mg/kg	
			Phorate (Thimet)	2019/05/09	<0.020		mg/kg	
			Phosalone	2019/05/09	<0.050		mg/kg	
			Phosmet	2019/05/09	<0.030		mg/kg	
			Phosphamidon	2019/05/09	<0.050		mg/kg	
			Pirimicarb	2019/05/09	<0.050		mg/kg	
			Pirimiphos-ethyl	2019/05/09	<0.020		mg/kg	
			Pirimiphos-methyl	2019/05/09	<0.020		mg/kg	
			Procymidone	2019/05/09	<0.050		mg/kg	
			Profenofos	2019/05/09	<0.050		mg/kg	
			Profluralin	2019/05/09	<0.020		mg/kg	
			Prometryne	2019/05/09	<0.030		mg/kg	
			Pronamide	2019/05/09	<0.050		mg/kg	
			Propazine	2019/05/09	<0.020		mg/kg	
			Propiconazole (Tilt)	2019/05/09	<0.020		mg/kg	
			Pyrazophos	2019/05/09	<0.020		mg/kg	
			Quinalophos	2019/05/09	<0.030		mg/kg	
			Quintozene	2019/05/09	<0.050		mg/kg	
			Simazine	2019/05/09	<0.010		mg/kg	
			Stirophos (Tetrachlorvinphos)	2019/05/09	<0.020		mg/kg	
			Sulfotep	2019/05/09	<0.020		mg/kg	
			Tecnazene	2019/05/09	<0.050		mg/kg	
			Terbufos	2019/05/09	<0.050		mg/kg	
			Terbutryne	2019/05/09	<0.020		mg/kg	
			Terbuthylazine	2019/05/09	<0.020		mg/kg	
			Tetradifon	2019/05/09	<0.020		mg/kg	
			Tolyfluanid	2019/05/09	<0.050		mg/kg	
			Triadimefon	2019/05/09	<0.050		mg/kg	
			Triallate	2019/05/09	<0.020		mg/kg	
			Trifluralin	2019/05/09	<0.050		mg/kg	

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Maxxam Job #: B914523
Report Date: 2019/05/13

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Vinclozolin	2019/05/09	<0.020		mg/kg	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) Recovery or relative percent difference (RPD) for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria

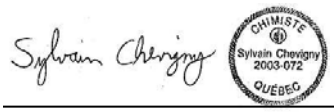
889 Montée de Liesse, Ville St-Laurent, Québec, Canada H4T 1P5 Tel: (514) 448-9001 Fax: (514) 448-9199 Ligne sans frais : 1-877-4MAXXAM (462-9926)

Maxxam Job #: B914523
Report Date: 2019/05/13

MAXXAM ANALYTICS. INC
Client Project #: B930137
Site Location: STRATHMORE
Sampler Initials: SB

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Sylvain Chevigny, B.Sc., Chemist, Scientific Service Specialist

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam
A Bureau Veritas Group Company

Sent to: **Maxxam Montreal**
889 Montee de Liesse
Ville St-Laurent, QC, H4T 1P5
Tel: (514) 448-9001

MAXXAM INTERLAB CHAIN OF CUSTODY RECORD

COC # B930137-QUEC-01-01

REPORT INFORMATION	
Company:	Maxxam
Address:	4000 19st N.E, Calgary, Alberta, T2E 6P8
Contact Name:	Linsay Sunderman
Email:	LSunderman@maxxam.ca, calgarycustomerservice@maxxamanalytics.com
Phone:	(403) 735-2237 ext. 2237
Maxxam Project #:	B930137
Client Invoice To:	CLIFTON ASSOCIATES LTD. (4090)
Client Report To:	CLIFTON ASSOCIATES LTD. (4090)

ANALYSIS REQUESTED

Job Barcode Label

B914523_COC

#	SAMPLE ID	MATRIX	DATE SAMPLED (YYYY/MM/DD)	TIME SAMPLED (HH:MM)	SAMPLER INITIALS	# CONT.	Pesticide Diagnostic Scan by GC/MS	ADDITIONAL SAMPLE INFORMATION
1	VO4891-108-2	SOIL	2019/04/22		AM	1	X	(P: 02)
2	VO4892-108-5	SOIL	2019/04/22		AM	1	X	(P: 02)
3	VO4893-109-2	SOIL	2019/04/22		AM	1	X	(P: 02)
4	VO4894-109-5	SOIL	2019/04/22		AM	1	X	(P: 02)
5	VO4895-110-2	SOIL	2019/04/22		AM	1	X	(P: 02)
6	VO4896-110-5	SOIL	2019/04/22		AM	1	X	(P: 02)
7	VO4897-111-2	SOIL	2019/04/22		AM	1	X	(P: 02)
8	VO4898-111-5	SOIL	2019/04/22		AM	1	X	(P: 02)
9	VO4899-112-2	SOIL	2019/04/22		AM	1	X	(P: 02)
10	VO4900-112-4	SOIL	2019/04/22		AM	1	X	(P: 02)

01-May-19 09:30
Sophie Retailleau
B914523
TLN

SITE LOCATION:	REGULATORY CRITERIA	SPECIAL INSTRUCTIONS	REQUIRED EDDs	TURNAROUND TIME
STRATHMORE		Please inform Maxxam immediately if you are not accredited for the requested test(s). **Please return a copy of this form with the report.**	National Excel (NX01)	☐ Rush Required 2019/05/14 Date Required *Please inform us if rush charges will be incurred.*
SITE #:				
PROJECT #: CG3198.1				
PO/AFE, TASK ORDER/SERVICE ORDER, LINE ITEM:				

COOLER ID:	YES	NO	Temp: (°C)			
Custody Seal Present	✓					
Custody Seal Intact	✓					
Cooling Media Present				3	5	7

COOLER ID:	YES	NO	Temp: (°C)			
Custody Seal Present						
Custody Seal Intact						
Cooling Media Present						

COOLER ID:	YES	NO	Temp: (°C)			
Custody Seal Present						
Custody Seal Intact						
Cooling Media Present						

RECEIVING LAB USE ONLY
Maxxam Job #

RELINQUISHED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	RECEIVED BY: (SIGN & PRINT)	DATE: (YYYY/MM/DD)	TIME: (HH:MM)	Samples Labelled By:	Labels Verified By:
1. Sara Bischoff	2019/04/30	14:18	1. THONG-WAH NGUYEN	2019-05-01	09:30		
2.			2.				

WF532
UPS

Calgary Archiving Generic account

From: Calgary Archiving Generic account
Sent: 2019/04/30 1:37 PM
To: Calgary Archiving Generic account
Subject: Found:ADD ON B930137 - please send opened jars RE: Pesticides and Herbicides

NI_Samp	NI_Part	Bin	Code
VO4891	02	ARC-0805	F3-R2-S01
VO4892	02	ARC-0805	F3-R2-S01
VO4893	02	ARC-0805	F3-R2-S01
VO4894	02	ARC-0805	F3-R2-S01
VO4895	02	ARC-0805	F3-R2-S01
VO4896	02	ARC-0805	F3-R2-S01
VO4897	02	ARC-0859	F3-R6-S01
VO4898	02	ARC-0859	F3-R6-S01
VO4899	02	ARC-0859	F3-R6-S01
VO4900	02	ARC-0859	F3-R6-S01

Please send these opened jars to Montreal (if I've added the wrong location please update it :S Thank you)
PREPRO: I'm pretty sure our cut for Organics (F2-F4 and PAHs) has been taken already but please double check.
Thank you

Add-on: Tests added, distribute to lab
Confirmation: 2019/04/25 5:30:00 AM
TAT / Date Due: 2019/05/21 6:00:00 PM
Archiving: Circle one. Temperature exceedances for fridge for storage duration? Yes / No

Analysis	Job	ClntID	Cont	DGs	Extracted	AnalysisLocat	SampPart	SampLocat	Shelf	Bin	DGLocat	DGShelf	DGBin	mtrx_c
ZPESTSSL_S	B930137	108-2	EOR2			QUEC	VO4891-02	MCAL	F3-R2-S01	ARC-0805				SOIL

1

Maxxam
A Bureau Veritas Group Company

Your Project #: CG3198
Your C.O.C. #: 583091-01-01, 583091-02-01

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/31
Report #: R2730869
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B934265
Received: 2019/05/07, 17:21

Sample Matrix: Water
Samples Received: 16

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	8	N/A	2019/05/10	AB SOP-00005	SM 23 2320 B m
BTEX/F1 in Water by HS GC/MS/FID	15	N/A	2019/05/09	AB SOP-00039	CCME CWS/EPA 8260d m
F1-BTEX	15	N/A	2019/05/10		Auto Calc
Cadmium - low level CCME - Dissolved	8	N/A	2019/05/12		Auto Calc
Chloride by Automated Colourimetry	8	N/A	2019/05/14	AB SOP-00020	SM 23-4500-Cl-E m
Conductivity @25C	8	N/A	2019/05/10	AB SOP-00005	SM 23 2510 B m
CCME Hydrocarbons in Water (F2; C10-C16) (2)	14	2019/05/10	2019/05/10	AB SOP-00037 AB SOP-00040	CCME PHC-CWS m
Hardness	7	N/A	2019/05/12		Auto Calc
Hardness	1	N/A	2019/05/13		Auto Calc
Elements by ICP-Dissolved-Lab Filtered (3)	13	N/A	2019/05/12	AB SOP-00042	EPA 6010d R5 m
Elements by ICPMS-Dissolved-Lab Filtered (4)	13	N/A	2019/05/10	AB SOP-00043	EPA 6020b R2 m
Ion Balance	8	N/A	2019/05/10		Auto Calc
Sum of cations, anions	7	N/A	2019/05/12		Auto Calc
Sum of cations, anions	1	N/A	2019/05/13		Auto Calc
Nitrate and Nitrite	8	N/A	2019/05/14		Auto Calc
Nitrate + Nitrite-N (calculated)	1	N/A	2019/05/11		Auto Calc
Nitrate + Nitrite-N (calculated)	1	N/A	2019/05/13		Auto Calc
Nitrate + Nitrite-N (calculated)	11	N/A	2019/05/14		Auto Calc
Nitrogen (Nitrite - Nitrate) by IC	13	N/A	2019/05/11	AB SOP-00023	SM 23 4110 B m
Benzo[a]pyrene Equivalency (5)	5	N/A	2019/05/13		Auto Calc
PAH in Water by GC/MS	5	2019/05/10	2019/05/10	AB SOP-00037 / AB SOP-00003	EPA 3510C/8270E m
pH @25°C (6)	8	N/A	2019/05/10	AB SOP-00005	SM 23 4500-H+B m
Sulphate by Automated Colourimetry	8	N/A	2019/05/14	AB SOP-00018	SM 23 4500-SO4 E m
Total Dissolved Solids (Calculated)	8	N/A	2019/05/14		Auto Calc
Total Trihalomethanes Calculation	16	N/A	2019/05/10		Auto Calc
Total Kjeldahl Nitrogen	1	2019/05/11	2019/05/12	AB SOP-00008	EPA 351.1 R1978 m
Total Kjeldahl Nitrogen	4	2019/05/11	2019/05/13	AB SOP-00008	EPA 351.1 R1978 m
VOCs in Water by HS GC/MS (Std List)	16	N/A	2019/05/09	AB SOP-00056	EPA 5021a/8260d m
Pesticide Diagnostic Scan by GC/MS (1)	3	2019/05/13	2019/05/27	STL SOP-00259	EPA 8270D m
Pesticide Diagnostic Scan by GC/MS (1)	2	2019/05/13	2019/05/28	STL SOP-00259	EPA 8270D m

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your Project #: CG3198
Your C.O.C. #: 583091-01-01, 583091-02-01

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/31
Report #: R2730869
Version: 2 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B934265
Received: 2019/05/07, 17:21

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Maxxam Montreal (From Calgary)
(2) Silica gel clean up employed.
(3) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(4) Samples were filtered and preserved at the lab. Values may not reflect concentrations at the time of sampling. Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.
(5) B[a]P TPE is calculated using 1/2 of the RDL for non detect results as per Alberta Environment instructions. This protocol may not apply in other jurisdictions.
(6) The CCME method requires pH to be analysed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the CCME holding time. Maxxam endeavours to analyze samples as soon as possible after receipt.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Linsay Sunderman, Key Account Specialist
Email: LSunderman@maxxam.ca
Phone# (403)735-2237 Ext:2237

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

AT1 BTEX AND F1-F2 IN WATER (WATER)

Maxxam ID		VQ3851	VQ3851	VQ3852	VQ3853	VQ3854	VQ3855		
Sampling Date		2019/05/07 13:00	2019/05/07 13:00	2019/05/07 13:30	2019/05/07 14:00	2019/05/07 11:00	2019/05/07 10:30		
COC Number		583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-01-01		
	UNITS	**101**	**101 Lab-Dup**	**102**	**103**	**104**	**105**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	N/A	<0.10	<0.10	<0.10	<0.10	0.10	9411094
Volatiles									
Benzene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
Toluene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	0.00080	9410778
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
Xylenes (Total)	mg/L	<0.00089	N/A	<0.00089	<0.00089	<0.00089	<0.00089	0.00089	9409605
F1 (C6-C10) - BTEX	mg/L	<0.10	N/A	<0.10	<0.10	<0.10	<0.10	0.10	9409605
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9410778
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	99	94	95	100	98	104	N/A	9410778
4-Bromofluorobenzene (sur.)	%	102	102	102	99	101	99	N/A	9410778
D4-1,2-Dichloroethane (sur.)	%	105	109	111	99	110	98	N/A	9410778
O-TERPHENYL (sur.)	%	84	N/A	87	88	85	88	N/A	9411094

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

AT1 BTEX AND F1-F2 IN WATER (WATER)

Maxxam ID		VQ3856	VQ3857	VQ3858	VQ3859	VQ3861	VQ3862		
Sampling Date		2019/05/07 09:00	2019/05/07 11:40	2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20		
COC Number		583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-02-01	583091-02-01		
	UNITS	**106**	**107**	**108**	**109**	**111**	**112**	**RDL**	**QC Batch**
Ext. Pet. Hydrocarbon									
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9411094
Volatiles									
Benzene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
Toluene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	<0.00080	0.00080	9410778
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	<0.00040	0.00040	9410778
Xylenes (Total)	mg/L	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	<0.00089	0.00089	9409605
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9409605
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9410778
Surrogate Recovery (%)									
1,4-Difluorobenzene (sur.)	%	95	98	100	94	99	102	N/A	9410778
4-Bromofluorobenzene (sur.)	%	102	101	99	101	99	100	N/A	9410778
D4-1,2-Dichloroethane (sur.)	%	110	99	96	105	99	102	N/A	9410778
O-TERPHENYL (sur.)	%	86	83	99	95	94	108	N/A	9411094

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

AT1 BTEX AND F1-F2 IN WATER (WATER)

Maxxam ID		VQ3863	VQ3864	VQ3865		
Sampling Date		2019/05/07 10:30	2019/05/07 09:30	2019/05/07 15:40		
COC Number		583091-02-01	583091-02-01	583091-02-01		
	UNITS	195	MW9	191	RDL	QC Batch
Ext. Pet. Hydrocarbon						
F2 (C10-C16 Hydrocarbons)	mg/L	<0.10	<0.10	<0.10	0.10	9411094
Volatiles						
Benzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	9410778
Toluene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	9410778
Ethylbenzene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	9410778
m & p-Xylene	mg/L	<0.00080	<0.00080	<0.00080	0.00080	9410778
o-Xylene	mg/L	<0.00040	<0.00040	<0.00040	0.00040	9410778
Xylenes (Total)	mg/L	<0.00089	<0.00089	<0.00089	0.00089	9409605
F1 (C6-C10) - BTEX	mg/L	<0.10	<0.10	<0.10	0.10	9409605
F1 (C6-C10)	mg/L	<0.10	<0.10	<0.10	0.10	9410778
Surrogate Recovery (%)						
1,4-Difluorobenzene (sur.)	%	97	95	99	N/A	9410778
4-Bromofluorobenzene (sur.)	%	98	99	100	N/A	9410778
D4-1,2-Dichloroethane (sur.)	%	98	107	99	N/A	9410778
O-TERPHENYL (sur.)	%	90	92	102	N/A	9411094

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

AT1 BTEX AND F1 WATER (WATER)

Maxxam ID		VQ3860		
Sampling Date		2019/05/07 10:00		
COC Number		583091-01-01		
	UNITS	110	RDL	QC Batch
Volatiles				
Benzene	mg/L	<0.00040	0.00040	9410778
Toluene	mg/L	<0.00040	0.00040	9410778
Ethylbenzene	mg/L	<0.00040	0.00040	9410778
m & p-Xylene	mg/L	<0.00080	0.00080	9410778
o-Xylene	mg/L	<0.00040	0.00040	9410778
Xylenes (Total)	mg/L	<0.00089	0.00089	9408786
F1 (C6-C10) - BTEX	mg/L	<0.10	0.10	9408786
F1 (C6-C10)	mg/L	<0.10	0.10	9410778
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	99	N/A	9410778
4-Bromofluorobenzene (sur.)	%	97	N/A	9410778
D4-1,2-Dichloroethane (sur.)	%	97	N/A	9410778

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

ROUTINE + DISS. REG. METALS – LAB FILT (WATER)

Maxxam ID		VQ3851		VQ3852		VQ3853		
Sampling Date		2019/05/07 13:00		2019/05/07 13:30		2019/05/07 14:00		
COC Number		583091-01-01		583091-01-01		583091-01-01		
	UNITS	101	RDL	102	RDL	103	RDL	QC Batch
Calculated Parameters								
Anion Sum	meq/L	32	N/A	28	N/A	34	N/A	9408813
Cation Sum	meq/L	31	N/A	26	N/A	31	N/A	9408813
Hardness (CaCO3)	mg/L	940	0.50	690	0.50	830	0.50	9408799
Ion Balance (% Difference)	%	1.8	N/A	4.7	N/A	5.1	N/A	9408812
Dissolved Nitrate (NO3)	mg/L	30	0.044	0.24	0.044	<0.044	0.044	9408575
Nitrate plus Nitrite (N)	mg/L	7.0	0.014	0.069	0.014	<0.014	0.014	9412975
Dissolved Nitrite (NO2)	mg/L	0.57	0.033	0.046	0.033	<0.033	0.033	9408575
Calculated Total Dissolved Solids	mg/L	1700	10	1400	10	1700	10	9408841
Misc. Inorganics								
Conductivity	uS/cm	2900	2.0	2400	2.0	2900	2.0	9413250
pH	pH	7.66	N/A	7.66	N/A	7.66	N/A	9413249
Low Level Elements								
Dissolved Cadmium (Cd)	ug/L	0.13	0.020	0.064	0.020	0.043	0.020	9409293
Anions								
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	9413248
Alkalinity (Total as CaCO3)	mg/L	920	1.0	1100	1.0	1300	1.0	9413248
Bicarbonate (HCO3)	mg/L	1100	1.0	1300	1.0	1600	1.0	9413248
Carbonate (CO3)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	9413248
Hydroxide (OH)	mg/L	<1.0	1.0	<1.0	1.0	<1.0	1.0	9413248
Dissolved Sulphate (SO4)	mg/L	220 (1)	2.0	150	1.0	240 (1)	2.0	9416527
Dissolved Chloride (Cl)	mg/L	290 (1)	2.0	140	1.0	120	1.0	9416490
Nutrients								
Dissolved Nitrite (N)	mg/L	0.17	0.010	0.014	0.010	<0.010	0.010	9413246
Dissolved Nitrate (N)	mg/L	6.8	0.010	0.055	0.010	<0.010	0.010	9413246
Lab Filtered Elements								
Dissolved Aluminum (Al)	mg/L	0.0035	0.0030	<0.0030	0.0030	<0.0030	0.0030	9412743
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	<0.00060	0.00060	<0.00060	0.00060	9412743
Dissolved Arsenic (As)	mg/L	0.0013	0.00020	0.00053	0.00020	0.0052	0.00020	9412743
Dissolved Barium (Ba)	mg/L	0.16	0.010	0.15	0.010	0.093	0.010	9414669
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Boron (B)	mg/L	0.50	0.020	1.7	0.020	0.16	0.020	9414669

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

ROUTINE + DISS. REG. METALS – LAB FILT (WATER)

Maxxam ID		VQ3851		VQ3852		VQ3853		
Sampling Date		2019/05/07 13:00		2019/05/07 13:30		2019/05/07 14:00		
COC Number		583091-01-01		583091-01-01		583091-01-01		
	UNITS	101	RDL	102	RDL	103	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L	230	0.30	150	0.30	120	0.30	9414669
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Cobalt (Co)	mg/L	0.0066	0.00030	0.0049	0.00030	0.0077	0.00030	9412743
Dissolved Copper (Cu)	mg/L	0.0049	0.00020	0.0047	0.00020	0.00044	0.00020	9412743
Dissolved Iron (Fe)	mg/L	0.15	0.060	0.13	0.060	0.38	0.060	9414669
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	<0.00020	0.00020	<0.00020	0.00020	9412743
Dissolved Lithium (Li)	mg/L	0.046	0.020	0.074	0.020	0.061	0.020	9414669
Dissolved Magnesium (Mg)	mg/L	89	0.20	78	0.20	130	0.20	9414669
Dissolved Manganese (Mn)	mg/L	1.6	0.0040	2.0	0.0040	1.9	0.0040	9414669
Dissolved Molybdenum (Mo)	mg/L	0.010	0.00020	0.012	0.00020	0.0055	0.00020	9412743
Dissolved Nickel (Ni)	mg/L	0.026	0.00050	0.013	0.00050	0.018	0.00050	9412743
Dissolved Phosphorus (P)	mg/L	0.11	0.10	<0.10	0.10	<0.10	0.10	9414669
Dissolved Potassium (K)	mg/L	8.3	0.30	8.3	0.30	8.9	0.30	9414669
Dissolved Selenium (Se)	mg/L	0.00077	0.00020	0.00048	0.00020	0.00057	0.00020	9412743
Dissolved Silicon (Si)	mg/L	8.4	0.10	5.2	0.10	6.5	0.10	9414669
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	<0.00010	0.00010	<0.00010	0.00010	9412743
Dissolved Sodium (Na)	mg/L	270	0.50	270	0.50	330	0.50	9414669
Dissolved Strontium (Sr)	mg/L	1.2	0.020	1.1	0.020	1.1	0.020	9414669
Dissolved Sulphur (S)	mg/L	67	0.20	37	0.20	61	0.20	9414669
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	<0.00020	0.00020	<0.00020	0.00020	9412743
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Uranium (U)	mg/L	0.017	0.00010	0.028	0.00010	0.0058	0.00010	9412743
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	0.0084	0.0030	<0.0030	0.0030	9412743
RDL = Reportable Detection Limit								

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

ROUTINE + DISS. REG. METALS – LAB FILT (WATER)

Maxxam ID		VQ3854			VQ3855		VQ3857		
Sampling Date		2019/05/07 11:00			2019/05/07 10:30		2019/05/07 11:40		
COC Number		583091-01-01			583091-01-01		583091-01-01		
	UNITS	104	RDL	QC Batch	105	RDL	107	RDL	QC Batch
Calculated Parameters									
Anion Sum	meq/L	22	N/A	9408813	30	N/A	33	N/A	9408813
Cation Sum	meq/L	20	N/A	9408813	31	N/A	29	N/A	9408813
Hardness (CaCO3)	mg/L	690	0.50	9408799	970	0.50	920	0.50	9408799
Ion Balance (% Difference)	%	4.3	N/A	9408812	1.7	N/A	6.9	N/A	9408812
Dissolved Nitrate (NO3)	mg/L	<0.044	0.044	9408575	0.19	0.044	0.057	0.044	9408575
Nitrate plus Nitrite (N)	mg/L	<0.014	0.014	9412975	0.044	0.014	<0.014	0.014	9412975
Dissolved Nitrite (NO2)	mg/L	<0.033	0.033	9408575	<0.033	0.033	<0.033	0.033	9408575
Calculated Total Dissolved Solids	mg/L	1000	10	9408841	1900	10	1600	10	9408841
Misc. Inorganics									
Conductivity	uS/cm	1900	2.0	9413250	2500	2.0	2700	2.0	9413250
pH	pH	7.55	N/A	9413249	7.94	N/A	7.67	N/A	9413249
Low Level Elements									
Dissolved Cadmium (Cd)	ug/L	0.025	0.020	9409293	0.038	0.020	0.066	0.020	9409293
Anions									
Alkalinity (PP as CaCO3)	mg/L	<1.0	1.0	9413248	<1.0	1.0	<1.0	1.0	9413248
Alkalinity (Total as CaCO3)	mg/L	940	1.0	9413248	460	1.0	1300	1.0	9413248
Bicarbonate (HCO3)	mg/L	1100	1.0	9413248	570	1.0	1600	1.0	9413248
Carbonate (CO3)	mg/L	<1.0	1.0	9413248	<1.0	1.0	<1.0	1.0	9413248
Hydroxide (OH)	mg/L	<1.0	1.0	9413248	<1.0	1.0	<1.0	1.0	9413248
Dissolved Sulphate (SO4)	mg/L	16	1.0	9416527	980 (1)	10	140	1.0	9416527
Dissolved Chloride (Cl)	mg/L	96	1.0	9416490	8.5	1.0	99	1.0	9416490
Nutrients									
Dissolved Nitrite (N)	mg/L	<0.010	0.010	9413246	<0.010	0.010	<0.010	0.010	9413246
Dissolved Nitrate (N)	mg/L	<0.010	0.010	9413246	0.044	0.010	0.013	0.010	9413246
Lab Filtered Elements									
Dissolved Aluminum (Al)	mg/L	<0.0030	0.0030	9412743	<0.0030	0.0030	<0.0030	0.0030	9412743
Dissolved Antimony (Sb)	mg/L	<0.00060	0.00060	9412743	<0.00060	0.00060	<0.00060	0.00060	9412743
Dissolved Arsenic (As)	mg/L	0.0034	0.00020	9412743	0.00074	0.00020	0.0020	0.00020	9412743
Dissolved Barium (Ba)	mg/L	0.56	0.010	9414675	0.053	0.010	0.19	0.010	9414669
Dissolved Beryllium (Be)	mg/L	<0.0010	0.0010	9412743	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Boron (B)	mg/L	0.13	0.020	9414675	0.17	0.020	0.13	0.020	9414669

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

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ROUTINE + DISS. REG. METALS – LAB FILT (WATER)

Maxxam ID		VQ3854			VQ3855		VQ3857		
Sampling Date		2019/05/07 11:00			2019/05/07 10:30		2019/05/07 11:40		
COC Number		583091-01-01			583091-01-01		583091-01-01		
	UNITS	104	RDL	QC Batch	105	RDL	107	RDL	QC Batch
Dissolved Calcium (Ca)	mg/L	87	0.30	9414675	230	0.30	150	0.30	9414669
Dissolved Chromium (Cr)	mg/L	<0.0010	0.0010	9412743	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Cobalt (Co)	mg/L	0.0039	0.00030	9412743	0.00088	0.00030	0.0062	0.00030	9412743
Dissolved Copper (Cu)	mg/L	0.00035	0.00020	9412743	0.00086	0.00020	0.0040	0.00020	9412743
Dissolved Iron (Fe)	mg/L	0.20	0.060	9414675	0.14	0.060	0.25	0.060	9414669
Dissolved Lead (Pb)	mg/L	<0.00020	0.00020	9412743	<0.00020	0.00020	<0.00020	0.00020	9412743
Dissolved Lithium (Li)	mg/L	0.077	0.020	9414675	0.17	0.020	0.070	0.020	9414669
Dissolved Magnesium (Mg)	mg/L	120	0.20	9414675	97	0.20	130	0.20	9414669
Dissolved Manganese (Mn)	mg/L	1.5	0.0040	9414675	0.41	0.0040	0.83	0.0040	9414669
Dissolved Molybdenum (Mo)	mg/L	0.0020	0.00020	9412743	0.024	0.00020	0.0032	0.00020	9412743
Dissolved Nickel (Ni)	mg/L	0.0075	0.00050	9412743	0.0041	0.00050	0.016	0.00050	9412743
Dissolved Phosphorus (P)	mg/L	<0.10	0.10	9414675	<0.10	0.10	<0.10	0.10	9414669
Dissolved Potassium (K)	mg/L	3.9	0.30	9414675	9.5	0.30	9.3	0.30	9414669
Dissolved Selenium (Se)	mg/L	0.00042	0.00020	9412743	0.00078	0.00020	0.00096	0.00020	9412743
Dissolved Silicon (Si)	mg/L	6.2	0.10	9414675	6.7	0.10	8.3	0.10	9414669
Dissolved Silver (Ag)	mg/L	<0.00010	0.00010	9412743	<0.00010	0.00010	<0.00010	0.00010	9412743
Dissolved Sodium (Na)	mg/L	140	0.50	9414675	260	0.50	230	0.50	9414669
Dissolved Strontium (Sr)	mg/L	1.2	0.020	9414675	1.4	0.020	1.3	0.020	9414669
Dissolved Sulphur (S)	mg/L	4.8	0.20	9414675	310	0.20	35	0.20	9414669
Dissolved Thallium (Tl)	mg/L	<0.00020	0.00020	9412743	<0.00020	0.00020	<0.00020	0.00020	9412743
Dissolved Tin (Sn)	mg/L	<0.0010	0.0010	9412743	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Titanium (Ti)	mg/L	<0.0010	0.0010	9412743	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Uranium (U)	mg/L	0.0043	0.00010	9412743	0.034	0.00010	0.056	0.00010	9412743
Dissolved Vanadium (V)	mg/L	<0.0010	0.0010	9412743	<0.0010	0.0010	<0.0010	0.0010	9412743
Dissolved Zinc (Zn)	mg/L	<0.0030	0.0030	9412743	<0.0030	0.0030	<0.0030	0.0030	9412743
RDL = Reportable Detection Limit									

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ROUTINE + DISS. REG. METALS – LAB FILT (WATER)

Maxxam ID		VQ3863	VQ3863		VQ3864		
Sampling Date		2019/05/07 10:30	2019/05/07 10:30		2019/05/07 09:30		
COC Number		583091-02-01	583091-02-01		583091-02-01		
	UNITS	195	195 Lab-Dup	RDL	MW9	RDL	QC Batch
Calculated Parameters							
Anion Sum	meq/L	31	N/A	N/A	27	N/A	9408813
Cation Sum	meq/L	31	N/A	N/A	25	N/A	9408813
Hardness (CaCO3)	mg/L	1000	N/A	0.50	800	0.50	9408799
Ion Balance (% Difference)	%	0.38	N/A	N/A	5.6	N/A	9408812
Dissolved Nitrate (NO3)	mg/L	0.22	N/A	0.044	<0.044	0.044	9408575
Nitrate plus Nitrite (N)	mg/L	0.050	N/A	0.014	<0.014	0.014	9412975
Dissolved Nitrite (NO2)	mg/L	<0.033	N/A	0.033	<0.033	0.033	9408575
Calculated Total Dissolved Solids	mg/L	1900	N/A	10	1400	10	9408841
Misc. Inorganics							
Conductivity	uS/cm	2500	N/A	2.0	2300	2.0	9413250
pH	pH	7.93	N/A	N/A	7.58	N/A	9413249
Low Level Elements							
Dissolved Cadmium (Cd)	ug/L	0.041	N/A	0.020	<0.020	0.020	9409293
Anions							
Alkalinity (PP as CaCO3)	mg/L	<1.0	N/A	1.0	<1.0	1.0	9413248
Alkalinity (Total as CaCO3)	mg/L	460	N/A	1.0	930	1.0	9413248
Bicarbonate (HCO3)	mg/L	560	N/A	1.0	1100	1.0	9413248
Carbonate (CO3)	mg/L	<1.0	N/A	1.0	<1.0	1.0	9413248
Hydroxide (OH)	mg/L	<1.0	N/A	1.0	<1.0	1.0	9413248
Dissolved Sulphate (SO4)	mg/L	1000 (1)	N/A	5.0	260 (1)	2.0	9416527
Dissolved Chloride (Cl)	mg/L	9.3	N/A	1.0	120	1.0	9416490
Nutrients							
Dissolved Nitrite (N)	mg/L	<0.010	N/A	0.010	<0.010	0.010	9413246
Dissolved Nitrate (N)	mg/L	0.050	N/A	0.010	<0.010	0.010	9413246
Lab Filtered Elements							
Dissolved Aluminum (Al)	mg/L	<0.0030	N/A	0.0030	0.0035	0.0030	9412743
Dissolved Antimony (Sb)	mg/L	<0.00060	N/A	0.00060	0.00069	0.00060	9412743
Dissolved Arsenic (As)	mg/L	0.00076	N/A	0.00020	0.0056	0.00020	9412743
Dissolved Barium (Ba)	mg/L	0.049	0.048	0.010	0.18	0.010	9414669
Dissolved Beryllium (Be)	mg/L	<0.0010	N/A	0.0010	<0.0010	0.0010	9412743

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

ROUTINE + DISS. REG. METALS – LAB FILT (WATER)

Maxxam ID		VQ3863	VQ3863		VQ3864		
Sampling Date		2019/05/07 10:30	2019/05/07 10:30		2019/05/07 09:30		
COC Number		583091-02-01	583091-02-01		583091-02-01		
	UNITS	195	195 Lab-Dup	RDL	MW9	RDL	QC Batch
Dissolved Boron (B)	mg/L	0.17	0.17	0.020	0.36	0.020	9414669
Dissolved Calcium (Ca)	mg/L	240	240	0.30	110	0.30	9414669
Dissolved Chromium (Cr)	mg/L	<0.0010	N/A	0.0010	<0.0010	0.0010	9412743
Dissolved Cobalt (Co)	mg/L	0.0011	N/A	0.00030	0.0077	0.00030	9412743
Dissolved Copper (Cu)	mg/L	0.0011	N/A	0.00020	0.00072	0.00020	9412743
Dissolved Iron (Fe)	mg/L	0.12	0.13	0.060	0.86	0.060	9414669
Dissolved Lead (Pb)	mg/L	<0.00020	N/A	0.00020	<0.00020	0.00020	9412743
Dissolved Lithium (Li)	mg/L	0.16	0.16	0.020	0.061	0.020	9414669
Dissolved Magnesium (Mg)	mg/L	99	100	0.20	130	0.20	9414669
Dissolved Manganese (Mn)	mg/L	0.45	0.45	0.0040	1.4	0.0040	9414669
Dissolved Molybdenum (Mo)	mg/L	0.024	N/A	0.00020	0.0063	0.00020	9412743
Dissolved Nickel (Ni)	mg/L	0.0046	N/A	0.00050	0.015	0.00050	9412743
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	0.10	<0.10	0.10	9414669
Dissolved Potassium (K)	mg/L	9.2	9.2	0.30	8.6	0.30	9414669
Dissolved Selenium (Se)	mg/L	0.0010	N/A	0.00020	0.00069	0.00020	9412743
Dissolved Silicon (Si)	mg/L	6.8	7.0	0.10	4.8	0.10	9414669
Dissolved Silver (Ag)	mg/L	<0.00010	N/A	0.00010	<0.00010	0.00010	9412743
Dissolved Sodium (Na)	mg/L	250	250	0.50	190	0.50	9414669
Dissolved Strontium (Sr)	mg/L	1.4	1.4	0.020	1.2	0.020	9414669
Dissolved Sulphur (S)	mg/L	340	360	0.20	72	0.20	9414669
Dissolved Thallium (Tl)	mg/L	<0.00020	N/A	0.00020	<0.00020	0.00020	9412743
Dissolved Tin (Sn)	mg/L	<0.0010	N/A	0.0010	<0.0010	0.0010	9412743
Dissolved Titanium (Ti)	mg/L	<0.0010	N/A	0.0010	<0.0010	0.0010	9412743
Dissolved Uranium (U)	mg/L	0.035	N/A	0.00010	0.059	0.00010	9412743
Dissolved Vanadium (V)	mg/L	<0.0010	N/A	0.0010	<0.0010	0.0010	9412743
Dissolved Zinc (Zn)	mg/L	<0.0030	N/A	0.0030	<0.0030	0.0030	9412743

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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REG. METALS (CCME/AT1) – DISS. LAB FILT.

Maxxam ID		VQ3858	VQ3859	VQ3861	VQ3862	VQ3865		
Sampling Date		2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 15:40		
COC Number		583091-01-01	583091-01-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	108	109	111	112	191	RDL	QC Batch
Lab Filtered Elements								
Dissolved Aluminum (Al)	mg/L	0.0040	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	9412743
Dissolved Antimony (Sb)	mg/L	<0.00060	<0.00060	<0.00060	<0.00060	<0.00060	0.00060	9412743
Dissolved Arsenic (As)	mg/L	0.00085	0.00022	0.00038	0.00037	0.00043	0.00020	9412743
Dissolved Barium (Ba)	mg/L	0.050	0.13	0.094	0.15	0.096	0.010	9414669
Dissolved Beryllium (Be)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9412743
Dissolved Boron (B)	mg/L	0.13	1.0	0.19	0.17	0.064	0.020	9414669
Dissolved Calcium (Ca)	mg/L	76	85	83	75	88	0.30	9414669
Dissolved Chromium (Cr)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9412743
Dissolved Cobalt (Co)	mg/L	<0.00030	0.00033	<0.00030	0.00067	<0.00030	0.00030	9412743
Dissolved Copper (Cu)	mg/L	0.0011	0.00034	0.00030	0.00046	0.00042	0.00020	9412743
Dissolved Iron (Fe)	mg/L	0.060	0.099	0.091	0.10	0.091	0.060	9414669
Dissolved Lead (Pb)	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	9412743
Dissolved Lithium (Li)	mg/L	0.053	0.043	0.051	0.054	0.053	0.020	9414669
Dissolved Magnesium (Mg)	mg/L	41	66	64	78	65	0.20	9414669
Dissolved Manganese (Mn)	mg/L	0.055	0.29	0.072	0.25	0.078	0.0040	9414669
Dissolved Molybdenum (Mo)	mg/L	0.058	0.0069	0.0071	0.013	0.0085	0.00020	9412743
Dissolved Nickel (Ni)	mg/L	0.0030	0.0028	0.0017	0.0023	0.0019	0.00050	9412743
Dissolved Phosphorus (P)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9414669
Dissolved Potassium (K)	mg/L	6.1	3.6	2.7	4.2	3.0	0.30	9414669
Dissolved Selenium (Se)	mg/L	0.00095	<0.00020	0.00032	<0.00020	0.00043	0.00020	9412743
Dissolved Silicon (Si)	mg/L	4.9	5.5	5.9	5.4	5.9	0.10	9414669
Dissolved Silver (Ag)	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	9412743
Dissolved Sodium (Na)	mg/L	220	78	39	43	42	0.50	9414669
Dissolved Strontium (Sr)	mg/L	0.48	1.1	0.75	0.81	0.76	0.020	9414669
Dissolved Sulphur (S)	mg/L	58	25	28	23	29	0.20	9414669
Dissolved Thallium (Tl)	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	9412743
Dissolved Tin (Sn)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9412743
Dissolved Titanium (Ti)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9412743
Dissolved Uranium (U)	mg/L	0.038	0.010	0.019	0.022	0.019	0.00010	9412743
Dissolved Vanadium (V)	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9412743
Dissolved Zinc (Zn)	mg/L	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0030	9412743

RDL = Reportable Detection Limit

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Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

RESULTS OF CHEMICAL ANALYSES OF WATER

Maxxam ID		VQ3858			VQ3859		VQ3861	VQ3861		
Sampling Date		2019/05/07 14:30			2019/05/07 15:00		2019/05/07 15:40	2019/05/07 15:40		
COC Number		583091-01-01			583091-01-01		583091-02-01	583091-02-01		
	UNITS	108	RDL	QC Batch	109	QC Batch	111	111 Lab-Dup	RDL	QC Batch
Calculated Parameters										
Nitrate plus Nitrite (N)	mg/L	43	0.10	9408576	0.81	9408576	0.19	N/A	0.014	9408576
Nutrients										
Total Total Kjeldahl Nitrogen	mg/L	1.6	0.050	9413915	0.71	9413917	0.13	0.17	0.050	9413917
Dissolved Nitrite (N)	mg/L	0.31	0.010	9413246	0.044	9412830	<0.010	N/A	0.010	9413246
Dissolved Nitrate (N)	mg/L	43 (1)	0.10	9413246	0.77	9412830	0.19	N/A	0.010	9413246

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable
(1) Detection limits raised due to dilution to bring analyte within the calibrated range.

Maxxam ID		VQ3862	VQ3862		VQ3865		
Sampling Date		2019/05/07 14:20	2019/05/07 14:20		2019/05/07 15:40		
COC Number		583091-02-01	583091-02-01		583091-02-01		
	UNITS	112	112 Lab-Dup	QC Batch	191	RDL	QC Batch
Calculated Parameters							
Nitrate plus Nitrite (N)	mg/L	0.046	N/A	9408576	0.28	0.014	9408576
Nutrients							
Total Total Kjeldahl Nitrogen	mg/L	0.55	N/A	9413917	0.17	0.050	9413915
Dissolved Nitrite (N)	mg/L	<0.010	<0.010	9413246	0.011	0.010	9412830
Dissolved Nitrate (N)	mg/L	0.046	0.047	9413246	0.27	0.010	9412830

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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PESTICIDES BY GC-MS (WATER)

Maxxam ID		VQ3858	VQ3859	VQ3861	VQ3862	VQ3865		
Sampling Date		2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 15:40		
COC Number		583091-01-01	583091-01-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	108	109	111	112	191	RDL	QC Batch
Pesticides & Herbicides								
Alachlor	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Aldrin	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9443808
Aspon	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Atrazine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Azinphos ethyl	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9443808
Azinphos-methyl	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9443808
Benfluralin	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
a-BHC	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
b-BHC	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
d-BHC	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Bromacil	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Bromophos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Bromophos-ethyl	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Butylate	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Captan	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Carbophenothion	ug/L	<0.30	<0.30	<0.30	<0.30	<0.30	0.30	9443808
Chlorbenside	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
a-Chlordane	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
g-Chlordane	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlorfenson(ovex)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlorfenvinphos(e/z)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlormephos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlorothalonil (Daconil)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlorpropham	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlorpyrifos	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9443808
Chlorpyriphos-methyl	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dacthal	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Chlorthiophos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Cyanazine (Bladex)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Cyanophos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
o,p'-DDD	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9443808
o,p'-DDE	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9443808

RDL = Reportable Detection Limit

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PESTICIDES BY GC-MS (WATER)

Maxxam ID		VQ3858	VQ3859	VQ3861	VQ3862	VQ3865		
Sampling Date		2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 15:40		
COC Number		583091-01-01	583091-01-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	108	109	111	112	191	RDL	QC Batch
p,p'-DDE	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9443808
o,p-DDT+p,p-DDD	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9443808
p,p'-DDT	ug/L	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	9443808
Desethyl-atrazine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Demeton	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9443808
Desmetryn	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Diallate(e/z)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Diazinon	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9443808
Dichlobenil	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dichloran	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Dichlofenthion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dichlofluanid	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dichlorvos + Naled	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Diclofop-methyl	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dicofol	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9443808
Dicrotophos	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9443808
Dimethoate	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dioxathion	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9443808
Diphenylamine	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Disulfoton (Di-Syston)	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9443808
Endosulfan Sulfate	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Endosulfan I	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Dieldrin	ug/L	0.033	<0.030	<0.030	<0.030	<0.030	0.030	9443808
Endosulfan II	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Endrin	ug/L	<0.020	<0.020	<0.020	<0.020	<0.020	0.020	9443808
Endrin Aldehyde	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Endrin ketone	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
EPN	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Eptam	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Ethalfluralin	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Ronnel	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Fenitrothion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Fenthion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
RDL = Reportable Detection Limit								

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PESTICIDES BY GC-MS (WATER)

Maxxam ID		VQ3858	VQ3859	VQ3861	VQ3862	VQ3865		
Sampling Date		2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 15:40		
COC Number		583091-01-01	583091-01-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	108	109	111	112	191	RDL	QC Batch
Fensulfothion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Folpet	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Fonofos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Heptachlor	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Heptachlor Epoxide	ug/L	0.080	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Hexachlorobenzene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Hexazinone	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Iodofenphos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Iprodione	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Isofenphos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Lindane (BHC), gamma-	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Malaoxon	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Malathion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Metalaxyl	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Ethion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Methidathion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
4,4'-methoxychlor	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Metolachlor	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Metribuzin (Sencor)	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Mevinphos (Phosdrin)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Mirex	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Nitrofen	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Omethoate	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9443808
Methyl parathion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Parathion	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Permethrin	ug/L	<0.040	<0.040	<0.040	<0.040	<0.040	0.040	9443808
Phorate (Thimet)	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Phosalone	ug/L	<0.20	<0.20	<0.20	<0.20	<0.20	0.20	9443808
Phosmet	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Phosphamidon	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Pirimicarb	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9443808
Quinalophos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Pirimiphos-ethyl	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
RDL = Reportable Detection Limit								

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PESTICIDES BY GC-MS (WATER)

Maxxam ID		VQ3858	VQ3859	VQ3861	VQ3862	VQ3865		
Sampling Date		2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 15:40		
COC Number		583091-01-01	583091-01-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	108	109	111	112	191	RDL	QC Batch
Pirimiphos-methyl	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Procymidone	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Profenophos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Profluralin	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Prometryn	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Pronamide	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Propazine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Propiconazole	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	0.50	9443808
Pyrazophos	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Quintozene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Simazine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Stirophos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Sulfotepp	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Tecnazene	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Terbufos	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Terbutryne	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Terbuthylazine	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Tetradifon	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Tolylfluanid	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Triadimefon	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	0.10	9443808
Triallate	ug/L	0.094	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Trifluralin	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Vinclozolin	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	0.050	9443808
Surrogate Recovery (%)								
2-Fluorobiphenyl	%	75	71	76	68	72	N/A	9443808
D5-NITROBENZENE (sur.)	%	83	81	86	77	82	N/A	9443808
p,p'-DDE13C12 (sur.)	%	78	80	76	75	83	N/A	9443808
TERPHENYL-D14 (sur.)	%	88	89	87	86	91	N/A	9443808
Triphenyl phosphate (sur.)	%	129	129	126	122	132 (1)	N/A	9443808

RDL = Reportable Detection Limit
N/A = Not Applicable
(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3858	VQ3859	VQ3861	VQ3862		
Sampling Date		2019/05/07 14:30	2019/05/07 15:00	2019/05/07 15:40	2019/05/07 14:20		
COC Number		583091-01-01	583091-01-01	583091-02-01	583091-02-01		
	UNITS	108	109	111	112	RDL	QC Batch
Polycyclic Aromatics							
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	9409335
Acenaphthene	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	9411095
Acenaphthylene	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	9411095
Acridine	mg/L	<0.000040	<0.000040	<0.000040	<0.000040	0.000040	9411095
Anthracene	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	9411095
Benzo(a)anthracene	mg/L	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	9411095
Benzo(b&j)fluoranthene	mg/L	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	9411095
Benzo(k)fluoranthene	mg/L	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	9411095
Benzo(g,h,i)perylene	mg/L	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	9411095
Benzo(c)phenanthrene	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	9411095
Benzo(a)pyrene	mg/L	<0.0000075	<0.0000075	<0.0000075	<0.0000075	0.0000075	9411095
Benzo[e]pyrene	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	9411095
Chrysene	mg/L	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	9411095
Dibenz(a,h)anthracene	mg/L	<0.0000075	<0.0000075	<0.0000075	<0.0000075	0.0000075	9411095
Fluoranthene	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	0.000010	9411095
Fluorene	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	9411095
Indeno(1,2,3-cd)pyrene	mg/L	<0.0000085	<0.0000085	<0.0000085	<0.0000085	0.0000085	9411095
1-Methylnaphthalene	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	9411095
2-Methylnaphthalene	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	9411095
Naphthalene	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	0.00010	9411095
Phenanthrene	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	9411095
Perylene	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	0.000050	9411095
Pyrene	mg/L	<0.000020	<0.000020	<0.000020	<0.000020	0.000020	9411095
Quinoline	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	9411095
Surrogate Recovery (%)							
D10-ANTHRACENE (sur.)	%	91	91	90	95	N/A	9411095
D8-ACENAPHTHYLENE (sur.)	%	91	93	93	97	N/A	9411095
D8-NAPHTHALENE (sur.)	%	67	73	74	77	N/A	9411095
TERPHENYL-D14 (sur.)	%	97	97	96	101	N/A	9411095

RDL = Reportable Detection Limit
N/A = Not Applicable

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SEMIVOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3865		
Sampling Date		2019/05/07 15:40		
COC Number		583091-02-01		
	UNITS	191	RDL	QC Batch
Polycyclic Aromatics				
B[a]P TPE Total Potency Equivalents	mg/L	<0.000010	0.000010	9409335
Acenaphthene	mg/L	<0.00010	0.00010	9411095
Acenaphthylene	mg/L	<0.00010	0.00010	9411095
Acridine	mg/L	<0.000040	0.000040	9411095
Anthracene	mg/L	<0.000010	0.000010	9411095
Benzo(a)anthracene	mg/L	<0.0000085	0.0000085	9411095
Benzo(b&j)fluoranthene	mg/L	<0.0000085	0.0000085	9411095
Benzo(k)fluoranthene	mg/L	<0.0000085	0.0000085	9411095
Benzo(g,h,i)perylene	mg/L	<0.0000085	0.0000085	9411095
Benzo(c)phenanthrene	mg/L	<0.000050	0.000050	9411095
Benzo(a)pyrene	mg/L	<0.0000075	0.0000075	9411095
Benzo[e]pyrene	mg/L	<0.000050	0.000050	9411095
Chrysene	mg/L	<0.0000085	0.0000085	9411095
Dibenz(a,h)anthracene	mg/L	<0.0000075	0.0000075	9411095
Fluoranthene	mg/L	<0.000010	0.000010	9411095
Fluorene	mg/L	<0.000050	0.000050	9411095
Indeno(1,2,3-cd)pyrene	mg/L	<0.0000085	0.0000085	9411095
1-Methylnaphthalene	mg/L	<0.00010	0.00010	9411095
2-Methylnaphthalene	mg/L	<0.00010	0.00010	9411095
Naphthalene	mg/L	<0.00010	0.00010	9411095
Phenanthrene	mg/L	<0.000050	0.000050	9411095
Perylene	mg/L	<0.000050	0.000050	9411095
Pyrene	mg/L	<0.000020	0.000020	9411095
Quinoline	mg/L	<0.00020	0.00020	9411095
Surrogate Recovery (%)				
D10-ANTHRACENE (sur.)	%	90	N/A	9411095
D8-ACENAPHTHYLENE (sur.)	%	97	N/A	9411095
D8-NAPHTHALENE (sur.)	%	78	N/A	9411095
TERPHENYL-D14 (sur.)	%	97	N/A	9411095

RDL = Reportable Detection Limit
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3851	VQ3851	VQ3852	VQ3853	VQ3854		
Sampling Date		2019/05/07 13:00	2019/05/07 13:00	2019/05/07 13:30	2019/05/07 14:00	2019/05/07 11:00		
COC Number		583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-01-01		
	UNITS	101	101 Lab-Dup	102	103	104	RDL	QC Batch
Volatiles								
Total Trihalomethanes	mg/L	<0.0013	N/A	<0.0013	<0.0013	<0.0013	0.0013	9408549
Bromodichloromethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Bromoform	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Bromomethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
Carbon tetrachloride	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chlorodibromomethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
Chloroethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
Chloroform	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chloromethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
1,2-dibromoethane	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	9410786
1,2-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,3-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,4-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2-dichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
cis-1,2-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
trans-1,2-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Dichloromethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
1,2-dichloropropane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
cis-1,3-dichloropropene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
trans-1,3-dichloropropene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Methyl methacrylate	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Methyl-tert-butylether (MTBE)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Styrene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,1,2-tetrachloroethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,1,2,2-tetrachloroethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
Tetrachloroethene	mg/L	<0.00050	<0.00050	0.0012	<0.00050	<0.00050	0.00050	9410786
1,2,3-trichlorobenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,2,4-trichlorobenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

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VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3851	VQ3851	VQ3852	VQ3853	VQ3854		
Sampling Date		2019/05/07 13:00	2019/05/07 13:00	2019/05/07 13:30	2019/05/07 14:00	2019/05/07 11:00		
COC Number		583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-01-01		
	UNITS	101	101 Lab-Dup	102	103	104	RDL	QC Batch
1,3,5-trichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,1-trichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,2-trichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Trichloroethene	mg/L	<0.00050	<0.00050	0.00054	<0.00050	<0.00050	0.00050	9410786
Trichlorofluoromethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2,4-trimethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,3,5-trimethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Vinyl chloride	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	100	100	100	100	100	N/A	9410786
4-Bromofluorobenzene (sur.)	%	96	96	96	96	96	N/A	9410786
D4-1,2-Dichloroethane (sur.)	%	107	110	104	111	106	N/A	9410786

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3855	VQ3856	VQ3857	VQ3858	VQ3859		
Sampling Date		2019/05/07 10:30	2019/05/07 09:00	2019/05/07 11:40	2019/05/07 14:30	2019/05/07 15:00		
COC Number		583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-01-01		
	UNITS	105	106	107	108	109	RDL	QC Batch
Volatiles								
Total Trihalomethanes	mg/L	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.0013	9408549
Bromodichloromethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Bromoform	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Bromomethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
Carbon tetrachloride	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chlorodibromomethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
Chloroethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
Chloroform	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chloromethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
1,2-dibromoethane	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	9410786
1,2-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,3-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,4-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2-dichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
cis-1,2-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
trans-1,2-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Dichloromethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
1,2-dichloropropane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
cis-1,3-dichloropropene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
trans-1,3-dichloropropene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Methyl methacrylate	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Methyl-tert-butylether (MTBE)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Styrene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,1,2-tetrachloroethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,1,2,2-tetrachloroethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
Tetrachloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2,3-trichlorobenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,2,4-trichlorobenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,3,5-trichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786

RDL = Reportable Detection Limit

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3855	VQ3856	VQ3857	VQ3858	VQ3859		
Sampling Date		2019/05/07 10:30	2019/05/07 09:00	2019/05/07 11:40	2019/05/07 14:30	2019/05/07 15:00		
COC Number		583091-01-01	583091-01-01	583091-01-01	583091-01-01	583091-01-01		
	UNITS	**105**	**106**	**107**	**108**	**109**	**RDL**	**QC Batch**
1,1,1-trichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,2-trichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Trichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Trichlorofluoromethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2,4-trimethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,3,5-trimethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Vinyl chloride	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	100	100	100	100	100	N/A	9410786
4-Bromofluorobenzene (sur.)	%	96	96	96	96	96	N/A	9410786
D4-1,2-Dichloroethane (sur.)	%	104	104	108	106	106	N/A	9410786

RDL = Reportable Detection Limit
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3860	VQ3861	VQ3862	VQ3863	VQ3864		
Sampling Date		2019/05/07 10:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 10:30	2019/05/07 09:30		
COC Number		583091-01-01	583091-02-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	110	111	112	195	MW9	RDL	QC Batch
Volatiles								
Total Trihalomethanes	mg/L	<0.0013	<0.0013	<0.0013	<0.0013	<0.0013	0.0013	9408549
Bromodichloromethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Bromoform	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Bromomethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
Carbon tetrachloride	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chlorodibromomethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
Chloroethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
Chloroform	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Chloromethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
1,2-dibromoethane	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	0.00020	9410786
1,2-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,3-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,4-dichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2-dichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
cis-1,2-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
trans-1,2-dichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Dichloromethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
1,2-dichloropropane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
cis-1,3-dichloropropene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
trans-1,3-dichloropropene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Methyl methacrylate	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Methyl-tert-butylether (MTBE)	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Styrene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,1,2-tetrachloroethane	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,1,2,2-tetrachloroethane	mg/L	<0.0020	<0.0020	<0.0020	<0.0020	<0.0020	0.0020	9410786
Tetrachloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2,3-trichlorobenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,2,4-trichlorobenzene	mg/L	<0.0010	<0.0010	<0.0010	<0.0010	<0.0010	0.0010	9410786
1,3,5-trichlorobenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786

RDL = Reportable Detection Limit

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3860	VQ3861	VQ3862	VQ3863	VQ3864		
Sampling Date		2019/05/07 10:00	2019/05/07 15:40	2019/05/07 14:20	2019/05/07 10:30	2019/05/07 09:30		
COC Number		583091-01-01	583091-02-01	583091-02-01	583091-02-01	583091-02-01		
	UNITS	110	111	112	195	MW9	RDL	QC Batch
1,1,1-trichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,1,2-trichloroethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Trichloroethene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Trichlorofluoromethane	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,2,4-trimethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
1,3,5-trimethylbenzene	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Vinyl chloride	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00050	9410786
Surrogate Recovery (%)								
1,4-Difluorobenzene (sur.)	%	99	99	99	100	101	N/A	9410786
4-Bromofluorobenzene (sur.)	%	96	97	95	97	97	N/A	9410786
D4-1,2-Dichloroethane (sur.)	%	103	109	106	108	109	N/A	9410786

RDL = Reportable Detection Limit
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3865	VQ3866		
Sampling Date		2019/05/07 15:40	2019/05/07		
COC Number		583091-02-01	583091-02-01		
	UNITS	191	TRIP BLANK	RDL	QC Batch
Volatiles					
Total Trihalomethanes	mg/L	<0.0013	<0.0013	0.0013	9408549
Bromodichloromethane	mg/L	<0.00050	<0.00050	0.00050	9410786
Bromoform	mg/L	<0.00050	<0.00050	0.00050	9410786
Bromomethane	mg/L	<0.0020	<0.0020	0.0020	9410786
Carbon tetrachloride	mg/L	<0.00050	<0.00050	0.00050	9410786
Chlorobenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
Chlorodibromomethane	mg/L	<0.0010	<0.0010	0.0010	9410786
Chloroethane	mg/L	<0.0010	<0.0010	0.0010	9410786
Chloroform	mg/L	<0.00050	<0.00050	0.00050	9410786
Chloromethane	mg/L	<0.0020	<0.0020	0.0020	9410786
1,2-dibromoethane	mg/L	<0.00020	<0.00020	0.00020	9410786
1,2-dichlorobenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
1,3-dichlorobenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
1,4-dichlorobenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethane	mg/L	<0.00050	<0.00050	0.00050	9410786
1,2-dichloroethane	mg/L	<0.00050	<0.00050	0.00050	9410786
1,1-dichloroethene	mg/L	<0.00050	<0.00050	0.00050	9410786
cis-1,2-dichloroethene	mg/L	<0.00050	<0.00050	0.00050	9410786
trans-1,2-dichloroethene	mg/L	<0.00050	<0.00050	0.00050	9410786
Dichloromethane	mg/L	<0.0020	<0.0020	0.0020	9410786
1,2-dichloropropane	mg/L	<0.00050	<0.00050	0.00050	9410786
cis-1,3-dichloropropene	mg/L	<0.00050	<0.00050	0.00050	9410786
trans-1,3-dichloropropene	mg/L	<0.00050	<0.00050	0.00050	9410786
Methyl methacrylate	mg/L	<0.00050	<0.00050	0.00050	9410786
Methyl-tert-butylether (MTBE)	mg/L	<0.00050	<0.00050	0.00050	9410786
Styrene	mg/L	<0.00050	<0.00050	0.00050	9410786
1,1,1,2-tetrachloroethane	mg/L	<0.0010	<0.0010	0.0010	9410786
1,1,2,2-tetrachloroethane	mg/L	<0.0020	<0.0020	0.0020	9410786
Tetrachloroethene	mg/L	<0.00050	<0.00050	0.00050	9410786
1,2,3-trichlorobenzene	mg/L	<0.0010	<0.0010	0.0010	9410786
1,2,4-trichlorobenzene	mg/L	<0.0010	<0.0010	0.0010	9410786
1,3,5-trichlorobenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
RDL = Reportable Detection Limit					

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VQ3865	VQ3866		
Sampling Date		2019/05/07 15:40	2019/05/07		
COC Number		583091-02-01	583091-02-01		
	UNITS	**191**	**TRIP BLANK**	**RDL**	**QC Batch**
1,1,1-trichloroethane	mg/L	<0.00050	<0.00050	0.00050	9410786
1,1,2-trichloroethane	mg/L	<0.00050	<0.00050	0.00050	9410786
Trichloroethene	mg/L	<0.00050	<0.00050	0.00050	9410786
Trichlorofluoromethane	mg/L	<0.00050	<0.00050	0.00050	9410786
1,2,4-trimethylbenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
1,3,5-trimethylbenzene	mg/L	<0.00050	<0.00050	0.00050	9410786
Vinyl chloride	mg/L	<0.00050	<0.00050	0.00050	9410786
Surrogate Recovery (%)					
1,4-Difluorobenzene (sur.)	%	100	99	N/A	9410786
4-Bromofluorobenzene (sur.)	%	96	96	N/A	9410786
D4-1,2-Dichloroethane (sur.)	%	108	104	N/A	9410786

RDL = Reportable Detection Limit
N/A = Not Applicable

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B934265
Report Date: 2019/05/31

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AM

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	6.3°C
Package 2	7.0°C

Results relate only to the items tested.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9410778	JNG	Matrix Spike [VQ3852-01]	1,4-Difluorobenzene (sur.)	2019/05/09		97	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/09		99	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/09		107	%	50 - 140
			Benzene	2019/05/09		90	%	50 - 140
			Toluene	2019/05/09		90	%	50 - 140
			Ethylbenzene	2019/05/09		94	%	50 - 140
			m & p-Xylene	2019/05/09		101	%	50 - 140
			o-Xylene	2019/05/09		100	%	50 - 140
			F1 (C6-C10)	2019/05/09		77	%	60 - 140
9410778	JNG	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/05/09		100	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/09		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/09		99	%	50 - 140
			Benzene	2019/05/09		91	%	60 - 130
			Toluene	2019/05/09		93	%	60 - 130
			Ethylbenzene	2019/05/09		98	%	60 - 130
			m & p-Xylene	2019/05/09		103	%	60 - 130
			o-Xylene	2019/05/09		99	%	60 - 130
			F1 (C6-C10)	2019/05/09		97	%	60 - 140
9410778	JNG	Method Blank	1,4-Difluorobenzene (sur.)	2019/05/09		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/09		100	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/09		98	%	50 - 140
			Benzene	2019/05/09	<0.00040		mg/L	
			Toluene	2019/05/09	<0.00040		mg/L	
			Ethylbenzene	2019/05/09	<0.00040		mg/L	
			m & p-Xylene	2019/05/09	<0.00080		mg/L	
			o-Xylene	2019/05/09	<0.00040		mg/L	
			F1 (C6-C10)	2019/05/09	<0.10		mg/L	
9410778	JNG	RPD [VQ3851-01]	Benzene	2019/05/09	NC		%	30
			Toluene	2019/05/09	NC		%	30
			Ethylbenzene	2019/05/09	NC		%	30
			m & p-Xylene	2019/05/09	NC		%	30
			o-Xylene	2019/05/09	NC		%	30
			F1 (C6-C10)	2019/05/09	NC		%	30
9410786	QW1	Matrix Spike [VQ3852-01]	1,4-Difluorobenzene (sur.)	2019/05/09		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/09		101	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/09		101	%	50 - 140
			Bromodichloromethane	2019/05/09		101	%	50 - 140
			Bromoform	2019/05/09		99	%	50 - 140
			Bromomethane	2019/05/09		90	%	50 - 140
			Carbon tetrachloride	2019/05/09		92	%	50 - 140
			Chlorobenzene	2019/05/09		90	%	50 - 140
			Chlorodibromomethane	2019/05/09		101	%	50 - 140
			Chloroethane	2019/05/09		85	%	50 - 140
			Chloroform	2019/05/09		89	%	50 - 140
			Chloromethane	2019/05/09		89	%	50 - 140
			1,2-dibromoethane	2019/05/09		95	%	50 - 140
			1,2-dichlorobenzene	2019/05/09		97	%	50 - 140
			1,3-dichlorobenzene	2019/05/09		92	%	50 - 140
			1,4-dichlorobenzene	2019/05/09		92	%	50 - 140
			1,1-dichloroethane	2019/05/09		89	%	50 - 140
			1,2-dichloroethane	2019/05/09		98	%	50 - 140
			1,1-dichloroethene	2019/05/09		86	%	50 - 140
			cis-1,2-dichloroethene	2019/05/09		92	%	50 - 140
			trans-1,2-dichloroethene	2019/05/09		84	%	50 - 140

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dichloromethane	2019/05/09		89	%	50 - 140
			1,2-dichloropropane	2019/05/09		97	%	50 - 140
			cis-1,3-dichloropropene	2019/05/09		118	%	50 - 140
			trans-1,3-dichloropropene	2019/05/09		130	%	50 - 140
			Methyl methacrylate	2019/05/09		107	%	50 - 140
			Methyl-tert-butylether (MTBE)	2019/05/09		95	%	50 - 140
			Styrene	2019/05/09		94	%	50 - 140
			1,1,1,2-tetrachloroethane	2019/05/09		91	%	50 - 140
			1,1,2,2-tetrachloroethane	2019/05/09		100	%	50 - 140
			Tetrachloroethene	2019/05/09		83	%	50 - 140
			1,2,3-trichlorobenzene	2019/05/09		90	%	50 - 140
			1,2,4-trichlorobenzene	2019/05/09		89	%	50 - 140
			1,3,5-trichlorobenzene	2019/05/09		88	%	50 - 140
			1,1,1-trichloroethane	2019/05/09		94	%	50 - 140
			1,1,2-trichloroethane	2019/05/09		101	%	50 - 140
			Trichloroethene	2019/05/09		96	%	50 - 140
			Trichlorofluoromethane	2019/05/09		84	%	50 - 140
			1,2,4-trimethylbenzene	2019/05/09		91	%	50 - 140
			1,3,5-trimethylbenzene	2019/05/09		93	%	50 - 140
			Vinyl chloride	2019/05/09		82	%	50 - 140
9410786	QW1	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/05/09		103	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/09		103	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/09		95	%	50 - 140
			Bromodichloromethane	2019/05/09		98	%	60 - 130
			Bromoform	2019/05/09		92	%	60 - 130
			Bromomethane	2019/05/09		85	%	60 - 130
			Carbon tetrachloride	2019/05/09		93	%	60 - 130
			Chlorobenzene	2019/05/09		88	%	60 - 130
			Chlorodibromomethane	2019/05/09		95	%	60 - 130
			Chloroethane	2019/05/09		82	%	60 - 130
			Chloroform	2019/05/09		87	%	60 - 130
			Chloromethane	2019/05/09		81	%	60 - 130
			1,2-dibromoethane	2019/05/09		87	%	60 - 130
			1,2-dichlorobenzene	2019/05/09		96	%	60 - 130
			1,3-dichlorobenzene	2019/05/09		92	%	60 - 130
			1,4-dichlorobenzene	2019/05/09		92	%	60 - 130
			1,1-dichloroethane	2019/05/09		89	%	60 - 130
			1,2-dichloroethane	2019/05/09		92	%	60 - 130
			1,1-dichloroethene	2019/05/09		85	%	60 - 130
			cis-1,2-dichloroethene	2019/05/09		90	%	60 - 130
			trans-1,2-dichloroethene	2019/05/09		82	%	60 - 130
			Dichloromethane	2019/05/09		86	%	60 - 130
			1,2-dichloropropane	2019/05/09		94	%	60 - 130
			cis-1,3-dichloropropene	2019/05/09		111	%	60 - 130
			trans-1,3-dichloropropene	2019/05/09		116	%	60 - 130
			Methyl methacrylate	2019/05/09		96	%	60 - 130
			Methyl-tert-butylether (MTBE)	2019/05/09		90	%	60 - 130
			Styrene	2019/05/09		93	%	60 - 130
			1,1,1,2-tetrachloroethane	2019/05/09		88	%	60 - 130
			1,1,2,2-tetrachloroethane	2019/05/09		91	%	60 - 130
			Tetrachloroethene	2019/05/09		83	%	60 - 130
			1,2,3-trichlorobenzene	2019/05/09		87	%	60 - 130
			1,2,4-trichlorobenzene	2019/05/09		88	%	60 - 130
			1,3,5-trichlorobenzene	2019/05/09		88	%	60 - 130

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			1,1,1-trichloroethane	2019/05/09		94	%	60 - 130
			1,1,2-trichloroethane	2019/05/09		94	%	60 - 130
			Trichloroethene	2019/05/09		97	%	60 - 130
			Trichlorofluoromethane	2019/05/09		83	%	60 - 130
			1,2,4-trimethylbenzene	2019/05/09		93	%	60 - 130
			1,3,5-trimethylbenzene	2019/05/09		95	%	60 - 130
			Vinyl chloride	2019/05/09		77	%	60 - 130
9410786	QW1	Method Blank	1,4-Difluorobenzene (sur.)	2019/05/09		99	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/09		95	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/09		105	%	50 - 140
			Bromodichloromethane	2019/05/09	<0.00050		mg/L	
			Bromoform	2019/05/09	<0.00050		mg/L	
			Bromomethane	2019/05/09	<0.0020		mg/L	
			Carbon tetrachloride	2019/05/09	<0.00050		mg/L	
			Chlorobenzene	2019/05/09	<0.00050		mg/L	
			Chlorodibromomethane	2019/05/09	<0.0010		mg/L	
			Chloroethane	2019/05/09	<0.0010		mg/L	
			Chloroform	2019/05/09	<0.00050		mg/L	
			Chloromethane	2019/05/09	<0.0020		mg/L	
			1,2-dibromoethane	2019/05/09	<0.00020		mg/L	
			1,2-dichlorobenzene	2019/05/09	<0.00050		mg/L	
			1,3-dichlorobenzene	2019/05/09	<0.00050		mg/L	
			1,4-dichlorobenzene	2019/05/09	<0.00050		mg/L	
			1,1-dichloroethane	2019/05/09	<0.00050		mg/L	
			1,2-dichloroethane	2019/05/09	<0.00050		mg/L	
			1,1-dichloroethene	2019/05/09	<0.00050		mg/L	
			cis-1,2-dichloroethene	2019/05/09	<0.00050		mg/L	
			trans-1,2-dichloroethene	2019/05/09	<0.00050		mg/L	
			Dichloromethane	2019/05/09	<0.0020		mg/L	
			1,2-dichloropropane	2019/05/09	<0.00050		mg/L	
			cis-1,3-dichloropropene	2019/05/09	<0.00050		mg/L	
			trans-1,3-dichloropropene	2019/05/09	<0.00050		mg/L	
			Methyl methacrylate	2019/05/09	<0.00050		mg/L	
			Methyl-tert-butylether (MTBE)	2019/05/09	<0.00050		mg/L	
			Styrene	2019/05/09	<0.00050		mg/L	
			1,1,1,2-tetrachloroethane	2019/05/09	<0.0010		mg/L	
			1,1,2,2-tetrachloroethane	2019/05/09	<0.0020		mg/L	
			Tetrachloroethene	2019/05/09	<0.00050		mg/L	
			1,2,3-trichlorobenzene	2019/05/09	<0.0010		mg/L	
			1,2,4-trichlorobenzene	2019/05/09	<0.0010		mg/L	
			1,3,5-trichlorobenzene	2019/05/09	<0.00050		mg/L	
			1,1,1-trichloroethane	2019/05/09	<0.00050		mg/L	
			1,1,2-trichloroethane	2019/05/09	<0.00050		mg/L	
			Trichloroethene	2019/05/09	<0.00050		mg/L	
			Trichlorofluoromethane	2019/05/09	<0.00050		mg/L	
			1,2,4-trimethylbenzene	2019/05/09	<0.00050		mg/L	
			1,3,5-trimethylbenzene	2019/05/09	<0.00050		mg/L	
			Vinyl chloride	2019/05/09	<0.00050		mg/L	
9410786	QW1	RPD [VQ3851-01]	Bromodichloromethane	2019/05/09	NC		%	30
			Bromoform	2019/05/09	NC		%	30
			Bromomethane	2019/05/09	NC		%	30
			Carbon tetrachloride	2019/05/09	NC		%	30
			Chlorobenzene	2019/05/09	NC		%	30
			Chlorodibromomethane	2019/05/09	NC		%	30

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QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chloroethane	2019/05/09	NC		%	30
			Chloroform	2019/05/09	NC		%	30
			Chloromethane	2019/05/09	NC		%	30
			1,2-dibromoethane	2019/05/09	NC		%	30
			1,2-dichlorobenzene	2019/05/09	NC		%	30
			1,3-dichlorobenzene	2019/05/09	NC		%	30
			1,4-dichlorobenzene	2019/05/09	NC		%	30
			1,1-dichloroethane	2019/05/09	NC		%	30
			1,2-dichloroethane	2019/05/09	NC		%	30
			1,1-dichloroethene	2019/05/09	NC		%	30
			cis-1,2-dichloroethene	2019/05/09	NC		%	30
			trans-1,2-dichloroethene	2019/05/09	NC		%	30
			Dichloromethane	2019/05/09	NC		%	30
			1,2-dichloropropane	2019/05/09	NC		%	30
			cis-1,3-dichloropropene	2019/05/09	NC		%	30
			trans-1,3-dichloropropene	2019/05/09	NC		%	30
			Methyl methacrylate	2019/05/09	NC		%	30
			Methyl-tert-butylether (MTBE)	2019/05/09	NC		%	30
			Styrene	2019/05/09	NC		%	30
			1,1,1,2-tetrachloroethane	2019/05/09	NC		%	30
			1,1,2,2-tetrachloroethane	2019/05/09	NC		%	30
			Tetrachloroethene	2019/05/09	NC		%	30
			1,2,3-trichlorobenzene	2019/05/09	NC		%	30
			1,2,4-trichlorobenzene	2019/05/09	NC		%	30
			1,3,5-trichlorobenzene	2019/05/09	NC		%	30
			1,1,1-trichloroethane	2019/05/09	NC		%	30
			1,1,2-trichloroethane	2019/05/09	NC		%	30
			Trichloroethene	2019/05/09	NC		%	30
			Trichlorofluoromethane	2019/05/09	NC		%	30
			1,2,4-trimethylbenzene	2019/05/09	NC		%	30
			1,3,5-trimethylbenzene	2019/05/09	NC		%	30
			Vinyl chloride	2019/05/09	NC		%	30
9411094	LSH	Matrix Spike [VQ3851-02]	O-TERPHENYL (sur.)	2019/05/10		97	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/05/10		108	%	60 - 140
9411094	LSH	Spiked Blank	O-TERPHENYL (sur.)	2019/05/10		87	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/05/10		99	%	60 - 140
9411094	LSH	Method Blank	O-TERPHENYL (sur.)	2019/05/10		96	%	60 - 140
			F2 (C10-C16 Hydrocarbons)	2019/05/10	<0.10		mg/L	
9411094	LSH	RPD	F2 (C10-C16 Hydrocarbons)	2019/05/10	NC		%	30
9411095	LZ3	Matrix Spike [VQ3858-02]	D10-ANTHRACENE (sur.)	2019/05/10		98	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2019/05/10		112	%	50 - 130
			D8-NAPHTHALENE (sur.)	2019/05/10		90	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/05/10		109	%	50 - 130
			Acenaphthene	2019/05/10		109	%	50 - 130
			Acenaphthylene	2019/05/10		110	%	50 - 130
			Acridine	2019/05/10		104	%	50 - 130
			Anthracene	2019/05/10		95	%	50 - 130
			Benzo(a)anthracene	2019/05/10		98	%	50 - 130
			Benzo(b&j)fluoranthene	2019/05/10		91	%	50 - 130
			Benzo(k)fluoranthene	2019/05/10		99	%	50 - 130
			Benzo(g,h,i)perylene	2019/05/10		93	%	50 - 130
			Benzo(c)phenanthrene	2019/05/10		110	%	50 - 130
			Benzo(a)pyrene	2019/05/10		91	%	50 - 130
			Benzo[e]pyrene	2019/05/10		93	%	50 - 130

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			Chrysene	2019/05/10		98	%	50 - 130
			Dibenz(a,h)anthracene	2019/05/10		99	%	50 - 130
			Fluoranthene	2019/05/10		103	%	50 - 130
			Fluorene	2019/05/10		108	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/05/10		91	%	50 - 130
			1-Methylnaphthalene	2019/05/10		108	%	50 - 130
			2-Methylnaphthalene	2019/05/10		102	%	50 - 130
			Naphthalene	2019/05/10		101	%	50 - 130
			Phenanthrene	2019/05/10		106	%	50 - 130
			Perylene	2019/05/10		92	%	50 - 130
			Pyrene	2019/05/10		105	%	50 - 130
			Quinoline	2019/05/10		98	%	50 - 130
9411095	LZ3	Spiked Blank	D10-ANTHRACENE (sur.)	2019/05/10		95	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2019/05/10		101	%	50 - 130
			D8-NAPHTHALENE (sur.)	2019/05/10		80	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/05/10		105	%	50 - 130
			Acenaphthene	2019/05/10		96	%	50 - 130
			Acenaphthylene	2019/05/10		97	%	50 - 130
			Acridine	2019/05/10		93	%	50 - 130
			Anthracene	2019/05/10		90	%	50 - 130
			Benzo(a)anthracene	2019/05/10		101	%	50 - 130
			Benzo(b&j)fluoranthene	2019/05/10		94	%	50 - 130
			Benzo(k)fluoranthene	2019/05/10		99	%	50 - 130
			Benzo(g,h,i)perylene	2019/05/10		97	%	50 - 130
			Benzo(c)phenanthrene	2019/05/10		106	%	50 - 130
			Benzo(a)pyrene	2019/05/10		97	%	50 - 130
			Benzo[e]pyrene	2019/05/10		99	%	50 - 130
			Chrysene	2019/05/10		100	%	50 - 130
			Dibenz(a,h)anthracene	2019/05/10		103	%	50 - 130
			Fluoranthene	2019/05/10		101	%	50 - 130
			Fluorene	2019/05/10		97	%	50 - 130
			Indeno(1,2,3-cd)pyrene	2019/05/10		96	%	50 - 130
			1-Methylnaphthalene	2019/05/10		94	%	50 - 130
			2-Methylnaphthalene	2019/05/10		90	%	50 - 130
			Naphthalene	2019/05/10		88	%	50 - 130
			Phenanthrene	2019/05/10		97	%	50 - 130
			Perylene	2019/05/10		97	%	50 - 130
			Pyrene	2019/05/10		102	%	50 - 130
			Quinoline	2019/05/10		96	%	50 - 130
9411095	LZ3	Method Blank	D10-ANTHRACENE (sur.)	2019/05/10		89	%	50 - 130
			D8-ACENAPHTHYLENE (sur.)	2019/05/10		91	%	50 - 130
			D8-NAPHTHALENE (sur.)	2019/05/10		70	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/05/10		96	%	50 - 130
			Acenaphthene	2019/05/10	<0.00010		mg/L	
			Acenaphthylene	2019/05/10	<0.00010		mg/L	
			Acridine	2019/05/10	<0.000040		mg/L	
			Anthracene	2019/05/10	<0.000010		mg/L	
			Benzo(a)anthracene	2019/05/10	<0.0000085		mg/L	
			Benzo(b&j)fluoranthene	2019/05/10	<0.0000085		mg/L	
			Benzo(k)fluoranthene	2019/05/10	<0.0000085		mg/L	
			Benzo(g,h,i)perylene	2019/05/10	<0.0000085		mg/L	
			Benzo(c)phenanthrene	2019/05/10	<0.000050		mg/L	
			Benzo(a)pyrene	2019/05/10	<0.0000075		mg/L	
			Benzo[e]pyrene	2019/05/10	<0.000050		mg/L	

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			Chrysene	2019/05/10	<0.0000085		mg/L	
			Dibenz(a,h)anthracene	2019/05/10	<0.0000075		mg/L	
			Fluoranthene	2019/05/10	<0.000010		mg/L	
			Fluorene	2019/05/10	<0.000050		mg/L	
			Indeno(1,2,3-cd)pyrene	2019/05/10	<0.0000085		mg/L	
			1-Methylnaphthalene	2019/05/10	<0.00010		mg/L	
			2-Methylnaphthalene	2019/05/10	<0.00010		mg/L	
			Naphthalene	2019/05/10	<0.00010		mg/L	
			Phenanthrene	2019/05/10	<0.000050		mg/L	
			Perylene	2019/05/10	<0.000050		mg/L	
			Pyrene	2019/05/10	<0.000020		mg/L	
			Quinoline	2019/05/10	<0.00020		mg/L	
9411095	LZ3	RPD	Acenaphthene	2019/05/10	NC		%	30
			Acenaphthylene	2019/05/10	NC		%	30
			Acridine	2019/05/10	NC		%	30
			Anthracene	2019/05/10	NC		%	30
			Benzo(a)anthracene	2019/05/10	NC		%	30
			Benzo(b&j)fluoranthene	2019/05/10	NC		%	30
			Benzo(k)fluoranthene	2019/05/10	NC		%	30
			Benzo(g,h,i)perylene	2019/05/10	NC		%	30
			Benzo(c)phenanthrene	2019/05/10	NC		%	30
			Benzo(a)pyrene	2019/05/10	NC		%	30
			Benzo[e]pyrene	2019/05/10	NC		%	30
			Chrysene	2019/05/10	NC		%	30
			Dibenz(a,h)anthracene	2019/05/10	NC		%	30
			Fluoranthene	2019/05/10	NC		%	30
			Fluorene	2019/05/10	NC		%	30
			Indeno(1,2,3-cd)pyrene	2019/05/10	18		%	30
			1-Methylnaphthalene	2019/05/10	NC		%	30
			2-Methylnaphthalene	2019/05/10	NC		%	30
			Naphthalene	2019/05/10	NC		%	30
			Phenanthrene	2019/05/10	NC		%	30
			Perylene	2019/05/10	NC		%	30
			Pyrene	2019/05/10	NC		%	30
			Quinoline	2019/05/10	NC		%	30
9412743	ANE	Matrix Spike	Dissolved Aluminum (Al)	2019/05/10		104	%	80 - 120
			Dissolved Antimony (Sb)	2019/05/10		118	%	80 - 120
			Dissolved Arsenic (As)	2019/05/10		96	%	80 - 120
			Dissolved Beryllium (Be)	2019/05/10		106	%	80 - 120
			Dissolved Chromium (Cr)	2019/05/10		99	%	80 - 120
			Dissolved Cobalt (Co)	2019/05/10		93	%	80 - 120
			Dissolved Copper (Cu)	2019/05/10		87	%	80 - 120
			Dissolved Lead (Pb)	2019/05/10		94	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/05/10		113	%	80 - 120
			Dissolved Nickel (Ni)	2019/05/10		101	%	80 - 120
			Dissolved Selenium (Se)	2019/05/10		100	%	80 - 120
			Dissolved Silver (Ag)	2019/05/10		94	%	80 - 120
			Dissolved Thallium (Tl)	2019/05/10		93	%	80 - 120
			Dissolved Tin (Sn)	2019/05/10		112	%	80 - 120
			Dissolved Titanium (Ti)	2019/05/10		116	%	80 - 120
			Dissolved Uranium (U)	2019/05/10		105	%	80 - 120
			Dissolved Vanadium (V)	2019/05/10		114	%	80 - 120
			Dissolved Zinc (Zn)	2019/05/10		NC	%	80 - 120
9412743	ANE	Spiked Blank	Dissolved Aluminum (Al)	2019/05/10		107	%	80 - 120

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			Dissolved Antimony (Sb)	2019/05/10		120	%	80 - 120
			Dissolved Arsenic (As)	2019/05/10		100	%	80 - 120
			Dissolved Beryllium (Be)	2019/05/10		103	%	80 - 120
			Dissolved Chromium (Cr)	2019/05/10		95	%	80 - 120
			Dissolved Cobalt (Co)	2019/05/10		94	%	80 - 120
			Dissolved Copper (Cu)	2019/05/10		96	%	80 - 120
			Dissolved Lead (Pb)	2019/05/10		98	%	80 - 120
			Dissolved Molybdenum (Mo)	2019/05/10		100	%	80 - 120
			Dissolved Nickel (Ni)	2019/05/10		94	%	80 - 120
			Dissolved Selenium (Se)	2019/05/10		100	%	80 - 120
			Dissolved Silver (Ag)	2019/05/10		101	%	80 - 120
			Dissolved Thallium (Tl)	2019/05/10		98	%	80 - 120
			Dissolved Tin (Sn)	2019/05/10		102	%	80 - 120
			Dissolved Titanium (Ti)	2019/05/10		98	%	80 - 120
			Dissolved Uranium (U)	2019/05/10		96	%	80 - 120
			Dissolved Vanadium (V)	2019/05/10		101	%	80 - 120
			Dissolved Zinc (Zn)	2019/05/10		93	%	80 - 120
9412743	ANE	Method Blank	Dissolved Aluminum (Al)	2019/05/10	<0.0030		mg/L	
			Dissolved Antimony (Sb)	2019/05/10	<0.00060		mg/L	
			Dissolved Arsenic (As)	2019/05/10	<0.00020		mg/L	
			Dissolved Beryllium (Be)	2019/05/10	<0.0010		mg/L	
			Dissolved Chromium (Cr)	2019/05/10	<0.0010		mg/L	
			Dissolved Cobalt (Co)	2019/05/10	<0.00030		mg/L	
			Dissolved Copper (Cu)	2019/05/10	<0.00020		mg/L	
			Dissolved Lead (Pb)	2019/05/10	<0.00020		mg/L	
			Dissolved Molybdenum (Mo)	2019/05/10	<0.00020		mg/L	
			Dissolved Nickel (Ni)	2019/05/10	<0.00050		mg/L	
			Dissolved Selenium (Se)	2019/05/10	<0.00020		mg/L	
			Dissolved Silver (Ag)	2019/05/10	<0.00010		mg/L	
			Dissolved Thallium (Tl)	2019/05/10	<0.00020		mg/L	
			Dissolved Tin (Sn)	2019/05/10	<0.0010		mg/L	
			Dissolved Titanium (Ti)	2019/05/10	<0.0010		mg/L	
			Dissolved Uranium (U)	2019/05/10	<0.00010		mg/L	
			Dissolved Vanadium (V)	2019/05/10	<0.0010		mg/L	
			Dissolved Zinc (Zn)	2019/05/10	<0.0030		mg/L	
9412743	ANE	RPD	Dissolved Aluminum (Al)	2019/05/10	NC		%	20
			Dissolved Antimony (Sb)	2019/05/10	NC		%	20
			Dissolved Arsenic (As)	2019/05/10	NC		%	20
			Dissolved Beryllium (Be)	2019/05/10	NC		%	20
			Dissolved Chromium (Cr)	2019/05/10	NC		%	20
			Dissolved Cobalt (Co)	2019/05/10	5.0		%	20
			Dissolved Copper (Cu)	2019/05/10	4.3		%	20
			Dissolved Lead (Pb)	2019/05/10	NC		%	20
			Dissolved Molybdenum (Mo)	2019/05/10	0.16		%	20
			Dissolved Nickel (Ni)	2019/05/10	5.2		%	20
			Dissolved Selenium (Se)	2019/05/10	NC		%	20
			Dissolved Silver (Ag)	2019/05/10	NC		%	20
			Dissolved Thallium (Tl)	2019/05/10	NC		%	20
			Dissolved Tin (Sn)	2019/05/10	NC		%	20
			Dissolved Titanium (Ti)	2019/05/10	NC		%	20
			Dissolved Uranium (U)	2019/05/10	NC		%	20
			Dissolved Vanadium (V)	2019/05/10	NC		%	20
			Dissolved Zinc (Zn)	2019/05/10	5.3		%	20
9412830	PR6	Matrix Spike	Dissolved Nitrite (N)	2019/05/10		100	%	80 - 120

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			Dissolved Nitrate (N)	2019/05/10		101	%	80 - 120
9412830	PR6	Spiked Blank	Dissolved Nitrite (N)	2019/05/10		99	%	80 - 120
			Dissolved Nitrate (N)	2019/05/10		100	%	80 - 120
9412830	PR6	Method Blank	Dissolved Nitrite (N)	2019/05/10	<0.010		mg/L	
			Dissolved Nitrate (N)	2019/05/10	<0.010		mg/L	
9412830	PR6	RPD	Dissolved Nitrite (N)	2019/05/10	NC		%	20
			Dissolved Nitrate (N)	2019/05/10	NC		%	20
9413246	PR6	Matrix Spike [VQ3862-03]	Dissolved Nitrite (N)	2019/05/11		101	%	80 - 120
			Dissolved Nitrate (N)	2019/05/11		102	%	80 - 120
9413246	PR6	Spiked Blank	Dissolved Nitrite (N)	2019/05/11		100	%	80 - 120
			Dissolved Nitrate (N)	2019/05/11		101	%	80 - 120
9413246	PR6	Method Blank	Dissolved Nitrite (N)	2019/05/11	<0.010		mg/L	
			Dissolved Nitrate (N)	2019/05/11	<0.010		mg/L	
9413246	PR6	RPD [VQ3862-03]	Dissolved Nitrite (N)	2019/05/11	NC		%	20
			Dissolved Nitrate (N)	2019/05/11	1.5		%	20
9413248	KD9	Spiked Blank	Alkalinity (Total as CaCO3)	2019/05/10		94	%	80 - 120
9413248	KD9	Method Blank	Alkalinity (PP as CaCO3)	2019/05/10	<1.0		mg/L	
			Alkalinity (Total as CaCO3)	2019/05/10	<1.0		mg/L	
			Bicarbonate (HCO3)	2019/05/10	<1.0		mg/L	
			Carbonate (CO3)	2019/05/10	<1.0		mg/L	
			Hydroxide (OH)	2019/05/10	<1.0		mg/L	
9413248	KD9	RPD	Alkalinity (PP as CaCO3)	2019/05/10	6.0		%	20
			Alkalinity (Total as CaCO3)	2019/05/10	6.3		%	20
			Bicarbonate (HCO3)	2019/05/10	NC		%	20
			Carbonate (CO3)	2019/05/10	7.4		%	20
			Hydroxide (OH)	2019/05/10	5.4		%	20
9413249	KD9	Spiked Blank	pH	2019/05/10		99	%	97 - 103
9413249	KD9	RPD	pH	2019/05/10	0.10		%	N/A
9413250	KD9	Spiked Blank	Conductivity	2019/05/10		100	%	90 - 110
9413250	KD9	Method Blank	Conductivity	2019/05/10	<2.0		uS/cm	
9413250	KD9	RPD	Conductivity	2019/05/10	0		%	10
9413915	FM0	Matrix Spike	Total Total Kjeldahl Nitrogen	2019/05/12		82	%	80 - 120
9413915	FM0	QC Standard	Total Total Kjeldahl Nitrogen	2019/05/12		90	%	80 - 120
9413915	FM0	Spiked Blank	Total Total Kjeldahl Nitrogen	2019/05/12		102	%	80 - 120
9413915	FM0	Method Blank	Total Total Kjeldahl Nitrogen	2019/05/13	<0.050		mg/L	
9413915	FM0	RPD	Total Total Kjeldahl Nitrogen	2019/05/12	NC		%	20
9413917	JLD	Matrix Spike [VQ3861-05]	Total Total Kjeldahl Nitrogen	2019/05/13		96	%	80 - 120
9413917	JLD	QC Standard	Total Total Kjeldahl Nitrogen	2019/05/13		93	%	80 - 120
9413917	JLD	Spiked Blank	Total Total Kjeldahl Nitrogen	2019/05/13		103	%	80 - 120
9413917	JLD	Method Blank	Total Total Kjeldahl Nitrogen	2019/05/13	<0.050		mg/L	
9413917	JLD	RPD [VQ3861-05]	Total Total Kjeldahl Nitrogen	2019/05/13	NC		%	20
9414669	PL	Matrix Spike [VQ3863-03]	Dissolved Barium (Ba)	2019/05/12		92	%	80 - 120
			Dissolved Boron (B)	2019/05/12		94	%	80 - 120
			Dissolved Calcium (Ca)	2019/05/12		NC	%	80 - 120
			Dissolved Iron (Fe)	2019/05/12		95	%	80 - 120
			Dissolved Lithium (Li)	2019/05/12		97	%	80 - 120
			Dissolved Magnesium (Mg)	2019/05/12		NC	%	80 - 120
			Dissolved Manganese (Mn)	2019/05/12		91	%	80 - 120
			Dissolved Phosphorus (P)	2019/05/12		112	%	80 - 120
			Dissolved Potassium (K)	2019/05/12		98	%	80 - 120
			Dissolved Silicon (Si)	2019/05/12		100	%	80 - 120
			Dissolved Sodium (Na)	2019/05/12		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/05/12		85	%	80 - 120
			Dissolved Sulphur (S)	2019/05/12		NC	%	80 - 120

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9414669	PL	Spiked Blank	Dissolved Barium (Ba)	2019/05/12		95	%	80 - 120
			Dissolved Boron (B)	2019/05/12		96	%	80 - 120
			Dissolved Calcium (Ca)	2019/05/12		97	%	80 - 120
			Dissolved Iron (Fe)	2019/05/12		100	%	80 - 120
			Dissolved Lithium (Li)	2019/05/12		97	%	80 - 120
			Dissolved Magnesium (Mg)	2019/05/12		105	%	80 - 120
			Dissolved Manganese (Mn)	2019/05/12		97	%	80 - 120
			Dissolved Phosphorus (P)	2019/05/12		103	%	80 - 120
			Dissolved Potassium (K)	2019/05/12		98	%	80 - 120
			Dissolved Silicon (Si)	2019/05/12		98	%	80 - 120
			Dissolved Sodium (Na)	2019/05/12		98	%	80 - 120
			Dissolved Strontium (Sr)	2019/05/12		95	%	80 - 120
			Dissolved Sulphur (S)	2019/05/12		102	%	80 - 120
9414669	PL	Method Blank	Dissolved Barium (Ba)	2019/05/12	<0.010		mg/L	
			Dissolved Boron (B)	2019/05/12	<0.020		mg/L	
			Dissolved Calcium (Ca)	2019/05/12	<0.30		mg/L	
			Dissolved Iron (Fe)	2019/05/12	<0.060		mg/L	
			Dissolved Lithium (Li)	2019/05/12	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2019/05/12	<0.20		mg/L	
			Dissolved Manganese (Mn)	2019/05/12	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2019/05/12	<0.10		mg/L	
			Dissolved Potassium (K)	2019/05/12	<0.30		mg/L	
			Dissolved Silicon (Si)	2019/05/12	<0.10		mg/L	
			Dissolved Sodium (Na)	2019/05/12	<0.50		mg/L	
			Dissolved Strontium (Sr)	2019/05/12	<0.020		mg/L	
			Dissolved Sulphur (S)	2019/05/12	<0.20		mg/L	
9414669	PL	RPD [VQ3863-03]	Dissolved Barium (Ba)	2019/05/12	1.5		%	20
			Dissolved Boron (B)	2019/05/12	0.85		%	20
			Dissolved Calcium (Ca)	2019/05/12	0.86		%	20
			Dissolved Iron (Fe)	2019/05/12	6.4		%	20
			Dissolved Lithium (Li)	2019/05/12	0.26		%	20
			Dissolved Magnesium (Mg)	2019/05/12	1.4		%	20
			Dissolved Manganese (Mn)	2019/05/12	1.2		%	20
			Dissolved Phosphorus (P)	2019/05/12	NC		%	20
			Dissolved Potassium (K)	2019/05/12	0.64		%	20
			Dissolved Silicon (Si)	2019/05/12	2.0		%	20
			Dissolved Sodium (Na)	2019/05/12	0.10		%	20
			Dissolved Strontium (Sr)	2019/05/12	1.5		%	20
			Dissolved Sulphur (S)	2019/05/12	4.9		%	20
9414675	PL	Matrix Spike	Dissolved Barium (Ba)	2019/05/12		93	%	80 - 120
			Dissolved Boron (B)	2019/05/12		96	%	80 - 120
			Dissolved Calcium (Ca)	2019/05/12		84	%	80 - 120
			Dissolved Iron (Fe)	2019/05/12		95	%	80 - 120
			Dissolved Lithium (Li)	2019/05/12		100	%	80 - 120
			Dissolved Magnesium (Mg)	2019/05/12		96	%	80 - 120
			Dissolved Manganese (Mn)	2019/05/12		90	%	80 - 120
			Dissolved Phosphorus (P)	2019/05/12		112	%	80 - 120
			Dissolved Potassium (K)	2019/05/12		100	%	80 - 120
			Dissolved Silicon (Si)	2019/05/12		98	%	80 - 120
			Dissolved Sodium (Na)	2019/05/12		NC	%	80 - 120
			Dissolved Strontium (Sr)	2019/05/12		83	%	80 - 120
9414675	PL	Spiked Blank	Dissolved Barium (Ba)	2019/05/12		97	%	80 - 120
			Dissolved Boron (B)	2019/05/12		110	%	80 - 120
			Dissolved Calcium (Ca)	2019/05/12		95	%	80 - 120

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			Dissolved Iron (Fe)	2019/05/12		101	%	80 - 120
			Dissolved Lithium (Li)	2019/05/12		103	%	80 - 120
			Dissolved Magnesium (Mg)	2019/05/12		109	%	80 - 120
			Dissolved Manganese (Mn)	2019/05/12		97	%	80 - 120
			Dissolved Phosphorus (P)	2019/05/12		106	%	80 - 120
			Dissolved Potassium (K)	2019/05/12		104	%	80 - 120
			Dissolved Silicon (Si)	2019/05/12		100	%	80 - 120
			Dissolved Sodium (Na)	2019/05/12		103	%	80 - 120
			Dissolved Strontium (Sr)	2019/05/12		98	%	80 - 120
			Dissolved Sulphur (S)	2019/05/12		104	%	80 - 120
9414675	PL	Method Blank	Dissolved Barium (Ba)	2019/05/12	<0.010		mg/L	
			Dissolved Boron (B)	2019/05/12	<0.020		mg/L	
			Dissolved Calcium (Ca)	2019/05/12	<0.30		mg/L	
			Dissolved Iron (Fe)	2019/05/12	<0.060		mg/L	
			Dissolved Lithium (Li)	2019/05/12	<0.020		mg/L	
			Dissolved Magnesium (Mg)	2019/05/12	<0.20		mg/L	
			Dissolved Manganese (Mn)	2019/05/12	<0.0040		mg/L	
			Dissolved Phosphorus (P)	2019/05/12	<0.10		mg/L	
			Dissolved Potassium (K)	2019/05/12	<0.30		mg/L	
			Dissolved Silicon (Si)	2019/05/12	<0.10		mg/L	
			Dissolved Sodium (Na)	2019/05/12	<0.50		mg/L	
			Dissolved Strontium (Sr)	2019/05/12	<0.020		mg/L	
			Dissolved Sulphur (S)	2019/05/12	<0.20		mg/L	
9414675	PL	RPD	Dissolved Calcium (Ca)	2019/05/12	1.3		%	20
			Dissolved Iron (Fe)	2019/05/12	NC		%	20
			Dissolved Magnesium (Mg)	2019/05/12	0.53		%	20
			Dissolved Manganese (Mn)	2019/05/12	1.3		%	20
			Dissolved Potassium (K)	2019/05/12	1.8		%	20
			Dissolved Sodium (Na)	2019/05/12	0.86		%	20
9416490	STI	Matrix Spike	Dissolved Chloride (Cl)	2019/05/14		NC	%	80 - 120
9416490	STI	Spiked Blank	Dissolved Chloride (Cl)	2019/05/14		103	%	80 - 120
9416490	STI	Method Blank	Dissolved Chloride (Cl)	2019/05/14	<1.0		mg/L	
9416490	STI	RPD	Dissolved Chloride (Cl)	2019/05/14	1.5		%	20
9416527	STI	Matrix Spike	Dissolved Sulphate (SO4)	2019/05/14		NC	%	80 - 120
9416527	STI	Spiked Blank	Dissolved Sulphate (SO4)	2019/05/14		97	%	80 - 120
9416527	STI	Method Blank	Dissolved Sulphate (SO4)	2019/05/14	<1.0		mg/L	
9416527	STI	RPD	Dissolved Sulphate (SO4)	2019/05/14	0.38		%	20
9443808	éEH	Spiked Blank	2-Fluorobiphenyl	2019/05/27		61	%	50 - 130
			D5-NITROBENZENE (sur.)	2019/05/27		65	%	50 - 130
			p,p'-DDE13C12 (sur.)	2019/05/27		87	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/05/27		91	%	50 - 130
			Triphenyl phosphate (sur.)	2019/05/27		143 (1)	%	50 - 130
			Alachlor	2019/05/27		130	%	50 - 130
			Aldrin	2019/05/27		77	%	50 - 130
			Aspon	2019/05/27		121	%	50 - 130
			Atrazine	2019/05/27		120	%	50 - 130
			Azinphos ethyl	2019/05/27		131 (1)	%	50 - 130
			Azinphos-methyl	2019/05/27		117	%	50 - 130
			Benfluralin	2019/05/27		90	%	50 - 130
			a-BHC	2019/05/27		78	%	50 - 130
			b-BHC	2019/05/27		90	%	50 - 130
			d-BHC	2019/05/27		97	%	50 - 130
			Bromacil	2019/05/27		75	%	50 - 130
			Bromophos	2019/05/27		100	%	50 - 130

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			Bromophos-ethyl	2019/05/27		106	%	50 - 130
			Butylate	2019/05/27		65	%	50 - 130
			Captan	2019/05/27		138 (1)	%	50 - 130
			Carbophenothion	2019/05/27		109	%	50 - 130
			Chlorbenside	2019/05/27		79	%	50 - 130
			a-Chlordane	2019/05/27		101	%	50 - 130
			g-Chlordane	2019/05/27		110	%	50 - 130
			Chlorfenson(ovex)	2019/05/27		83	%	50 - 130
			Chlorfenvinphos(e/z)	2019/05/27		133 (1)	%	50 - 130
			Chlormephos	2019/05/27		59	%	50 - 130
			Chlorothalonil (Daconil)	2019/05/27		97	%	50 - 130
			Chlorpropham	2019/05/27		85	%	50 - 130
			Chlorpyrifos	2019/05/27		108	%	50 - 130
			Chlorpyriphos-methyl	2019/05/27		102	%	50 - 130
			Dacthal	2019/05/27		87	%	50 - 130
			Chlorthiophos	2019/05/27		94	%	50 - 130
			Cyanazine (Bladex)	2019/05/27		146 (1)	%	50 - 130
			Cyanophos	2019/05/27		95	%	50 - 130
			o,p'-DDD	2019/05/27		94	%	50 - 130
			o,p'-DDE	2019/05/27		99	%	50 - 130
			p,p'-DDE	2019/05/27		101	%	50 - 130
			o,p-DDT+p,p-DDD	2019/05/27		102	%	50 - 130
			p,p'-DDT	2019/05/27		110	%	50 - 130
			Desethyl-atrazine	2019/05/27		58	%	50 - 130
			Demeton	2019/05/27		60	%	50 - 130
			Desmetryn	2019/05/27		101	%	50 - 130
			Diallate(e/z)	2019/05/27		97	%	50 - 130
			Diazinon	2019/05/27		125	%	50 - 130
			Dichlobenil	2019/05/27		61	%	50 - 130
			Dichloran	2019/05/27		80	%	50 - 130
			Dichlofenthion	2019/05/27		107	%	50 - 130
			Dichlofluanid	2019/05/27		130	%	50 - 130
			Dichlorvos + Naled	2019/05/27		64	%	50 - 130
			Diclofop-methyl	2019/05/27		127	%	50 - 130
			Dicofol	2019/05/27		38 (1)	%	50 - 130
			Dicrotophos	2019/05/27		57	%	50 - 130
			Dimethoate	2019/05/27		122	%	50 - 130
			Dioxathion	2019/05/27		99	%	50 - 130
			Diphenylamine	2019/05/27		57	%	50 - 130
			Disulfoton (Di-Syston)	2019/05/27		109	%	50 - 130
			Endosulfan Sulfate	2019/05/27		96	%	50 - 130
			Endosulfan I	2019/05/27		93	%	50 - 130
			Dieldrin	2019/05/27		101	%	50 - 130
			Endosulfan II	2019/05/27		81	%	50 - 130
			Endrin	2019/05/27		129	%	50 - 130
			Endrin Aldehyde	2019/05/27		102	%	50 - 130
			Endrin ketone	2019/05/27		100	%	50 - 130
			EPN	2019/05/27		112	%	50 - 130
			Eptam	2019/05/27		66	%	50 - 130
			Ethalfluralin	2019/05/27		101	%	50 - 130
			Ronnel	2019/05/27		106	%	50 - 130
			Fenitrothion	2019/05/27		115	%	50 - 130
			Fenthion	2019/05/27		97	%	50 - 130
			Fensulfothion	2019/05/27		157 (1)	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Folpet	2019/05/27		128	%	50 - 130
			Fonofos	2019/05/27		100	%	50 - 130
			Heptachlor	2019/05/27		101	%	50 - 130
			Heptachlor Epoxide	2019/05/27		112	%	50 - 130
			Hexachlorobenzene	2019/05/27		80	%	50 - 130
			Hexazinone	2019/05/27		89	%	50 - 130
			Iodofenphos	2019/05/27		97	%	50 - 130
			Iprodione	2019/05/27		126	%	50 - 130
			Isofenphos	2019/05/27		109	%	50 - 130
			Lindane (BHC), gamma-	2019/05/27		86	%	50 - 130
			Malaoxon	2019/05/27		82	%	50 - 130
			Malathion	2019/05/27		148 (1)	%	50 - 130
			Metalaxyl	2019/05/27		78	%	50 - 130
			Ethion	2019/05/27		125	%	50 - 130
			Methidathion	2019/05/27		99	%	50 - 130
			4,4'-methoxychlor	2019/05/27		131 (1)	%	50 - 130
			Metolachlor	2019/05/27		145 (1)	%	50 - 130
			Metribuzin (Sencor)	2019/05/27		114	%	50 - 130
			Mevinphos (Phosdrin)	2019/05/27		113	%	50 - 130
			Mirex	2019/05/27		105	%	50 - 130
			Nitrofen	2019/05/27		99	%	50 - 130
			Omethoate	2019/05/27		10 (1)	%	50 - 130
			Methyl parathion	2019/05/27		107	%	50 - 130
			Parathion	2019/05/27		100	%	50 - 130
			Permethrin	2019/05/27		105	%	50 - 130
			Phorate (Thimet)	2019/05/27		88	%	50 - 130
			Phosalone	2019/05/27		138 (1)	%	50 - 130
			Phosmet	2019/05/27		103	%	50 - 130
			Phosphamidon	2019/05/27		141 (1)	%	50 - 130
			Pirimicarb	2019/05/27		97	%	50 - 130
			Quinalophos	2019/05/27		90	%	50 - 130
			Pirimiphos-ethyl	2019/05/27		119	%	50 - 130
			Pirimiphos-methyl	2019/05/27		117	%	50 - 130
			Procymidone	2019/05/27		102	%	50 - 130
			Profenophos	2019/05/27		120	%	50 - 130
			Profluralin	2019/05/27		107	%	50 - 130
			Prometryn	2019/05/27		106	%	50 - 130
			Pronamide	2019/05/27		88	%	50 - 130
			Propazine	2019/05/27		94	%	50 - 130
			Propiconazole	2019/05/27		96	%	50 - 130
			Pyrazophos	2019/05/27		121	%	50 - 130
			Quintozene	2019/05/27		79	%	50 - 130
			Simazine	2019/05/27		113	%	50 - 130
			Stirophos	2019/05/27		110	%	50 - 130
			Sulfotepp	2019/05/27		94	%	50 - 130
			Tecnazene	2019/05/27		62	%	50 - 130
			Terbufos	2019/05/27		132 (1)	%	50 - 130
			Terbutryne	2019/05/27		116	%	50 - 130
			Terbuthylazine	2019/05/27		89	%	50 - 130
			Tetradifon	2019/05/27		88	%	50 - 130
			Tolylfluanid	2019/05/27		113	%	50 - 130
			Triadimefon	2019/05/27		93	%	50 - 130
			Triallate	2019/05/27		106	%	50 - 130
			Trifluralin	2019/05/27		106	%	50 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Vinclozolin	2019/05/27		98	%	50 - 130
9443808	éEH	Method Blank	2-Fluorobiphenyl	2019/05/27		80	%	50 - 130
			D5-NITROBENZENE (sur.)	2019/05/27		88	%	50 - 130
			p,p'-DDE13C12 (sur.)	2019/05/27		87	%	50 - 130
			TERPHENYL-D14 (sur.)	2019/05/27		102	%	50 - 130
			Triphenyl phosphate (sur.)	2019/05/27		130	%	50 - 130
			Alachlor	2019/05/27	<0.050		ug/L	
			Aldrin	2019/05/27	<0.020		ug/L	
			Aspon	2019/05/27	<0.050		ug/L	
			Atrazine	2019/05/27	<0.050		ug/L	
			Azinphos ethyl	2019/05/27	<0.20		ug/L	
			Azinphos-methyl	2019/05/27	<0.20		ug/L	
			Benfluralin	2019/05/27	<0.050		ug/L	
			a-BHC	2019/05/27	<0.050		ug/L	
			b-BHC	2019/05/27	<0.050		ug/L	
			d-BHC	2019/05/27	<0.050		ug/L	
			Bromacil	2019/05/27	<0.050		ug/L	
			Bromophos	2019/05/27	<0.050		ug/L	
			Bromophos-ethyl	2019/05/27	<0.050		ug/L	
			Butylate	2019/05/27	<0.050		ug/L	
			Captan	2019/05/27	<0.10		ug/L	
			Carbophenothion	2019/05/27	<0.30		ug/L	
			Chlorbenside	2019/05/27	<0.050		ug/L	
			a-Chlordane	2019/05/27	<0.050		ug/L	
			g-Chlordane	2019/05/27	<0.050		ug/L	
			Chlorfenson(ovex)	2019/05/27	<0.050		ug/L	
			Chlorfenvinphos(e/z)	2019/05/27	<0.050		ug/L	
			Chlormephos	2019/05/27	<0.050		ug/L	
			Chlorothalonil (Daconil)	2019/05/27	<0.050		ug/L	
			Chlorpropham	2019/05/27	<0.050		ug/L	
			Chlorpyrifos	2019/05/27	<0.010		ug/L	
			Chlorpyriphos-methyl	2019/05/27	<0.050		ug/L	
			Dacthal	2019/05/27	<0.050		ug/L	
			Chlorthiophos	2019/05/27	<0.050		ug/L	
			Cyanazine (Bladex)	2019/05/27	<0.050		ug/L	
			Cyanophos	2019/05/27	<0.050		ug/L	
			o,p'-DDD	2019/05/27	<0.010		ug/L	
			o,p'-DDE	2019/05/27	<0.010		ug/L	
			p,p'-DDE	2019/05/27	<0.010		ug/L	
			o,p-DDT+p,p-DDD	2019/05/27	<0.010		ug/L	
			p,p'-DDT	2019/05/27	<0.010		ug/L	
			Desethyl-atrazine	2019/05/27	<0.050		ug/L	
			Demeton	2019/05/27	<0.20		ug/L	
			Desmetryn	2019/05/27	<0.050		ug/L	
			Diallate(e/z)	2019/05/27	<0.050		ug/L	
			Diazinon	2019/05/27	<0.020		ug/L	
			Dichlobenil	2019/05/27	<0.050		ug/L	
			Dichloran	2019/05/27	<0.10		ug/L	
			Dichlofenthion	2019/05/27	<0.050		ug/L	
			Dichlofluanid	2019/05/27	<0.050		ug/L	
			Dichlorvos + Naled	2019/05/27	<0.050		ug/L	
			Diclofop-methyl	2019/05/27	<0.050		ug/L	
			Dicofol	2019/05/27	<0.20		ug/L	
			Dicrotophos	2019/05/27	<0.20		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dimethoate	2019/05/27	<0.050		ug/L	
			Dioxathion	2019/05/27	<0.50		ug/L	
			Diphenylamine	2019/05/27	<0.10		ug/L	
			Disulfoton (Di-Syston)	2019/05/27	<0.50		ug/L	
			Endosulfan Sulfate	2019/05/27	<0.050		ug/L	
			Endosulfan I	2019/05/27	<0.050		ug/L	
			Dieldrin	2019/05/27	<0.030		ug/L	
			Endosulfan II	2019/05/27	<0.050		ug/L	
			Endrin	2019/05/27	<0.020		ug/L	
			Endrin Aldehyde	2019/05/27	<0.050		ug/L	
			Endrin ketone	2019/05/27	<0.050		ug/L	
			EPN	2019/05/27	<0.10		ug/L	
			Eptam	2019/05/27	<0.050		ug/L	
			Ethalfluralin	2019/05/27	<0.050		ug/L	
			Ronnel	2019/05/27	<0.050		ug/L	
			Fenitrothion	2019/05/27	<0.050		ug/L	
			Fenthion	2019/05/27	<0.050		ug/L	
			Fensulfothion	2019/05/27	<0.050		ug/L	
			Folpet	2019/05/27	<0.10		ug/L	
			Fonofos	2019/05/27	<0.050		ug/L	
			Heptachlor	2019/05/27	<0.050		ug/L	
			Heptachlor Epoxide	2019/05/27	<0.050		ug/L	
			Hexachlorobenzene	2019/05/27	<0.050		ug/L	
			Hexazinone	2019/05/27	<0.050		ug/L	
			Iodofenphos	2019/05/27	<0.050		ug/L	
			Iprodione	2019/05/27	<0.050		ug/L	
			Isofenphos	2019/05/27	<0.050		ug/L	
			Lindane (BHC), gamma-	2019/05/27	<0.050		ug/L	
			Malaoxon	2019/05/27	<0.10		ug/L	
			Malathion	2019/05/27	<0.050		ug/L	
			Metalaxyl	2019/05/27	<0.050		ug/L	
			Ethion	2019/05/27	<0.050		ug/L	
			Methidathion	2019/05/27	<0.050		ug/L	
			4,4'-methoxychlor	2019/05/27	<0.050		ug/L	
			Metolachlor	2019/05/27	<0.050		ug/L	
			Metribuzin (Sencor)	2019/05/27	<0.10		ug/L	
			Mevinphos (Phosdrin)	2019/05/27	<0.050		ug/L	
			Mirex	2019/05/27	<0.050		ug/L	
			Nitrofen	2019/05/27	<0.050		ug/L	
			Omethoate	2019/05/27	<0.50		ug/L	
			Methyl parathion	2019/05/27	<0.050		ug/L	
			Parathion	2019/05/27	<0.050		ug/L	
			Permethrin	2019/05/27	<0.040		ug/L	
			Phorate (Thimet)	2019/05/27	<0.050		ug/L	
			Phosalone	2019/05/27	<0.20		ug/L	
			Phosmet	2019/05/27	<0.050		ug/L	
			Phosphamidon	2019/05/27	<0.050		ug/L	
			Pirimicarb	2019/05/27	<0.50		ug/L	
			Quinalophos	2019/05/27	<0.050		ug/L	
			Pirimiphos-ethyl	2019/05/27	<0.050		ug/L	
			Pirimiphos-methyl	2019/05/27	<0.050		ug/L	
			Procymidone	2019/05/27	<0.050		ug/L	
			Profenophos	2019/05/27	<0.050		ug/L	
			Profluralin	2019/05/27	<0.050		ug/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Prometryn	2019/05/27	<0.050		ug/L	
			Pronamide	2019/05/27	<0.050		ug/L	
			Propazine	2019/05/27	<0.050		ug/L	
			Propiconazole	2019/05/27	<0.50		ug/L	
			Pyrazophos	2019/05/27	<0.10		ug/L	
			Quintozene	2019/05/27	<0.050		ug/L	
			Simazine	2019/05/27	<0.050		ug/L	
			Stirophos	2019/05/27	<0.050		ug/L	
			Sulfotepp	2019/05/27	<0.050		ug/L	
			Tecnazene	2019/05/27	<0.050		ug/L	
			Terbufos	2019/05/27	<0.050		ug/L	
			Terbutryne	2019/05/27	<0.050		ug/L	
			Terbuthylazine	2019/05/27	<0.050		ug/L	
			Tetradifon	2019/05/27	<0.10		ug/L	
			Tolylfluanid	2019/05/27	<0.050		ug/L	
			Triadimefon	2019/05/27	<0.10		ug/L	
			Triallate	2019/05/27	<0.050		ug/L	
			Trifluralin	2019/05/27	<0.050		ug/L	
			Vinclozolin	2019/05/27	<0.050		ug/L	

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.

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NOTIFICATION LOG

No Reportable Regulation Exceedences Noted.

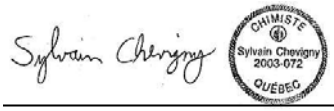
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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Dennis Ngondu, B.Sc., P.Chem., QP, Supervisor, Organics



Sylvain Chevigny, B.Sc., Chemist, Scientific Service Specialist



Ghayasuddin Khan, M.Sc., P.Chem., QP, Scientific Specialist, Inorganics



Janet Gao, B.Sc., QP, Supervisor, Organics



Harry (Peng) Liang, Senior Analyst



Veronica Falk, B.Sc., P.Chem., QP, Scientific Specialist, Organics

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#4090 CLIFTON ASSOCIATES LTD.	Company Name:		Quotation #:	B90252	Maxxam Job #:	Bottle Order #: 583091
Attention:	TERRYN KUZYK	Attention:		P.O. #:			
Address:	2222 30TH AVENUE NE CALGARY AB T2E 7K9	Address:		Project:	CG3198		
				Project Name:		COC #:	Project Manager:
Tel:	(403) 263-2556 Fax: (403) 234-9033	Tel:	Fax:	Site #:		C#583091-01-01	Linsay Sunderman
Email:	terryn_kuzyk@clifton.ca	Email:		Sampled By:	Austin		

Regulatory Criteria:
- [x] ATI
- [ ] CCME
- [ ] Other

Special Instructions:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	AT1 BTEX and F1-F2 in Water	PAH in Water by GC/MS	VOCs in Water by HS GC/MS (Std List)	Routine Water & Diss. Regulated Metals	Regulated Metals (CCME/AT1) - Dissolved	Pesticide Diagnostic Scan by GC/MS	Total Kjeldahl Nitrogen	Nitrogen (Nitrite - Nitrate) by IC	BTEX/F1		# of Bottles	Comments
1	SID#230690	101	2019.5.7	13:00	GW	N	✓	⊘	✓	✓							8	
2	SID#230691	102		13:30		N	✓		✓	✓							8	
3	SID#230692	103		14:00		N	✓		✓	✓							8	
4	SID#230693	104		11:00		N	✓		✓	✓							8	
5	SID#230694	105		10:30		N	✓	⊘	✓	✓							7	
6	SID#230695	106		9:00		N	✓	⊘	✓								6	limited sample
7	SID#230696	107		11:40		N	✓	⊘	✓	✓							8	
8	SID#230697	108		14:30		N	✓	✓	✓		✓	✓	✓	✓			12	
9	SID#230698	109		15:00		N	✓	✓	✓		✓	✓	✓	✓			12	
10	SID#230699	110	2019.5.7	10:00	GW	N			✓						✓		2	

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: [x]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission) [ ]
Date Required:
Rush Confirmation Number: *(call lab for #)*

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
Austin Mei	2019/05/07	17:00	Sara Bischoff	2019/05/07	17:21	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
[ ]	6,7,6 ice-yes	[ ] Yes [x] No
	6,9,6 ice-yes, CS-NO	

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

White: Maxxam Yellow: Client

07-May-19 17:21
Linsay Sunderman
B934265

SBZ INS-0236

Maxxam Analytics International Corporation o/a Maxxam Analytics

Maxxam Analytics International Corporation o/a Maxxam Analytics
4000 19st N.E, Calgary, Alberta Canada T2E 6P8 Tel:(403) 291-3077 Toll-free:800-563-6266 Fax:(403) 291-9468 www.maxxam.ca

207

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#4090 CLIFTON ASSOCIATES LTD.	Company Name:		Quotation #:	B90252	Maxxam Job #:	Bottle Order #: 583091
Attention:	TERRYN KUZYK	Attention:		P.O. #:			
Address:	2222 30TH AVENUE NE CALGARY AB T2E 7K9	Address:		Project:	CG3198	COC #: C#583091-02-01	Project Manager: Linsay Sunderman
Tel:	(403) 263-2556 Fax: (403) 234-9033	Tel:	Fax:	Project Name:			
Email:	terryn_kuzyk@clifton.ca	Email:		Site #:			
				Sampled By:	Austin		

Regulatory Criteria: ☑ ATI ☐ CCME ☐ Other

Special Instructions:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	AT1 BTEX and F1-F2 in Water	PAH in Water by GC/MS	VOCs in Water by HS GC/MS (Std List)	Routine Water & Diss. Regulated Metals	Regulated Metals (CCME/AT1) - Dissolved	Pesticide Diagnostic Scan by GC/MS	Total Kjeldahl Nitrogen	Nitrogen (Nitrite - Nitrate) by IC			# of Bottles	Comments
1	SID#230700	111	2019/5/7	15:40	GW	N	✓	✓	✓		✓	✓	✓	✓			12	
2	SID#230701	112		14:20	GW	N	✓	✓	✓		✓	✓	✓	✓			12	
3		195		10:30	GW	N	✓	⊘	✓	✓							7	
4		MW 9		9:30	GW	N	✓		✓	✓							8	
5		191	↓	15:40	GW	N	✓	✓	✓		✓	✓	✓	✓			12	
6		Trip Blank	2019/5/17		W				✓								2	
7																		
8																		
9																		
10																		

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: ☑
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission) ☐
Date Required:
Rush Confirmation Number: *(call lab for #)*

07-May-19 17:21
Linsay Sunderman
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* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Austin Mei	2019/05/07	17:00	Sara Bischoff	2019/05/07	17:21		☐	6,7,6 ice-yes	☐ Yes ☒ No

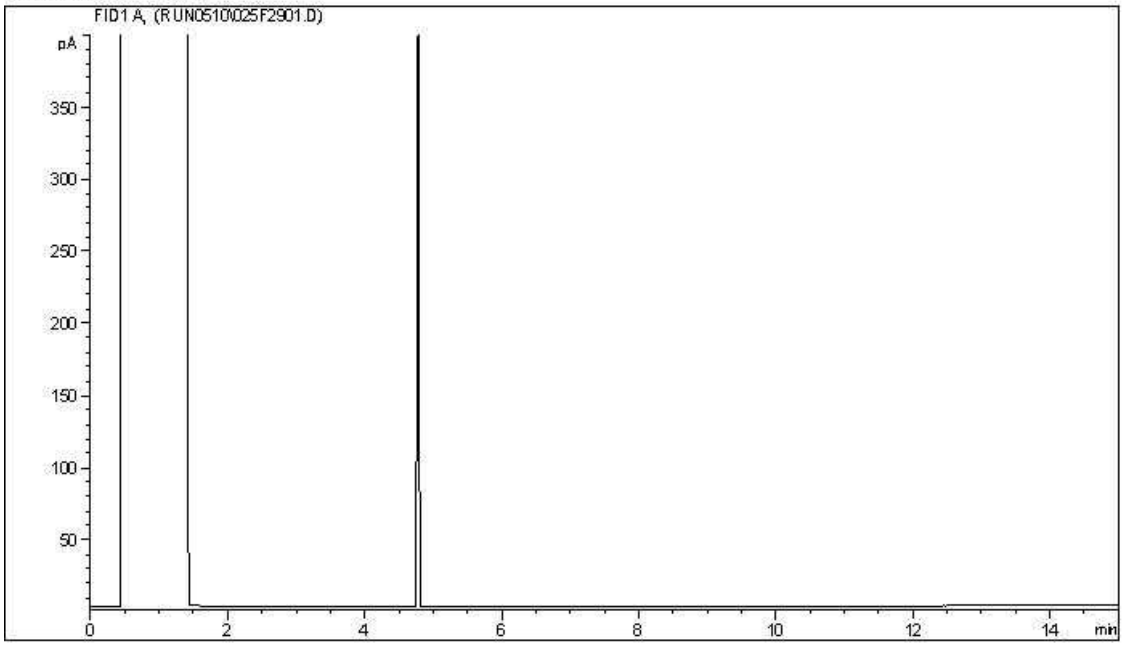
* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

White: Maxxam Yellow: Client

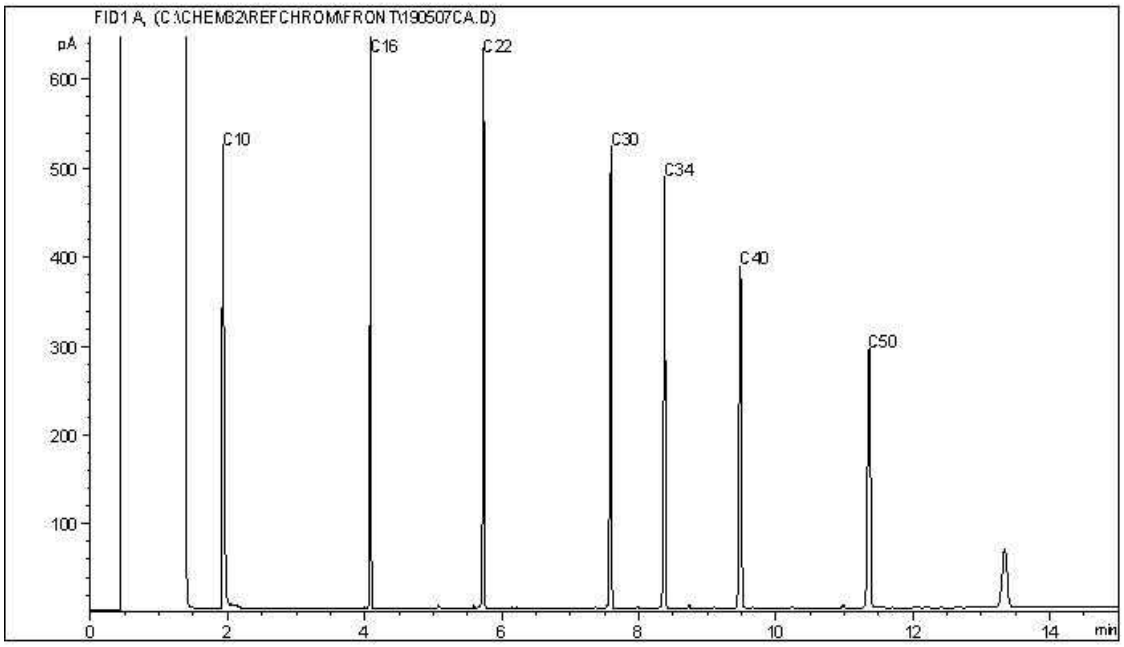
6,9,6 ice-yes CS-No

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



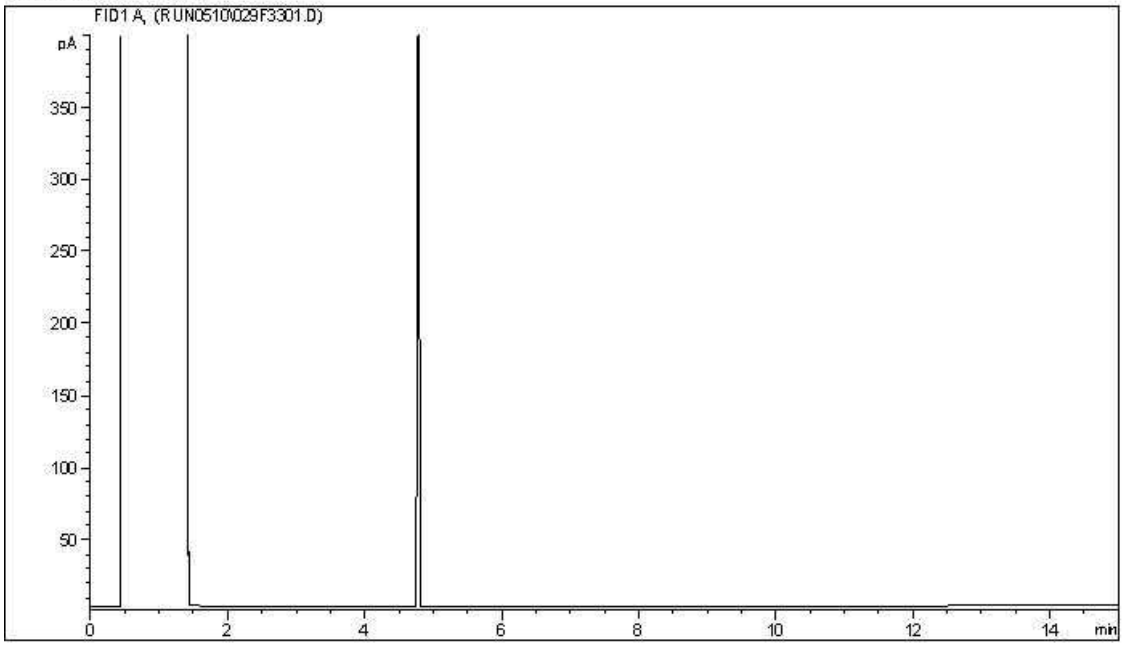
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

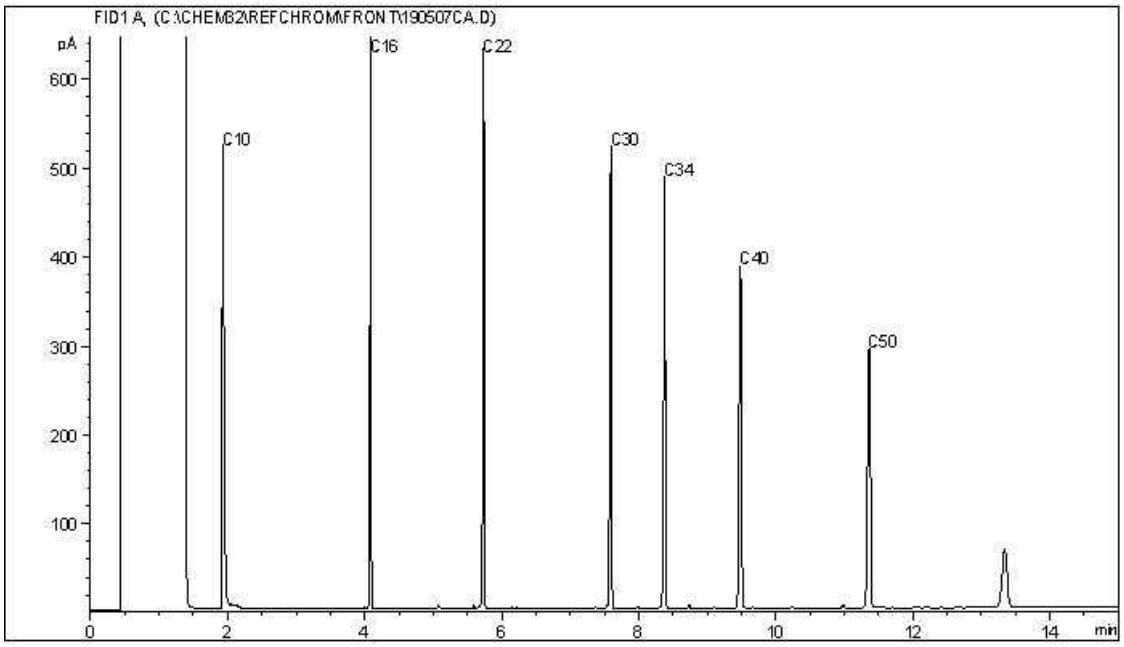
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

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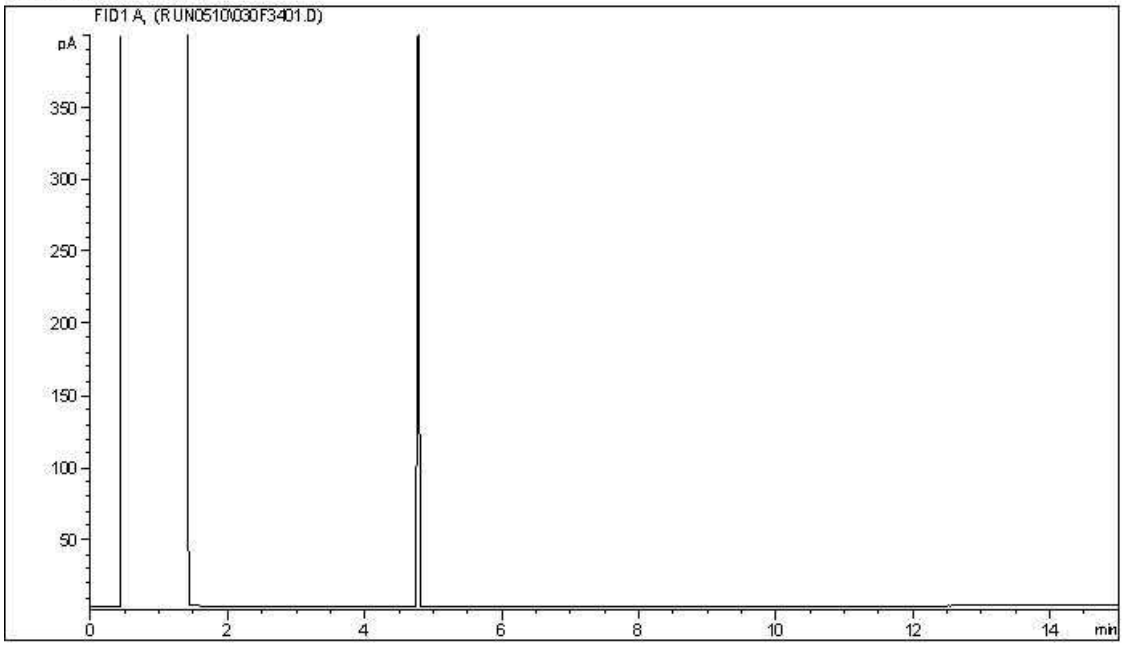
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B934265
Report Date: 2019/05/31
Maxxam Sample: VQ3853

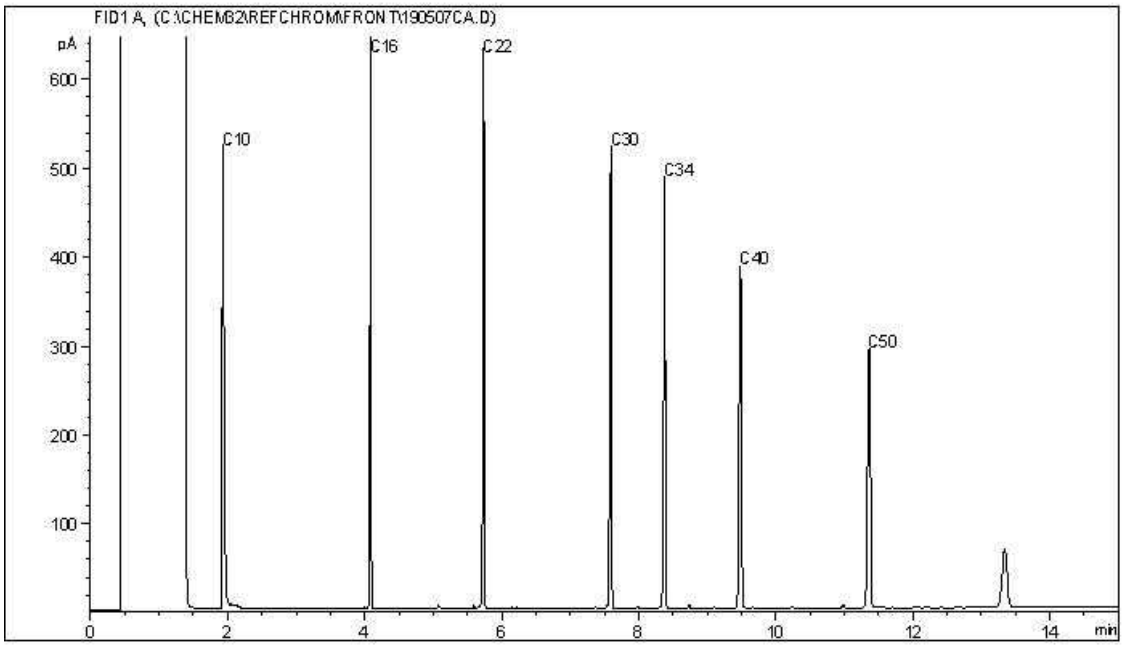
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Client ID: 103

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



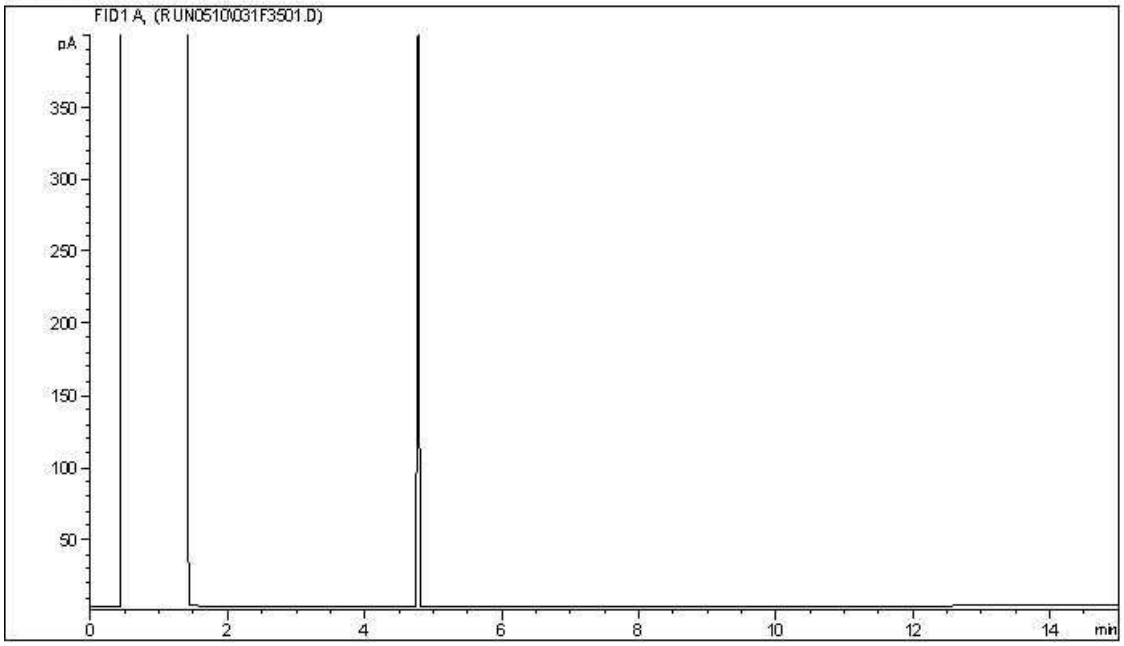
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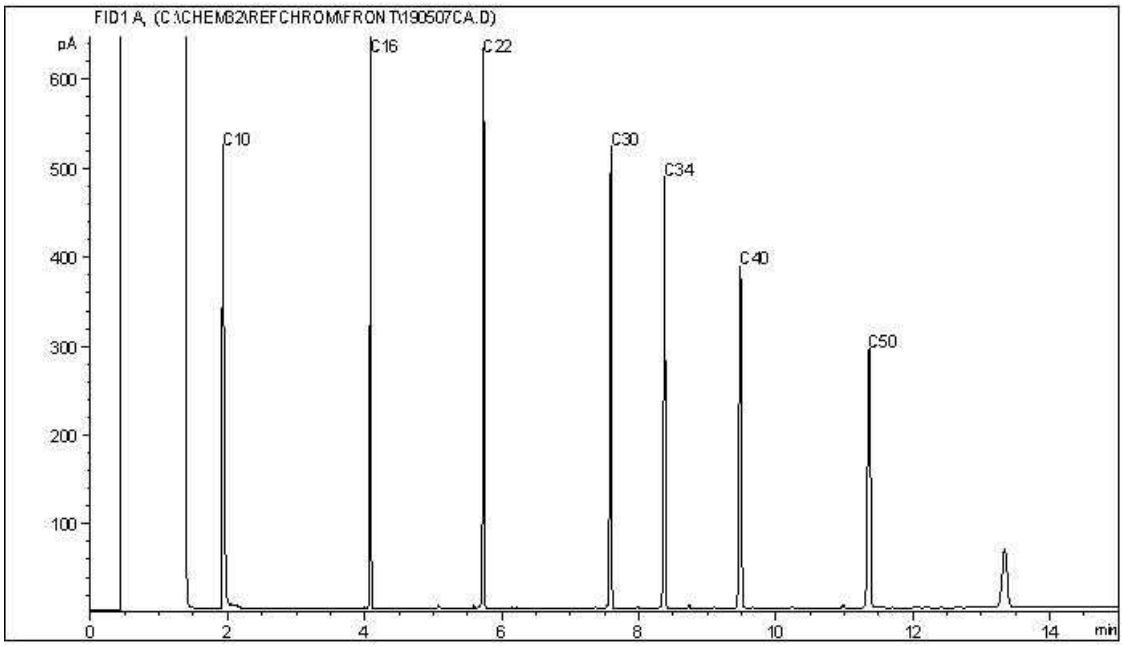
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



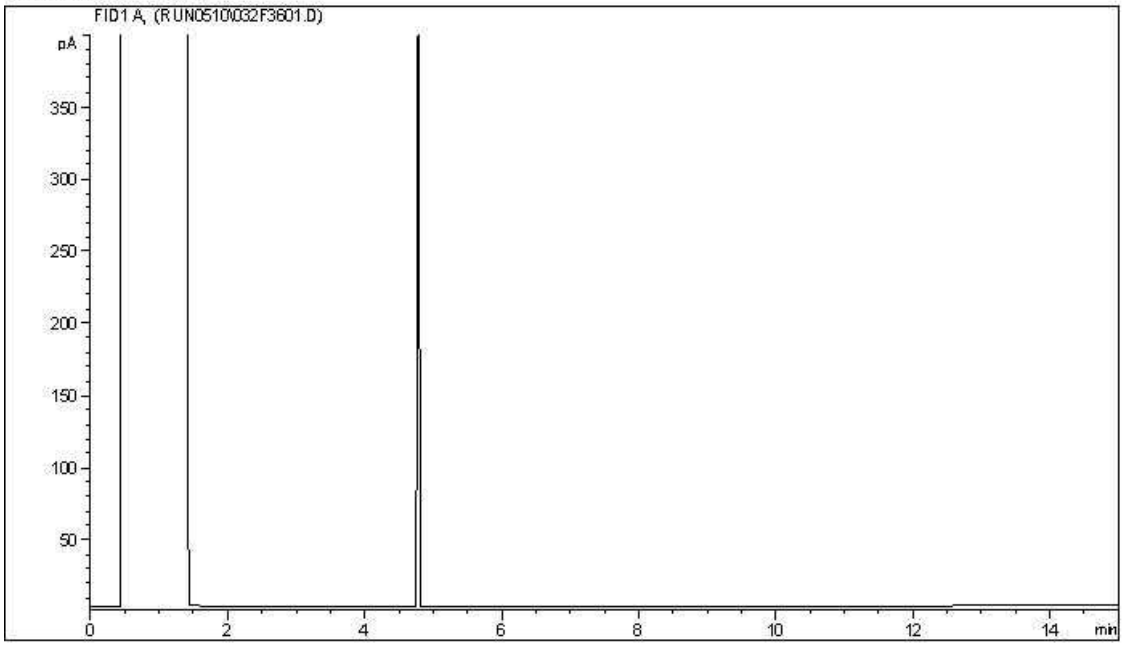
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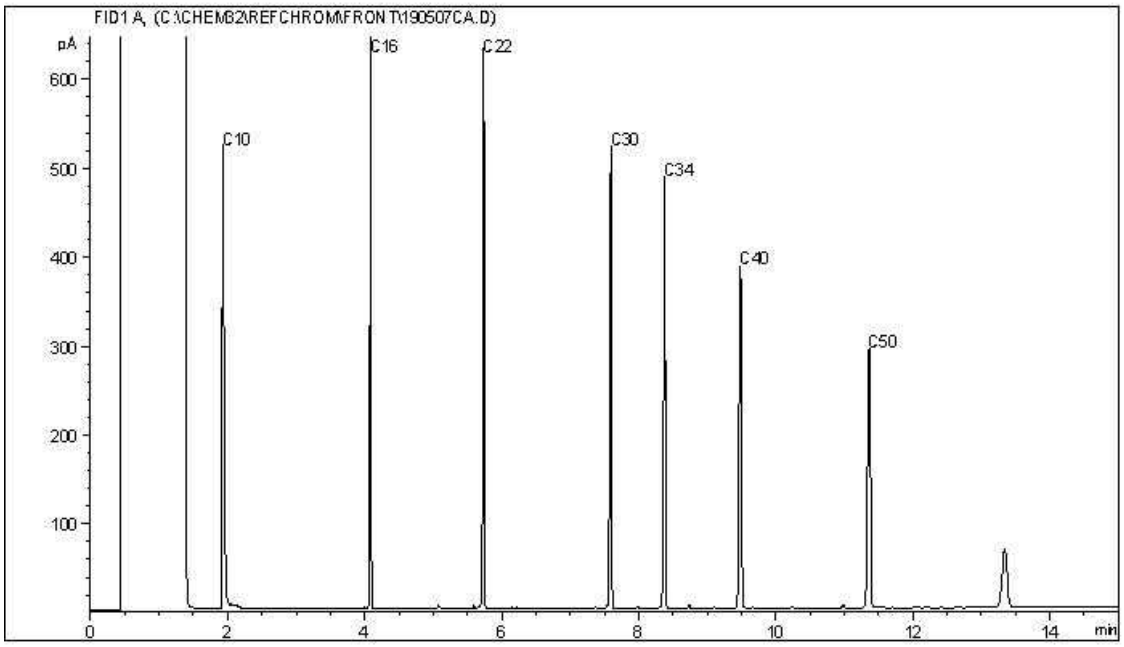
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



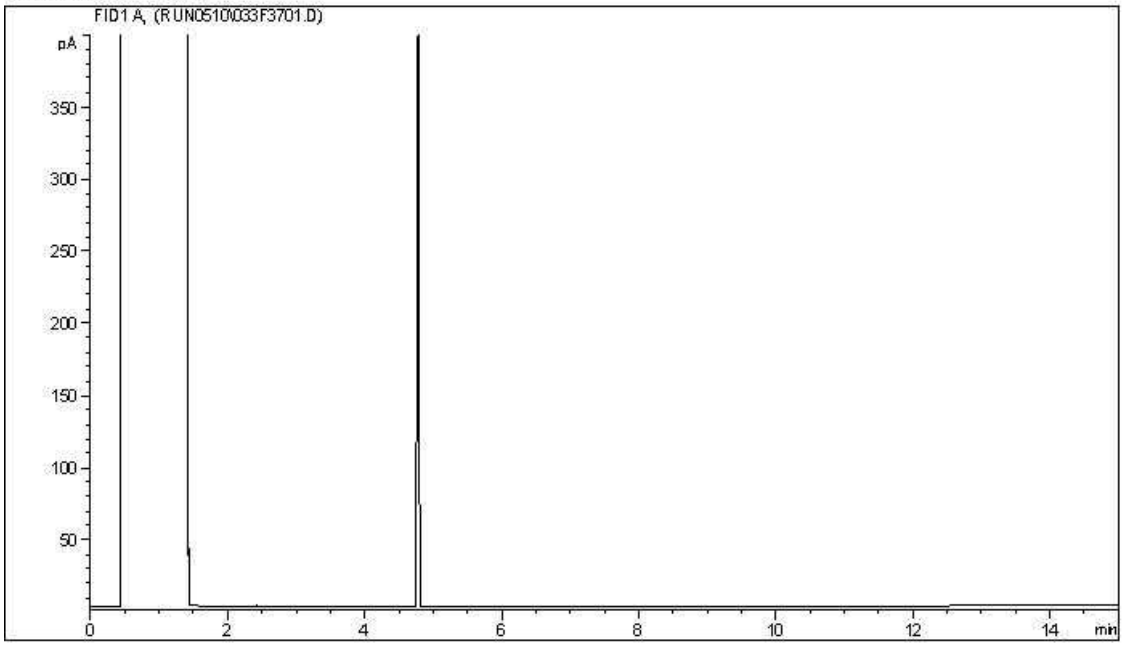
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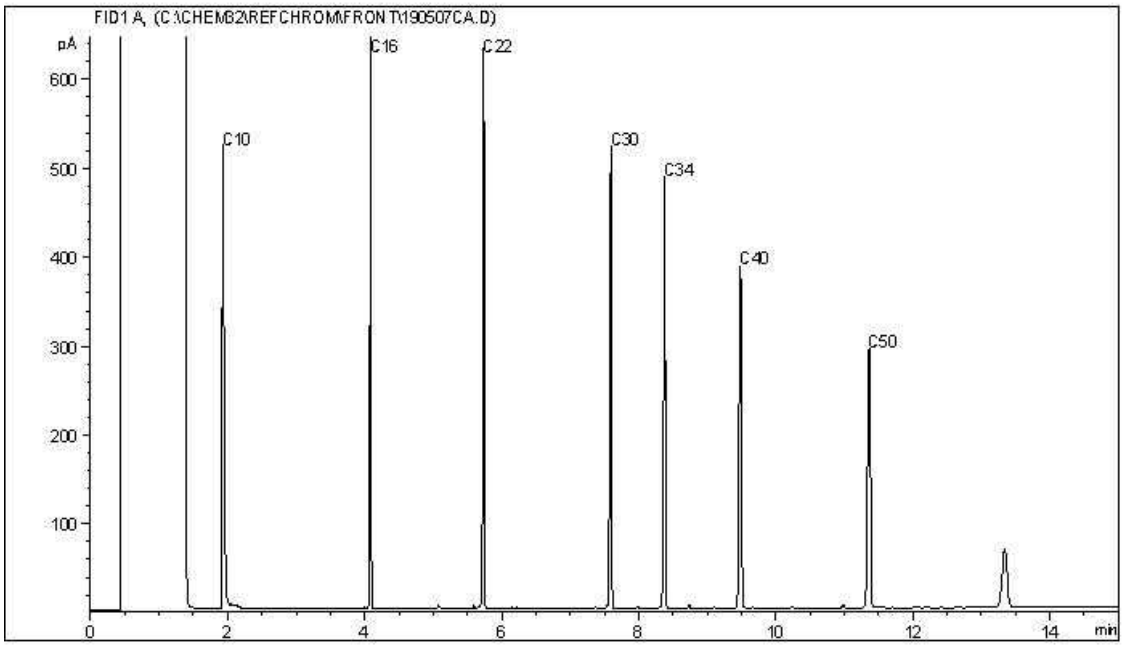
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



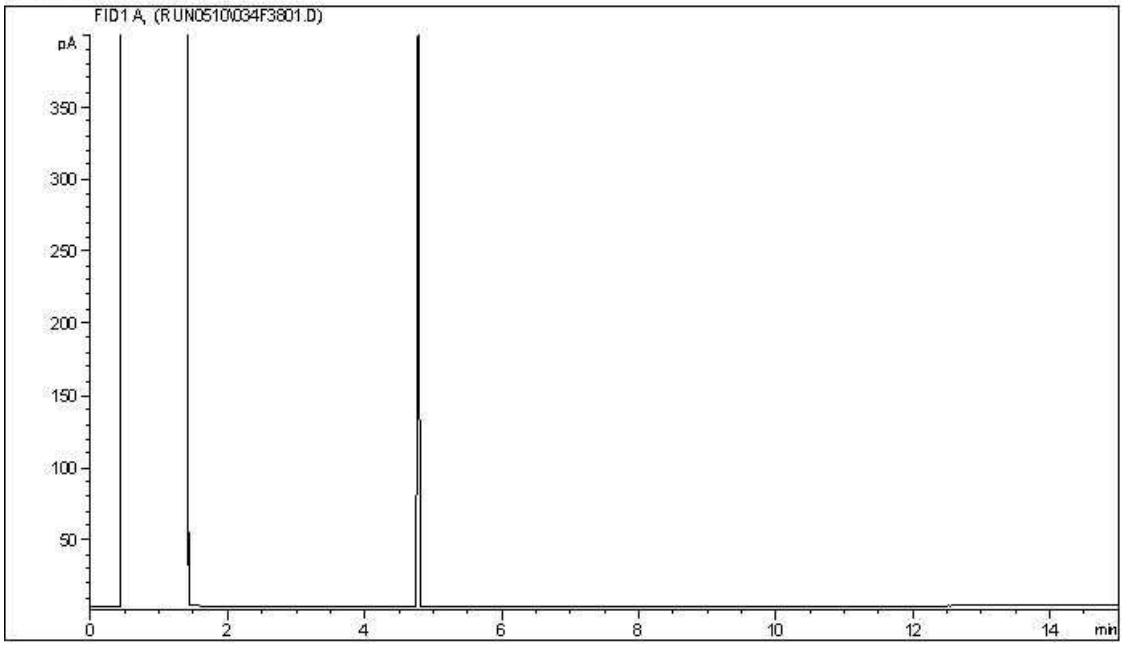
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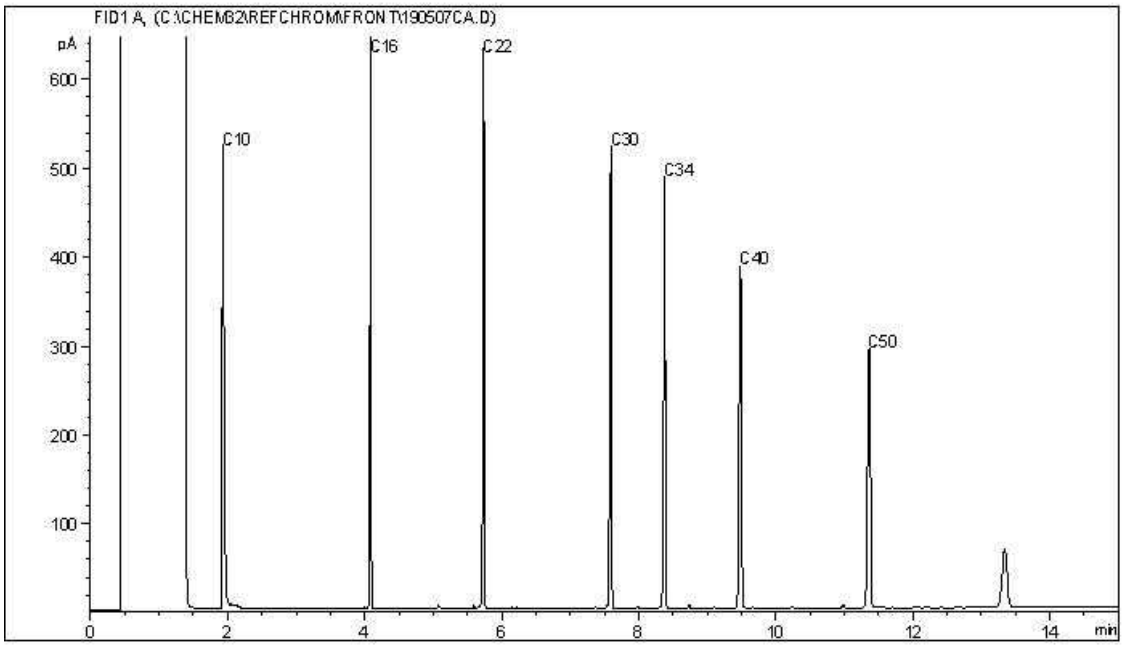
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



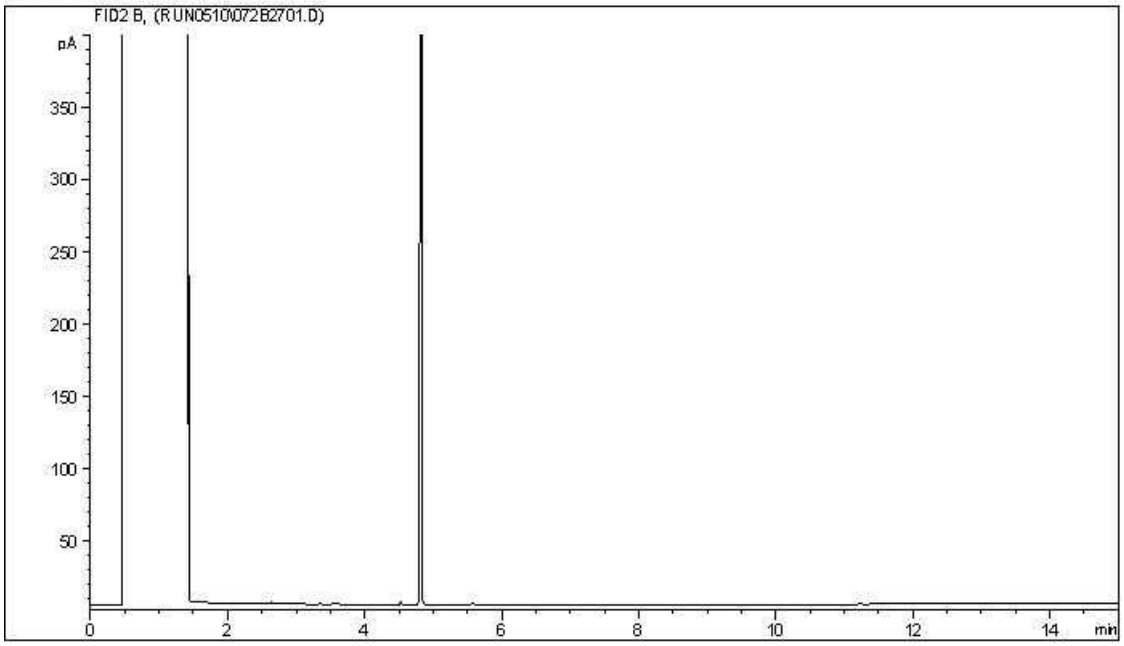
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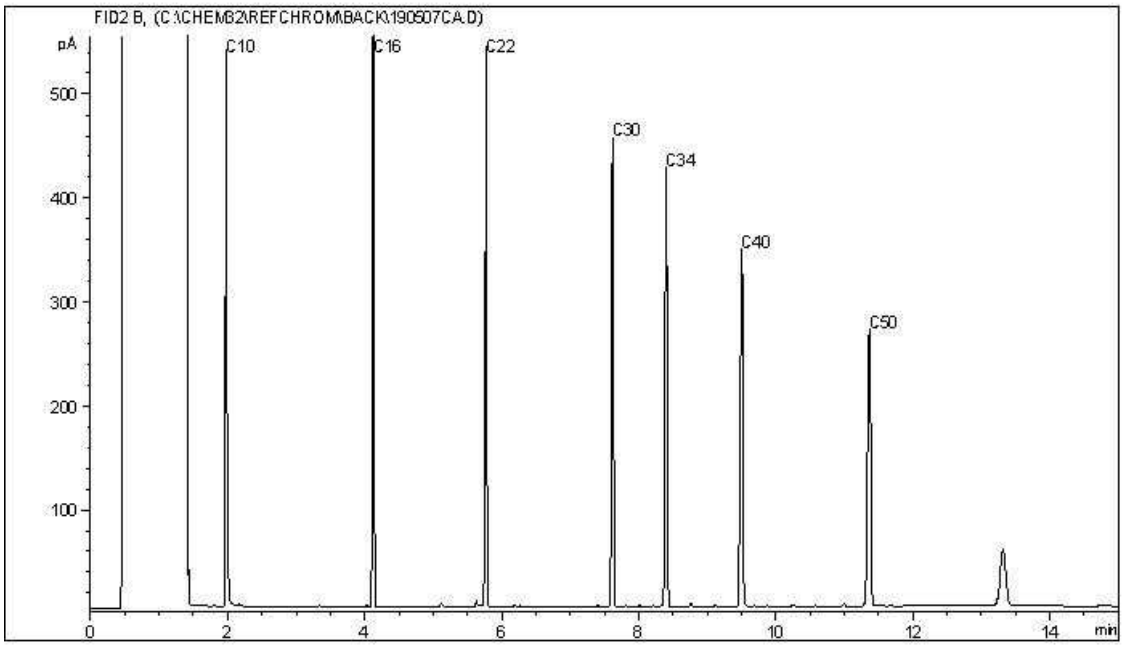
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



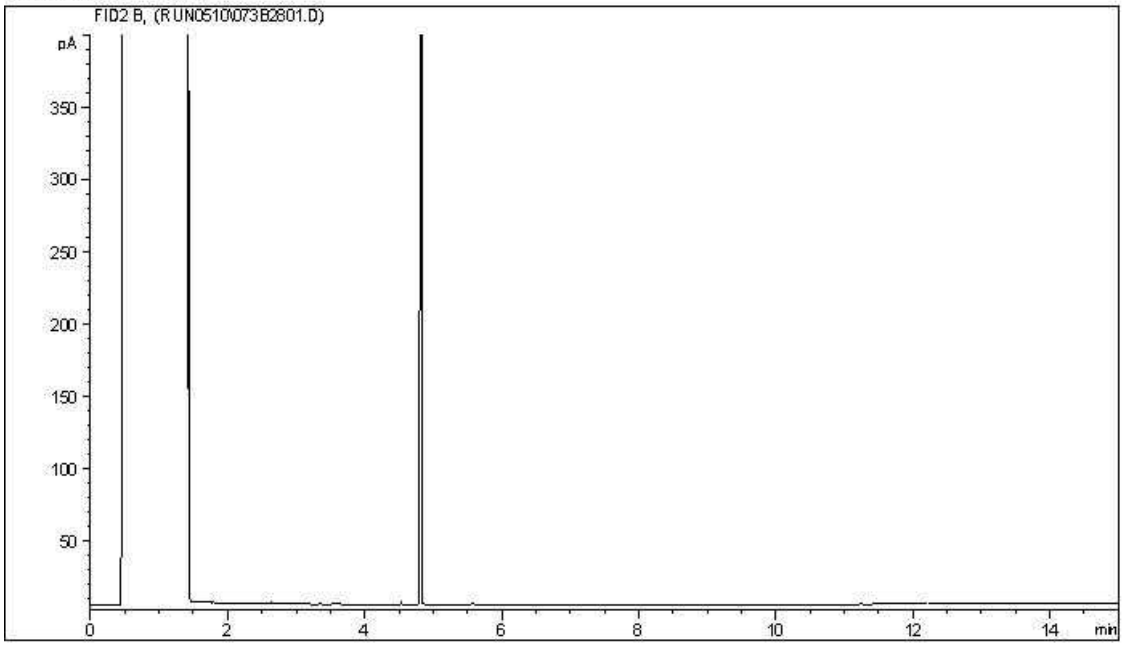
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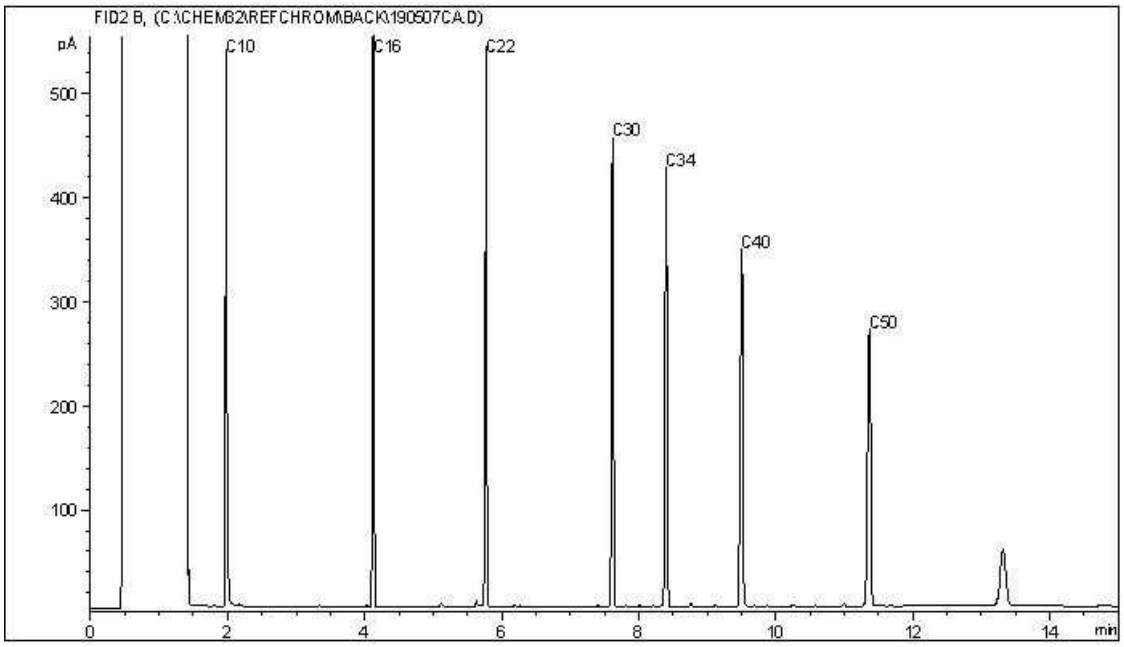
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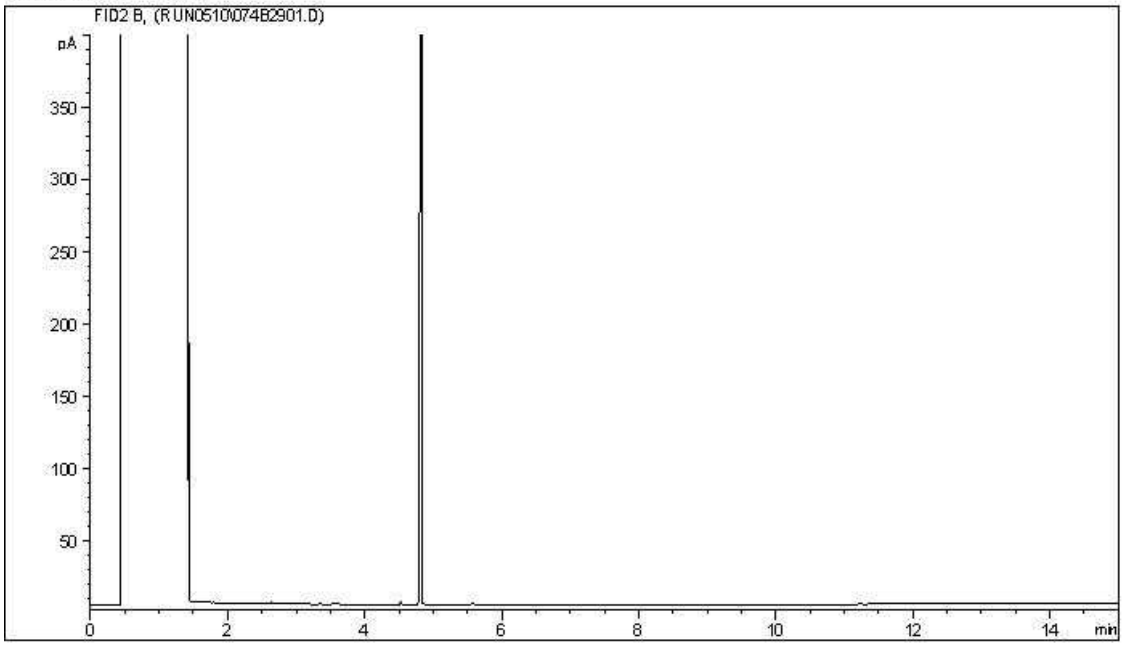
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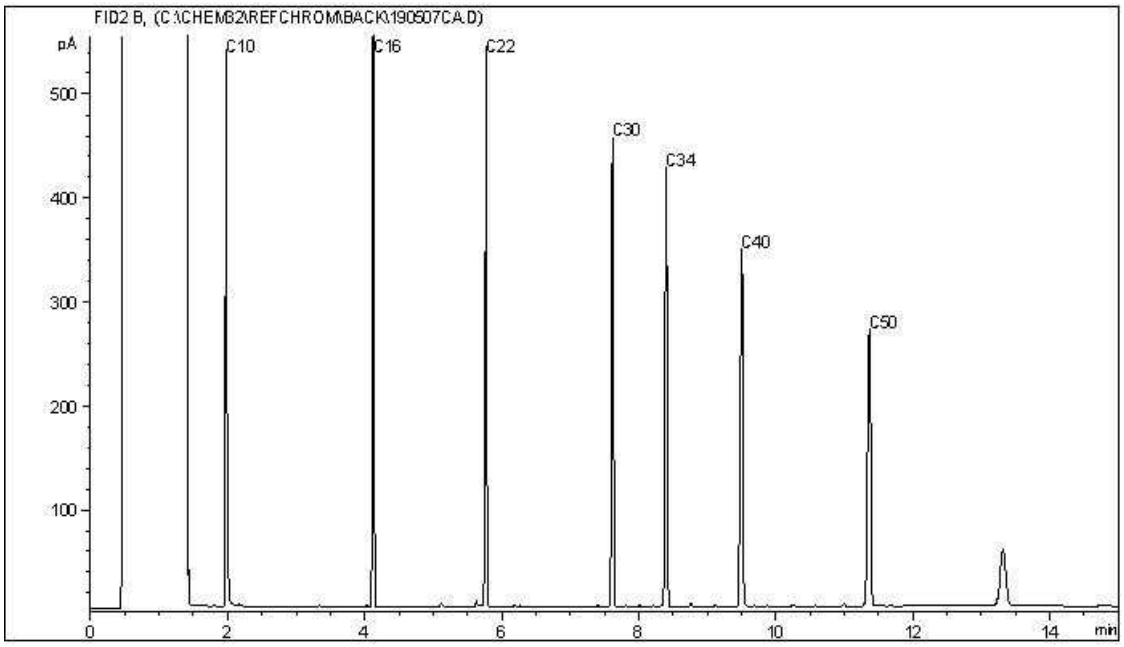
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



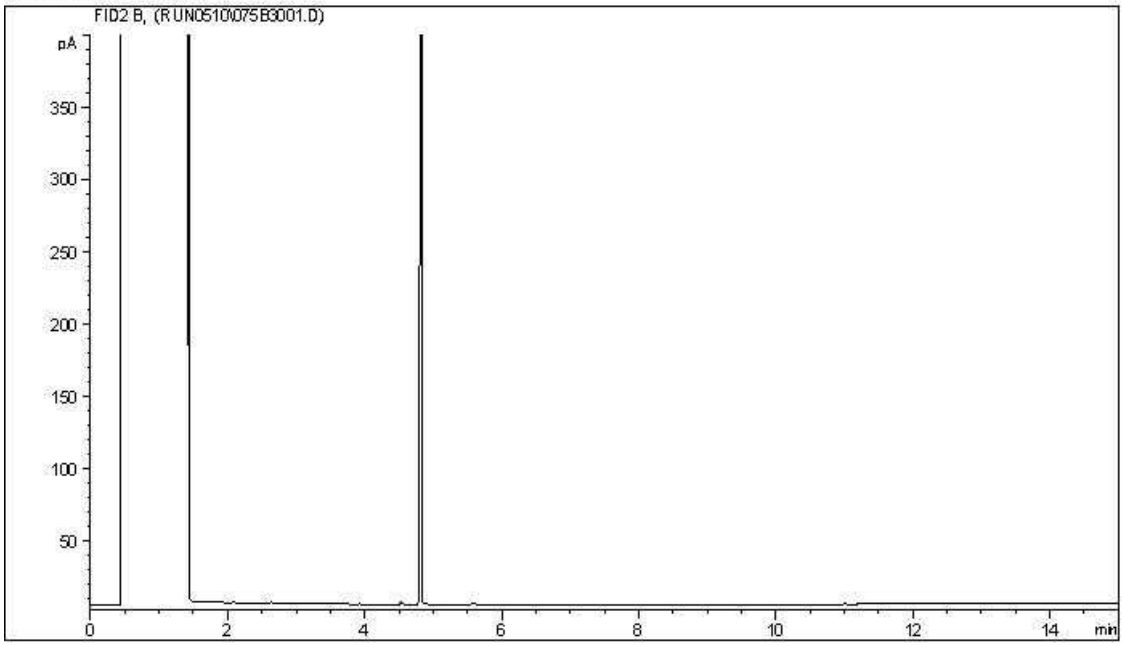
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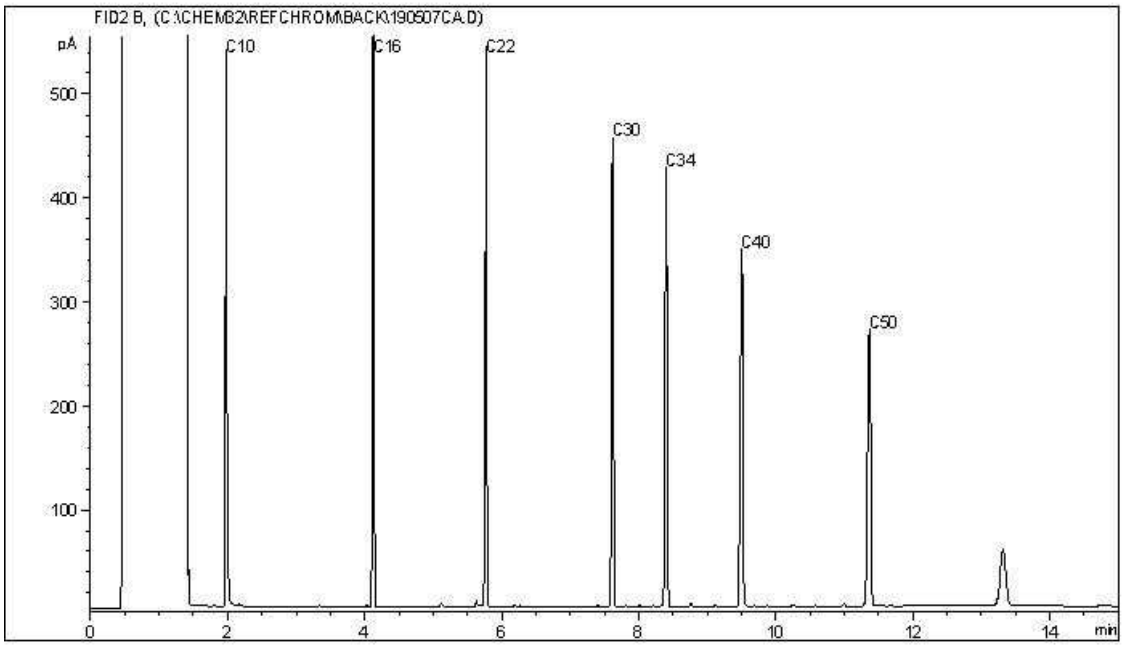
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CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

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Carbon Range Distribution - Reference Chromatogram



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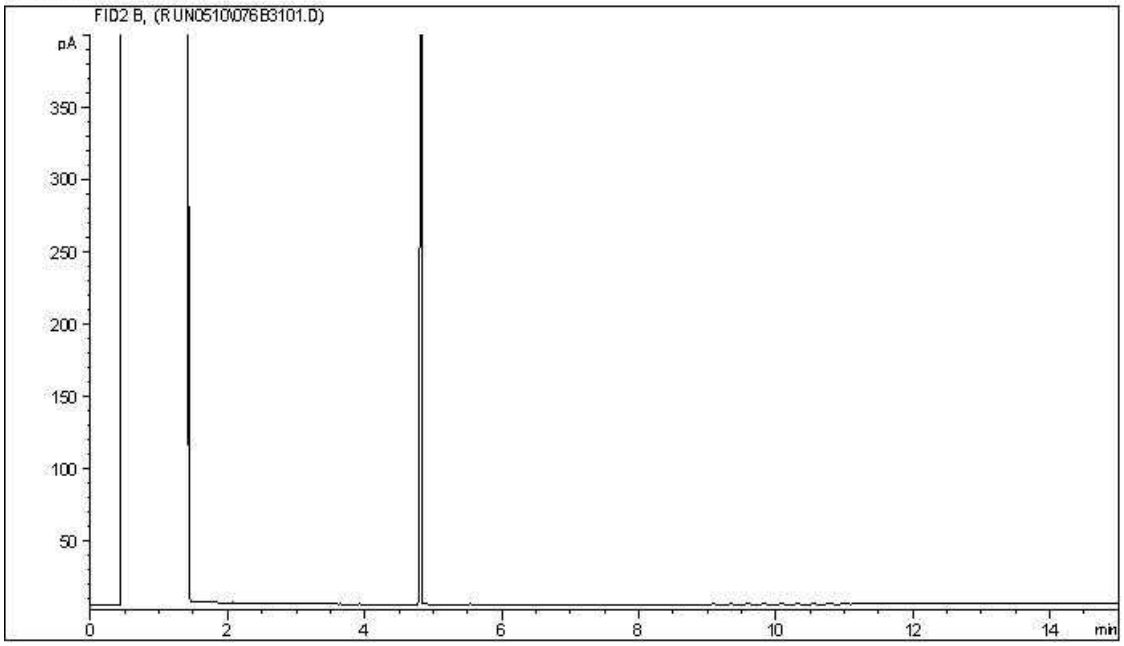
Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Maxxam Job #: B934265
Report Date: 2019/05/31
Maxxam Sample: VQ3863

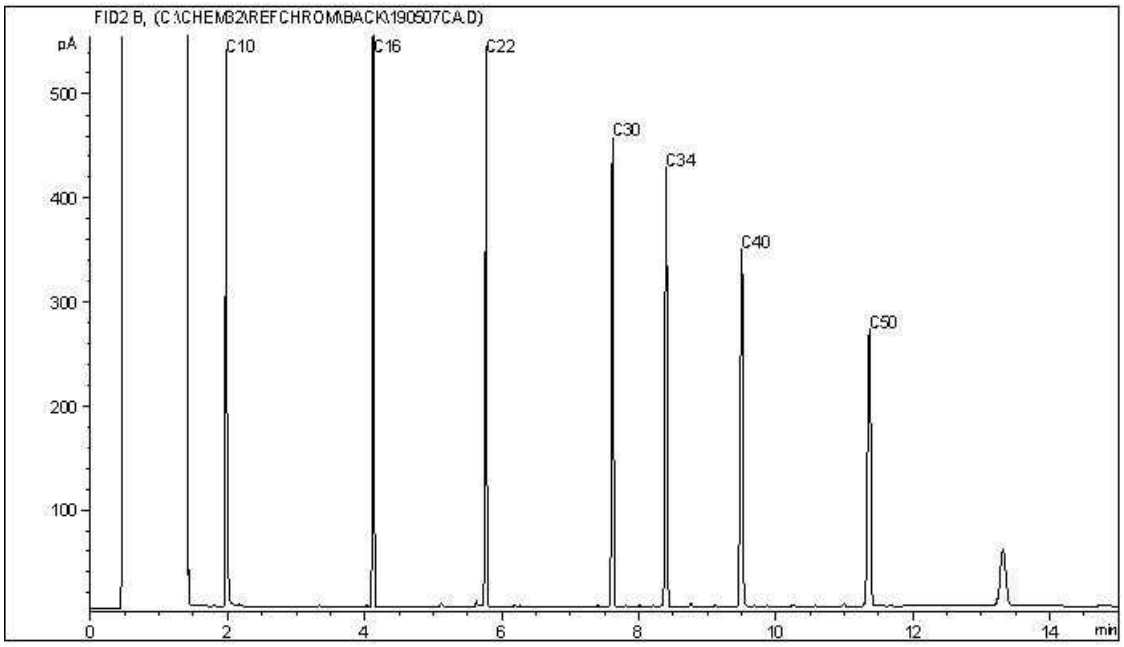
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Client ID: 195

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



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Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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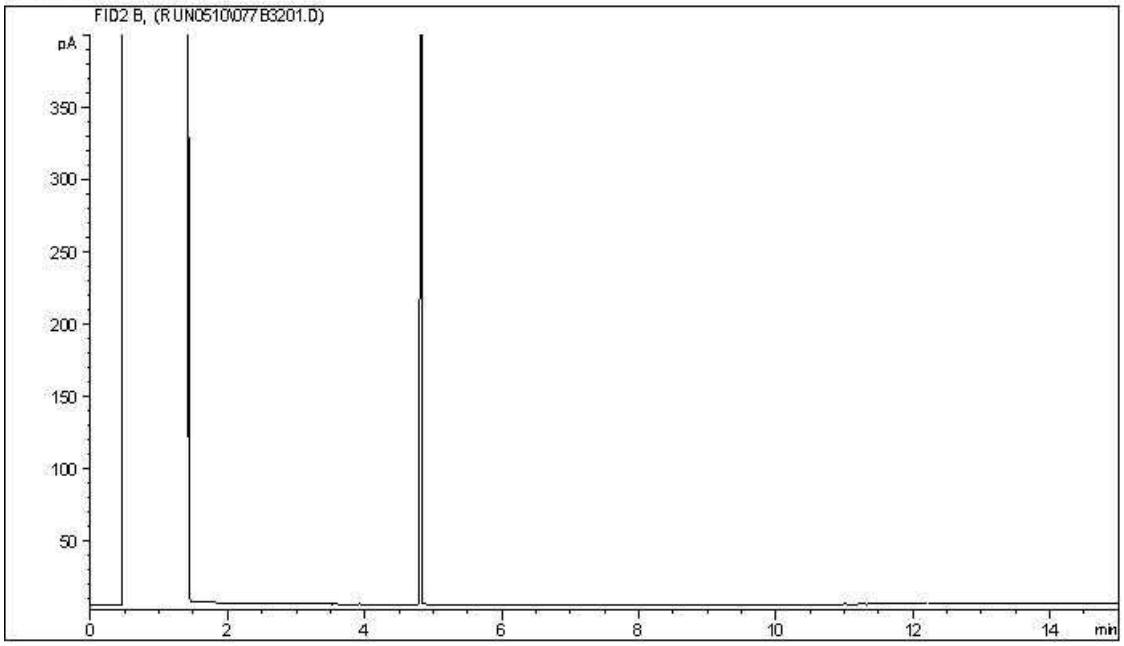
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Maxxam Job #: B934265
Report Date: 2019/05/31
Maxxam Sample: VQ3864

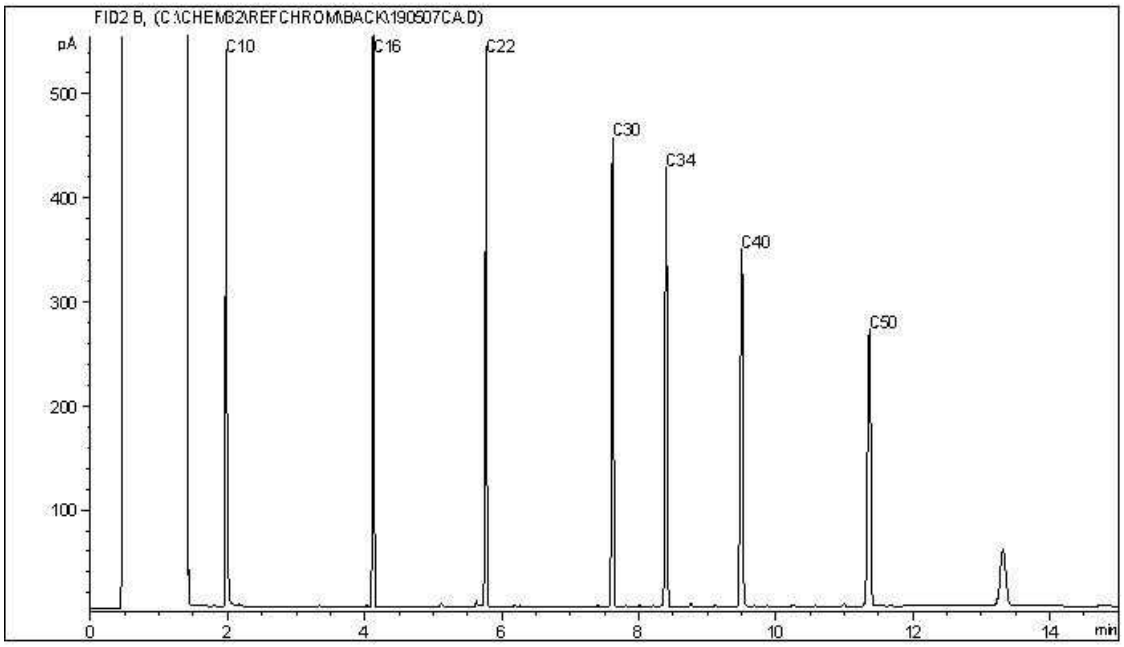
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Client ID: MW9

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
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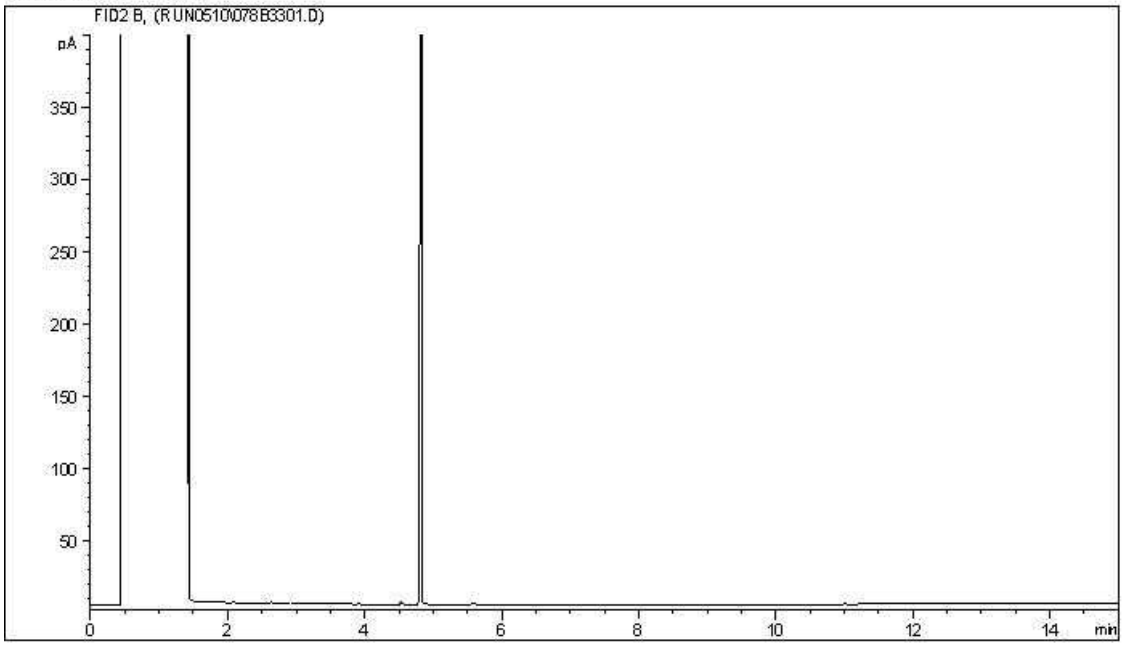
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Maxxam Job #: B934265
Report Date: 2019/05/31
Maxxam Sample: VQ3865

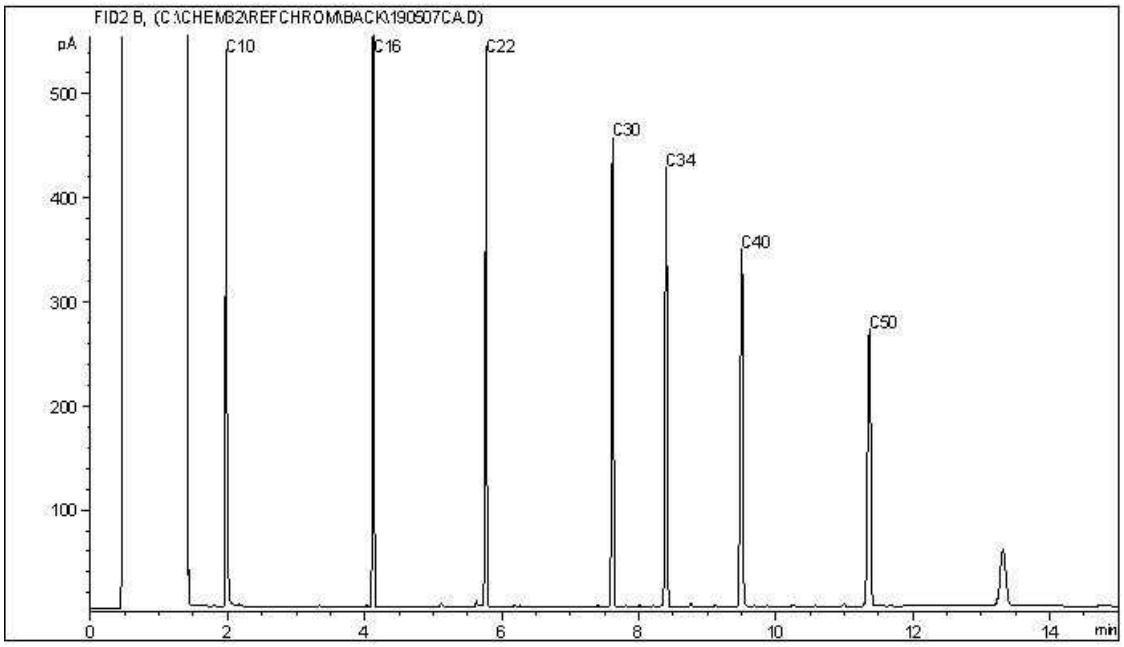
CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Client ID: 191

CCME Hydrocarbons in Water (F2; C10-C16) Chromatogram

Instrument: GC12



Carbon Range Distribution - Reference Chromatogram



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Your Project #: CG3198
Your C.O.C. #: 584170-01-01

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/17
Report #: R2724446
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B937477
Received: 2019/05/17, 10:20

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Trihalomethanes Calculation	1	N/A	2019/05/17		Auto Calc
VOCs in Water by HS GC/MS (Std List)	1	N/A	2019/05/17	AB SOP-00056	EPA 5021a/8260d m

Remarks:

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.
This Certificate shall not be reproduced except in full, without the written approval of the laboratory.
Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your Project #: CG3198
Your C.O.C. #: 584170-01-01

Attention: TERRYN KUZYK

CLIFTON ASSOCIATES LTD.
2222 30TH AVENUE NE
CALGARY, AB
CANADA T2E 7K9

Report Date: 2019/05/17
Report #: R2724446
Version: 1 - Final

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B937477
Received: 2019/05/17, 10:20

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Linsay Sunderman, Key Account Specialist
Email: LSunderman@maxxam.ca
Phone# (403)735-2237 Ext:2237
==========
This report has been generated and distributed using a secure automated process.
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B937477
Report Date: 2019/05/17

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AUS

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VR8926		
Sampling Date		2019/05/17 09:15		
COC Number		584170-01-01		
	UNITS	192	RDL	QC Batch
Volatiles				
Total Trihalomethanes	mg/L	<0.0013	0.0013	9422195
Benzene	mg/L	<0.00040	0.00040	9422395
Bromodichloromethane	mg/L	<0.00050	0.00050	9422395
Bromoform	mg/L	<0.00050	0.00050	9422395
Bromomethane	mg/L	<0.0020	0.0020	9422395
Carbon tetrachloride	mg/L	<0.00050	0.00050	9422395
Chlorobenzene	mg/L	<0.00050	0.00050	9422395
Chlorodibromomethane	mg/L	<0.0010	0.0010	9422395
Chloroethane	mg/L	<0.0010	0.0010	9422395
Chloroform	mg/L	<0.00050	0.00050	9422395
Chloromethane	mg/L	<0.0020	0.0020	9422395
1,2-dibromoethane	mg/L	<0.00020	0.00020	9422395
1,2-dichlorobenzene	mg/L	<0.00050	0.00050	9422395
1,3-dichlorobenzene	mg/L	<0.00050	0.00050	9422395
1,4-dichlorobenzene	mg/L	<0.00050	0.00050	9422395
1,1-dichloroethane	mg/L	<0.00050	0.00050	9422395
1,2-dichloroethane	mg/L	<0.00050	0.00050	9422395
1,1-dichloroethene	mg/L	<0.00050	0.00050	9422395
cis-1,2-dichloroethene	mg/L	<0.00050	0.00050	9422395
trans-1,2-dichloroethene	mg/L	<0.00050	0.00050	9422395
Dichloromethane	mg/L	<0.0020	0.0020	9422395
1,2-dichloropropane	mg/L	<0.00050	0.00050	9422395
cis-1,3-dichloropropene	mg/L	<0.00050	0.00050	9422395
trans-1,3-dichloropropene	mg/L	<0.00050	0.00050	9422395
Ethylbenzene	mg/L	<0.00040	0.00040	9422395
Methyl methacrylate	mg/L	<0.00050	0.00050	9422395
Methyl-tert-butylether (MTBE)	mg/L	<0.00050	0.00050	9422395
Styrene	mg/L	<0.00050	0.00050	9422395
1,1,1,2-tetrachloroethane	mg/L	<0.0010	0.0010	9422395
1,1,2,2-tetrachloroethane	mg/L	<0.0020	0.0020	9422395
Tetrachloroethene	mg/L	0.0012	0.00050	9422395
Toluene	mg/L	<0.00040	0.00040	9422395
RDL = Reportable Detection Limit				

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Maxxam Job #: B937477
Report Date: 2019/05/17

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AUS

VOLATILE ORGANICS BY GC-MS (WATER)

Maxxam ID		VR8926		
Sampling Date		2019/05/17 09:15		
COC Number		584170-01-01		
	UNITS	192	RDL	QC Batch
1,2,3-trichlorobenzene	mg/L	<0.0010	0.0010	9422395
1,2,4-trichlorobenzene	mg/L	<0.0010	0.0010	9422395
1,3,5-trichlorobenzene	mg/L	<0.00050	0.00050	9422395
1,1,1-trichloroethane	mg/L	<0.00050	0.00050	9422395
1,1,2-trichloroethane	mg/L	<0.00050	0.00050	9422395
Trichloroethene	mg/L	<0.00050	0.00050	9422395
Trichlorofluoromethane	mg/L	<0.00050	0.00050	9422395
1,2,4-trimethylbenzene	mg/L	<0.00050	0.00050	9422395
1,3,5-trimethylbenzene	mg/L	<0.00050	0.00050	9422395
Vinyl chloride	mg/L	<0.00050	0.00050	9422395
Xylenes (Total)	mg/L	<0.00080	0.00080	9422395
m & p-Xylene	mg/L	<0.00080	0.00080	9422395
o-Xylene	mg/L	<0.00040	0.00040	9422395
Surrogate Recovery (%)				
1,4-Difluorobenzene (sur.)	%	102	N/A	9422395
4-Bromofluorobenzene (sur.)	%	92	N/A	9422395
D4-1,2-Dichloroethane (sur.)	%	101	N/A	9422395

RDL = Reportable Detection Limit
N/A = Not Applicable

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Maxxam Job #: B937477
Report Date: 2019/05/17

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AUS

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	2.0°C

Results relate only to the items tested.

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QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
9422395	QW1	Matrix Spike [VR8926-01]	1,4-Difluorobenzene (sur.)	2019/05/17		106	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/17		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/17		115	%	50 - 140
			Benzene	2019/05/17		89	%	50 - 140
			Bromodichloromethane	2019/05/17		101	%	50 - 140
			Bromoform	2019/05/17		113	%	50 - 140
			Bromomethane	2019/05/17		103	%	50 - 140
			Carbon tetrachloride	2019/05/17		96	%	50 - 140
			Chlorobenzene	2019/05/17		102	%	50 - 140
			Chlorodibromomethane	2019/05/17		112	%	50 - 140
			Chloroethane	2019/05/17		90	%	50 - 140
			Chloroform	2019/05/17		91	%	50 - 140
			Chloromethane	2019/05/17		104	%	50 - 140
			1,2-dibromoethane	2019/05/17		104	%	50 - 140
			1,2-dichlorobenzene	2019/05/17		99	%	50 - 140
			1,3-dichlorobenzene	2019/05/17		94	%	50 - 140
			1,4-dichlorobenzene	2019/05/17		96	%	50 - 140
			1,1-dichloroethane	2019/05/17		90	%	50 - 140
			1,2-dichloroethane	2019/05/17		96	%	50 - 140
			1,1-dichloroethene	2019/05/17		93	%	50 - 140
			cis-1,2-dichloroethene	2019/05/17		97	%	50 - 140
			trans-1,2-dichloroethene	2019/05/17		90	%	50 - 140
			Dichloromethane	2019/05/17		92	%	50 - 140
			1,2-dichloropropane	2019/05/17		98	%	50 - 140
			cis-1,3-dichloropropene	2019/05/17		118	%	50 - 140
			trans-1,3-dichloropropene	2019/05/17		127	%	50 - 140
			Ethylbenzene	2019/05/17		96	%	50 - 140
			Methyl methacrylate	2019/05/17		105	%	50 - 140
			Methyl-tert-butylether (MTBE)	2019/05/17		95	%	50 - 140
			Styrene	2019/05/17		105	%	50 - 140
			1,1,1,2-tetrachloroethane	2019/05/17		103	%	50 - 140
			1,1,2,2-tetrachloroethane	2019/05/17		107	%	50 - 140
			Tetrachloroethene	2019/05/17		98	%	50 - 140
			Toluene	2019/05/17		96	%	50 - 140
			1,2,3-trichlorobenzene	2019/05/17		97	%	50 - 140
			1,2,4-trichlorobenzene	2019/05/17		95	%	50 - 140
			1,3,5-trichlorobenzene	2019/05/17		92	%	50 - 140
			1,1,1-trichloroethane	2019/05/17		97	%	50 - 140
			1,1,2-trichloroethane	2019/05/17		104	%	50 - 140
			Trichloroethene	2019/05/17		104	%	50 - 140
			Trichlorofluoromethane	2019/05/17		91	%	50 - 140
			1,2,4-trimethylbenzene	2019/05/17		91	%	50 - 140
			1,3,5-trimethylbenzene	2019/05/17		94	%	50 - 140
			Vinyl chloride	2019/05/17		92	%	50 - 140
			m & p-Xylene	2019/05/17		95	%	50 - 140
			o-Xylene	2019/05/17		94	%	50 - 140
9422395	QW1	Spiked Blank	1,4-Difluorobenzene (sur.)	2019/05/17		105	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/17		98	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/17		108	%	50 - 140
			Benzene	2019/05/17		88	%	60 - 130
			Bromodichloromethane	2019/05/17		99	%	60 - 130
			Bromoform	2019/05/17		109	%	60 - 130
			Bromomethane	2019/05/17		101	%	60 - 130
			Carbon tetrachloride	2019/05/17		99	%	60 - 130

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Chlorobenzene	2019/05/17		101	%	60 - 130
			Chlorodibromomethane	2019/05/17		110	%	60 - 130
			Chloroethane	2019/05/17		91	%	60 - 130
			Chloroform	2019/05/17		89	%	60 - 130
			Chloromethane	2019/05/17		108	%	60 - 130
			1,2-dibromoethane	2019/05/17		99	%	60 - 130
			1,2-dichlorobenzene	2019/05/17		98	%	60 - 130
			1,3-dichlorobenzene	2019/05/17		96	%	60 - 130
			1,4-dichlorobenzene	2019/05/17		96	%	60 - 130
			1,1-dichloroethane	2019/05/17		90	%	60 - 130
			1,2-dichloroethane	2019/05/17		92	%	60 - 130
			1,1-dichloroethene	2019/05/17		96	%	60 - 130
			cis-1,2-dichloroethene	2019/05/17		96	%	60 - 130
			trans-1,2-dichloroethene	2019/05/17		91	%	60 - 130
			Dichloromethane	2019/05/17		90	%	60 - 130
			1,2-dichloropropane	2019/05/17		94	%	60 - 130
			cis-1,3-dichloropropene	2019/05/17		113	%	60 - 130
			trans-1,3-dichloropropene	2019/05/17		117	%	60 - 130
			Ethylbenzene	2019/05/17		97	%	60 - 130
			Methyl methacrylate	2019/05/17		98	%	60 - 130
			Methyl-tert-butylether (MTBE)	2019/05/17		93	%	60 - 130
			Styrene	2019/05/17		106	%	60 - 130
			1,1,1,2-tetrachloroethane	2019/05/17		102	%	60 - 130
			1,1,2,2-tetrachloroethane	2019/05/17		101	%	60 - 130
			Tetrachloroethene	2019/05/17		100	%	60 - 130
			Toluene	2019/05/17		96	%	60 - 130
			1,2,3-trichlorobenzene	2019/05/17		90	%	60 - 130
			1,2,4-trichlorobenzene	2019/05/17		91	%	60 - 130
			1,3,5-trichlorobenzene	2019/05/17		92	%	60 - 130
			1,1,1-trichloroethane	2019/05/17		99	%	60 - 130
			1,1,2-trichloroethane	2019/05/17		98	%	60 - 130
			Trichloroethene	2019/05/17		106	%	60 - 130
			Trichlorofluoromethane	2019/05/17		93	%	60 - 130
			1,2,4-trimethylbenzene	2019/05/17		94	%	60 - 130
			1,3,5-trimethylbenzene	2019/05/17		97	%	60 - 130
			Vinyl chloride	2019/05/17		94	%	60 - 130
			m & p-Xylene	2019/05/17		95	%	60 - 130
			o-Xylene	2019/05/17		93	%	60 - 130
9422395	QW1	Method Blank	1,4-Difluorobenzene (sur.)	2019/05/17		101	%	50 - 140
			4-Bromofluorobenzene (sur.)	2019/05/17		90	%	50 - 140
			D4-1,2-Dichloroethane (sur.)	2019/05/17		97	%	50 - 140
			Benzene	2019/05/17	<0.00040		mg/L	
			Bromodichloromethane	2019/05/17	<0.00050		mg/L	
			Bromoform	2019/05/17	<0.00050		mg/L	
			Bromomethane	2019/05/17	<0.0020		mg/L	
			Carbon tetrachloride	2019/05/17	<0.00050		mg/L	
			Chlorobenzene	2019/05/17	<0.00050		mg/L	
			Chlorodibromomethane	2019/05/17	<0.0010		mg/L	
			Chloroethane	2019/05/17	<0.0010		mg/L	
			Chloroform	2019/05/17	<0.00050		mg/L	
			Chloromethane	2019/05/17	<0.0020		mg/L	
			1,2-dibromoethane	2019/05/17	<0.00020		mg/L	
			1,2-dichlorobenzene	2019/05/17	<0.00050		mg/L	
			1,3-dichlorobenzene	2019/05/17	<0.00050		mg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			1,4-dichlorobenzene	2019/05/17	<0.00050		mg/L	
			1,1-dichloroethane	2019/05/17	<0.00050		mg/L	
			1,2-dichloroethane	2019/05/17	<0.00050		mg/L	
			1,1-dichloroethene	2019/05/17	<0.00050		mg/L	
			cis-1,2-dichloroethene	2019/05/17	<0.00050		mg/L	
			trans-1,2-dichloroethene	2019/05/17	<0.00050		mg/L	
			Dichloromethane	2019/05/17	<0.0020		mg/L	
			1,2-dichloropropane	2019/05/17	<0.00050		mg/L	
			cis-1,3-dichloropropene	2019/05/17	<0.00050		mg/L	
			trans-1,3-dichloropropene	2019/05/17	<0.00050		mg/L	
			Ethylbenzene	2019/05/17	<0.00040		mg/L	
			Methyl methacrylate	2019/05/17	<0.00050		mg/L	
			Methyl-tert-butylether (MTBE)	2019/05/17	<0.00050		mg/L	
			Styrene	2019/05/17	<0.00050		mg/L	
			1,1,1,2-tetrachloroethane	2019/05/17	<0.0010		mg/L	
			1,1,2,2-tetrachloroethane	2019/05/17	<0.0020		mg/L	
			Tetrachloroethene	2019/05/17	<0.00050		mg/L	
			Toluene	2019/05/17	<0.00040		mg/L	
			1,2,3-trichlorobenzene	2019/05/17	<0.0010		mg/L	
			1,2,4-trichlorobenzene	2019/05/17	<0.0010		mg/L	
			1,3,5-trichlorobenzene	2019/05/17	<0.00050		mg/L	
			1,1,1-trichloroethane	2019/05/17	<0.00050		mg/L	
			1,1,2-trichloroethane	2019/05/17	<0.00050		mg/L	
			Trichloroethene	2019/05/17	<0.00050		mg/L	
			Trichlorofluoromethane	2019/05/17	<0.00050		mg/L	
			1,2,4-trimethylbenzene	2019/05/17	<0.00050		mg/L	
			1,3,5-trimethylbenzene	2019/05/17	<0.00050		mg/L	
			Vinyl chloride	2019/05/17	<0.00050		mg/L	
			Xylenes (Total)	2019/05/17	<0.00080		mg/L	
			m & p-Xylene	2019/05/17	<0.00080		mg/L	
			o-Xylene	2019/05/17	<0.00040		mg/L	
9422395	QW1	RPD	Benzene	2019/05/17	NC		%	30
			Chloroform	2019/05/17	2.4		%	30
			1,2-dichlorobenzene	2019/05/17	NC		%	30
			1,4-dichlorobenzene	2019/05/17	NC		%	30
			Dichloromethane	2019/05/17	1.8		%	30
			Ethylbenzene	2019/05/17	NC		%	30
			1,1,2,2-tetrachloroethane	2019/05/17	NC		%	30
			Tetrachloroethene	2019/05/17	0.30		%	30
			Toluene	2019/05/17	NC		%	30
			Trichloroethene	2019/05/17	0		%	30
			Xylenes (Total)	2019/05/17	NC		%	30
			m & p-Xylene	2019/05/17	NC		%	30
			o-Xylene	2019/05/17	NC		%	30

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

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NOTIFICATION LOG

No Reportable Regulation Exceedences Noted.

Maxxam Analytics International Corporation o/a Maxxam Analytics Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Maxxam Job #: B937477
Report Date: 2019/05/17

CLIFTON ASSOCIATES LTD.
Client Project #: CG3198
Sampler Initials: AUS

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Janet Gao, B.Sc., QP, Supervisor, Organics

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Analytics International Corporation o/a Maxxam Analytics
4000 19st N E, Calgary, Alberta Canada T2E 6P8 Tel:(403) 291-3077 Toll-free:800-563-6266 Fax:(403) 291-9468 www.maxxam.ca

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CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#4090 CLIFTON ASSOCIATES LTD.	Company Name:		Quotation #:		Maxxam Job #:	Bottle Order #:
Attention:	TERRYN KUZYK	Attention:		P.O. #:			584170
Address:	2222 30TH AVENUE NE CALGARY AB T2E 7K9	Address:		Project:	CG3198	COC #:	Project Manager:
Tel:	(403) 263-2556 Fax: (403) 234-9033	Tel:	Fax:	Project Name:		C#584170-01-01	Linsay Sunderman
Email:	terryn_kuzyk@clifton.ca	Email:		Site #:			
				Sampled By:	Austin		

Regulatory Criteria:
- [x] ATI
- [ ] CCME
- [ ] Other

Special Instructions:

SAMPLES MUST BE KEPT COOL (< 10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO MAXXAM

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:

Please provide advance notice for rush projects

Regular (Standard) TAT: [ ]
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests are > 5 days - contact your Project Manager for details

Job Specific Rush TAT (if applies to entire submission) [x]
Date Required: 2019.5.18
Rush Confirmation Number: *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Metals Field Filtered ? (Y / N)	VOCs in Water by HS GC/MS (Std List)	# of Bottles	Comments
1		192	2019.5.17	9:15	W		✓	3	
2									
3									
4									
5									
6									
7									
8									
9									
10									

17-May-19 10:20
Linsay Sunderman
B937477
SBZ INS-0232

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted	Laboratory Use Only: Time Sensitive	Temperature (°C) on Receipt	Custody Seal Intact on Cooler?
Austin Mei	2019.5.17	10:19	Jordan Bruh	2019/05/17	10:20		☐	3, 1, 2	☐ Yes ☑ No

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO MAXXAM'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.MAXXAM.CA/TERMS.
* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.
** ALL SAMPLES ARE HELD FOR 60 DAYS AFTER SAMPLE RECEIPT, FOR SPECIAL REQUESTS CONTACT YOUR PROJECT MANAGER

White: Maxxam Yellow: Client

ice-y

Appendix L
Borehole Logs

Clifton

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH101

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	17 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0.5		TOPSOIL: 50 mm.		101-1	9			60/0	SAND
0.5 – 1.5		FILL: Fine Sand, silt, some to trace clay, trace fine gravel, brown, moist, mottled with topsoil.		101-2				0/2	
1.5 – 2.5		ORGANIC SOIL: Fine sand, silt, trace coarse sand, trace clay, black, mild to strong organic odour, occasional fine rootlets.		101-3*				0/1	BENTONITE
2.5 – 3.0		SAND: Fine, some to trace silt, dark brown to greyish-brown, moist, compact.		101-4	11			0/1	SAND
3.0 – 4.0		SILT: Sandy (fine), some clay, light olive brown, brownish-grey, moist, loose to compact, occasional fine rootlets.		101-5*				0/0	SCREEN 50 MM
4.0 – 6.1		TILL: Clay, silt, sandy (fine), trace gravel, dark brown, hard, low plastic, mottled with light grey fine sand.		101-6				0/0	
		-At 4.6 m, occasional coal specks and iron staining.		101-7				0/0	CUTTINGS
				101-8				0/0	
6.1		End of Hole @ 6.1 m							

* Sample submitted for laboratory analysis

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH102

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	17 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0.1		ASPHALT: 75 mm.							SAND
0.1 – 0.6		FILL: Gravel (Coarse), sandy, trace silt, moist, compact.		102-1*	12			0/1	
0.6 – 2.8		ORGANIC SOIL: Silt, some sand, trace gravel, black to grey, moist, soft to firm. -At 2.4 m, some sand, grey, occasional rootlets, increased medium to coarse sand content.		102-2 102-3	14			0/0 0/0	BENTONITE
2.8 – 5.9		SAND: Medium grained, grey, moist, compact, occasional coal specks. -At 3.0 m, wet. -At 3.3 m, light grey to olive brown, occasional iron staining. -At 4.9 m, trace fine gravel. -At 5.2 m, decrease in moisture content.		102-4* 102-5 102-6 102-7 102-8	3			0/0 0/0 0/0 0/0 0/0	SAND SCREEN 50 MM
5.9		End of Hole @ 5.9 m * Sample submitted for laboratory analysis							

0 1 2 3 4 5 6 7 8 9 10 (m)

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH103

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	17 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0		ASPHALT: 65 mm.							SAND
		FILL: Gravel and sand.		103-1*				210/3	
-1 – 1		ORGANIC SOIL: Fine sand, some silt, some clay, black, mottled with dark brown fines, moist, occasional fine rootlets and wood chips.		103-2	13			135/1	BENTONITE
-2 – 2		-At 1.9 m, clay seam (75 mm), silty, some fine sand.		103-3				105/0	
				103-4				145/0	
-3 – 3		SAND: Trace silt and clay, greyish-brown, moist, moist, compact, occasional fine rootlets.			16				SAND
		-At 3.4 m, wet.		103-5*				25/0	
-4 – 4		-At 4.3 m, brown, mottled with grey fine sand.		103-6				135/0	SCREEN 50 MM
-5 – 5		TILL: Clay, silty, some fine sand, trace fine gravel, brown, moist, stiff to very stiff, low plastic, mottled with grey fine sand and silt, occasional coal specks, occasional fine sand lenses (10-15 mm).		103-7	8			170/0	
				103-8				155/0	CUTTINGS
-6 – 6					9				
-7 – 7		End of Hole @ 6.6 m							
		* Sample submitted for laboratory analysis							
-8 – 8									
-9 – 9									
-10 – 10									

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH104

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	17 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 / 0		ASPHALT: 65 mm.							SAND
		FILL: Gravel, sand, some silt. dark brown, moist, compact.		104-1				0/0	
-1 / 1				104-2				25/0	
		ORGANIC SOIL: AND SAND (fine), some clay, trace gravel, dark brown to black, unoxidized, moist, mottled with grey fine sand.		104-3*				160/0	BENTONITE
-2 / 2									
				104-4				85/0	
-3 / 3									SAND
				104-5				60/0	
									SCREEN 50 MM
-4 / 4		TILL: Clay, silty, some fine sand to sandy, dark brown to brown, moist, very stiff to hard, low plastic, occasional coal specks and coal inclusions, occasional medium to coarse sand.		104-6				135/1	
				104-7*				310/0	
-5 / 5									
				104-8				200/0	CUTTINGS
-6 / 6									
		End of Hole @ 6.6 m							
-7 / 7		* Sample submitted for laboratory analysis							
-8 / 8									
-9 / 9									
-10 / 10									

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH105

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	22 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0		ASPHALT: 75 mm.							SAND
		FILL: Coarse gravel, sandy, trace silt, brown, moist, compact.		105-1				120/1	
-1 – 1		ORGANIC SOIL: clay, some silt, black, moist. -At 1.0 m, fine to medium sand, grey to greyish-black, moist, compact.		105-2				5/0	
-2 – 2				105-3				70/0	
		TILL: Silty clay, trace gravel, brown to grey, medium to coarse sand, moist, stiff to very stiff, occasional coal specks and iron staining.		105-4				210/1	BENTONITE
-3 – 3				105-5*				360/1	
-4 – 4				105-6				75/0	
-5 – 5				105-7				25/0	
		-At 5.5 m, sand lens (150 mm).		105-8				20/0	
-6 – 6		-At 6.1 m, sand seam (0.6 m), occasional iron staining.		105-9*				2150/0	
-7 – 7		-At 7.0 m, dark olive brown.		105-10				110/1	SAND SCREEN
		-At 7.9 m, trace coarse gravel.		105-11				670/1	
-8 – 8				105-12				10/0	
-9 – 9									SLOUGH
-10 – 10		End of Hole @ 9.6 m							
		* Sample submitted for laboratory analysis							
-11 – 11									

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH106

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	17 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0		ASPHALT: 65 mm.							SAND
		FILL: Gravel and sand, trace to some silt and clay, dark brown, oxidized, moist, compact.		106-1				155/0	BENTONITE
-1 – 1				106-2*				130/4	
		ORGANIC SOIL: Frequent rootlets, occasional dried leaves and grass, black.							SAND
-2 – 2		-At 1.9 m, Fine sand, some silt, dark brown to black, trace gravel, frequent organics.		106-3				115/1	SCREEN 50 MM
				106-4				10/0	
-3 – 3		TILL: Clay, silt, some fine sand, trace fine gravel, olive brown, moist, stiff to very stiff, low plastic.							
				106-5*				115/0	
-4 – 4				106-6				50/0	
		-At 4.4 m, fine sand seam (75 mm).							CUTTINGS
-5 – 5				106-7				25/0	
		-At 5.3 m, occasional coal specks.							
-6 – 6				106-8				55/0	
				106-9				10/0	
-7 – 7		End of Hole @ 6.7 m							
		* Sample submitted for laboratory analysis							
-8 – 8									
-9 – 9									
-10 – 10									

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH107

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	17 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0		ASPHALT: 65 mm.		107-1				110/1	SAND
		FILL: Gravel and sand, trace to some silt, trace clay, dark brown to olive brown, moist, compact, poorly graded.		107-2 - no sample					
-1									BENTONITE
-2		ORGANIC SOIL: Fine sand, silty, trace clay, trace gravel, dark brown to black, moist, occasional wood chips, motttled with greenish-grey fines.		107-3*				410/2	
				107-4				85/0	
-3									
		SAND: Fine sand, silty, some clay, grey, moist, mottled with dark brown fine sand.		107-5*				280/0	SAND SCREEN 50 MM
-4				107-6				185/0	
		TILL: Clay, silty, sandy (fine to medium), trace fine gravel, olive brown, moist, stiff to hard, low plastic, occasional coal specks, occasional silt and clay lenses.							
-5		-At 5.3 m, some fine to medium sand.		107-7				175/0	
				107-8				160/0	CUTTINGS
-6									
		End of Hole @ 6.6 m							
-7		* Sample submitted for laboratory analysis							
-8									
-9									
-10									

Env BH m elev CAL v09.idf

BOREHOLE LOG

Borehole: BH108

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	22 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0.2		TOPSOIL: 200 mm.							
0.2 – 1.5		FILL: Sand, silty, trace gravel, dark olive brown to brown, moist, occasional rootlets.		108-1				20/0	
				108-2*				5/0	BENTONITE
1.5 – 4.3		TILL: Clay, silty, some sand, light olive brown, moist, firm to very stiff, occasional coal specks and iron staining.		108-3				0/0	
		-At 2.1 m, trace gravel, occasional sand lenses.		108-4				0/0	
				108-5*				80/0	SAND
4.3 – 6.1		TILL: Sand, some silt, trace clay, brown, moist, compact to dense, occasional coal specks and iron staining.		108-6				0/0	
				108-7				0/0	SCREEN 50 MM
		-At 5.8 m, coarse gravel and coarse sand seam (75 mm).		108-8				0/0	
6.1		End of Hole @ 6.1 m							

* Sample submitted for laboratory analysis

Env BH m elev CAL v09.idf

BOREHOLE LOG

Borehole: BH109

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	22 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0		TOPSOIL: 150 mm.		109-1				0/0	BENTONITE
		FILL: Clay, silty, some fine gravel, dark olive brown, moist, occasional rootlets.							
-1 – 1		-At 1.0 m, silt, sandy, occasional coal specks, rootlets and wood chips.		109-2*				0/1	
		SAND: Some clay, trace silt, trace gravel, olive brown, moist, compact, occasional coal specks and iron staining.		109-3				0/0	
-2 – 2									
		TILL: Clay, silty, trace gravel, olive brown, oxidized, moist, stiff, low plastic.		109-4				0/0	
-3 – 3		-At 3.4 m, sandy, some silt to 4.4 m.		109-5*				0/0	SAND SCREEN 50 MM
		-At 4.4 m, dark olive brown, occasional coal specks, and sand lenses.		109-6				0/0	
-4 – 4									
-5 – 5				109-7				0/1	
				109-8				0/0	
-6 – 6		End of Hole @ 6.4 m							
		* Sample submitted for laboratory analysis							
-7 – 7									
-8 – 8									
-9 – 9									
-10 – 10									

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH110

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	22 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 / 0		TOPSOIL: 300 mm.							
		FILL: Silt, clayey, some sand, trace gravel, dark olive brown, moist.		110-1				20/0	
-1 / 1		-At 1.2 m, coarse gravel.		110-2*				35/14	BENTONITE
-2 / 2				110-3				10/18	
		SAND: Sand, brown, moist, loose to compact, occasional coal specks and iron staining.		110-4				0/1	
-3 / 3		TILL: Clay, silty, trace gravel, olive brown, oxidized, moist, stiff to very stiff, occasional coal specks, iron staining, and sand lenses.		110-5*				45/1	SAND
-4 / 4				110-6				20/1	SCREEN 50 MM
-5 / 5		-At 4.6 m, very stiff to hard.		110-7				0/1	
-6 / 6				110-8				0/1	
		End of Hole @ 6.1 m							
-7 / 7		* Sample submitted for laboratory analysis							
-8 / 8									
-9 / 9									
-10 / 10									

Env BH m elev CAL v09.tdf

BOREHOLE LOG

Borehole: BH111

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	22 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 / 0		TOPSOIL: 75 mm.							
		FILL: Silty sand, trace gravel, brown to black, moist, occasional rootlets.		111-1				0/1	
-1 / 1		-At 1.1 m, trace silt, olive brown.		111-2*				80/1	
		SAND: Some silt, trace gravel, olive brown, moist, occasional coal specks and iron staining.		111-3				50/0	BENTONITE
-2 / 2									
		TILL: Silty clay, trace to some gravel, olive brown, moist, low plastic, occasional sand lenses.		111-4				165/0	
-3 / 3		-At 3.0 m, stiff to very stiff.							
				111-5*				220/0	SAND
-4 / 4				111-6				35/0	
		-At 4.6 m, trace gravel.							SCREEN 50 MM
-5 / 5				111-7				85/0	
				111-8				20/1	
-6 / 6		End of Hole @ 6.1 m							
		* Sample submitted for laboratory analysis							
-7 / 7									
-8 / 8									
-9 / 9									
-10 / 10									

Env BH m elev CAL v09.idf

BOREHOLE LOG

Borehole: BH112

Page: 1 of 1

Client:	Town of Strathmore	Northing:		Date:	22 April 2019
Project:	New Town Hall Phase II ESA	Easting:		Driller:	Geoprobe 8040DT
Location:	Kinsmen Park, Strathmore, AB	Ground Elev.:		Method:	100 mm Casing
Project No.:	CG3198	Top Casing Elev.:		Logged by:	MSD

Elev (m) / Depth (m)	Symbol	Soil Description	Sample Type	Sample No.	SPT 'N'	USC	EC Reading dS/m (0 – 20)	Headspace Vapour ppm (10 – 100 – 1000 – 10000)	Monitor Well Construction Detail
0 – 0		TOPSOIL: 25 mm.							
		FILL: Gravel (coarse), sandy, some silt, trace clay, brown, moist, loose.		112-1				230/0	
-1 – 1				112-2*				240/0	BENTONITE
		-At 1.8 m, wet.		112-3				35/0	
-2 – 2		TILL: Clay, silty, trace gravel, olive brown, moist, stiff to very stiff, occasional coal specks and sand pockets, iron staining, low plastic.		112-4*				270/0	
-3 – 3				112-5				150/0	SAND
		-At 4.0 m, sand seam, medium to coarse, light brown, wet, occasional iron staining and coal specks.		112-6				180/0	SCREEN 50 MM
-4 – 4				112-7				35/0	
-5 – 5				112-8				215/0	CUTTINGS
-6 – 6		End of Hole @ 6.1 m							
		* Sample submitted for laboratory analysis							
-7 – 7									
-8 – 8									
-9 – 9									
-10 – 10									

Appendix M
Resumes

Clifton

Clifton

William R. Morgan PGeol

Senior Geologist

Education

BSc (Hons) Geology,
Dalhousie University, 1980

Specialty Training

Waste Management Certificate,
Mount Royal College, 1993

Professional Registrations and Affiliations

Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Professional Record

Clifton, Senior Geologist, 1993–Present

William R. Morgan Consulting, Principal, 1991–1993

Gardiner Oil & Gas Limited, Senior Exploration Geologist, 1987–1991

Pembina Resources Ltd., Senior Geologist, 1985–1987

Columbia Gas Development of Canada Ltd., Senior Geologist, 1985

Chevron Canada Resources Ltd., Project Geologist, 1980–1985

Key Project Experience

Environmental Site Assessment and Remediation

Canadian Pacific Railway, Multiple Railyards and Former Station Grounds — Alberta and British Columbia

Project Manager: *Planned, conducted, and provided project management for environmental investigations at a number of sites operated by a major railroad.*

Impacts addressed included petroleum hydrocarbons, metals, salts, and dissolved hydrocarbons including VOCs and solvents. Sites include large industrial facilities as well as a number of active and former rail yard facilities in throughout Alberta and British Columbia. The geotechnical investigation was performed as part of the due diligence process for the purchase of the property. Although the type of the development and the lot layout were still to be determined, it was understood that the development was likely going to be light manufacturing.

Canadian Pacific Railway, Alyth Yard — Calgary, AB

Project Manager: *Conducted environmental investigations and implemented remediation activities at a major active rail yard in response to a Protection Order.*

Activities included regulatory liaison, permitting, licensing, and the design and installation of free product-only recovery systems for the extraction of diesel and heavy fuels. Conducted field trials on a wide variety of recovery systems for various product types and recovery conditions. Utilized a number of different recovery systems in the final design. Over 620,000 litres of diesel and bunker oil were recovered.

Canadian Pacific Railway, Spill Response — Menaik, AB

Project Manager: *Spill response to a train derailment and potash spill.*

Investigated distressed crops at spill site and conducted the subsequent remediation. Remediation consisted of trenching and installation of intercepting drainage hose at the depth of maximum groundwater elevation to drain leached salts to a nearby watercourse. Provincial regulators required permitting and licensing of the remediation plan.

Sears Canada Ltd., North Hill Mall and Hounsfield Heights — Calgary, AB

Project Manager: *Assessment, characterization, and remediation planning to address petroleum hydrocarbon impacts originating from a former gasoline service station operated by a major retail commercial property owner. The impacts had spread beneath an adjacent residential community.*

Activities included a public forum and open house with ongoing communications to residents, subsurface investigation, soil vapour sampling, and multi-phase vacuum extraction testing.

TAZ Automotive — Airdrie, AB

Senior Reviewer: *Provided senior guidance and review for the assessment, characterization, and remediation of a former automotive salvage yard.*

The site was designated to be redeveloped into a high density, multi-family residential development. Investigation of the site found it to be impacted by heavy metal and mercury contamination. A program was developed and implemented to remove the impacted soil in thin lifts in order to minimize soil handling.

Alberta Transportation and Infrastructure — Southern Alberta

Senior Reviewer: *Provided senior guidance and review on a number of assessment and remediation projects for Alberta Transportation and Alberta Infrastructure including hydrocarbon and salt-impacted sites. Utilized EM surveys for delineation of salt impacts from sand "pickling" areas.*

Canadian Pacific Railway, Banff Station Grounds — Banff, AB

Project Manager: *Conducted a Phase I and a Phase II investigation and prepared a remediation plan at a former railway station ground within Banff National Park.*

Prior to conducting the subsurface investigation, and project-level assessment, as per CEAA was prepared. In addition, special provisions were required during borehole drilling to ensure protection of the vegetation.

Canadian Pacific Railway, Industrial Yard — Calgary, AB

Project Manager: *Investigation of a rail yard and freight transfer facility in a major downtown centre, prior to the decommissioning of the facility for site redevelopment.*

Concerns included the presence of a former bunker oil fuelling facility, a former coaling facility and the large volume of cinders at the site. Investigation of remedial options included a study of the environmental fate of PAHs and metals within the cinders, the geotechnical properties of the cinders as engineered fill, and a study of the thermal capacity of the cinders as they contained a high percentage of fine coal and coal dust.

Canadian Pacific Railway, South Edmonton Yard — Edmonton, AB

Project Manager: *Designed and operated a liquid hydrocarbon-only recovery system at an active rail yard. Unique to the site was the subsurface stratigraphic trapping the liquid hydrocarbons beneath an impermeable layer such that during periods of high groundwater, the liquid hydrocarbons flowed to surface under pressure.*

Canadian Pacific Railway, Former Station Grounds — Cardston, AB

Project Manager: *Conducted an extensive investigation at a former rail yard that had been leased to various parties for uses including petroleum bulk plants, grain elevators, fertilizer/pesticide warehousing, and a stockyard.*

Also completed an investigation on 36 km of track extending from the yard where cinders had been used as ballast material.

TransCanada Pipeline — Calgary, AB

Project Manager: *Responded to leaks at a number of valve sites for a major pipeline company.*

Project Management

Canadian Pacific Railway, WestCAP Project — Saskatchewan and Alberta

Project Manager: *Provided project management for construction and survey services for the construction of approximately 40 km of rail siding in Alberta and Saskatchewan for a major railroad.*

Approvals and Regulatory Compliance

Emerald Bay Water and Sewer Co-op, Springbank Links Golf Course — Springbank, AB

Project Manager: *Provided project management and reporting for the compliance monitoring for a water and sewer cooperative using treated effluent for golf course irrigation.*

Proposed Biodiesel Facility — Lethbridge, AB

Project Manager: *Managed the preparation of the AENV Industrial Approval Application and CEAA Environmental Screening Report for a proposed oil extraction facility and biodiesel refinery with a capacity of 55 million liters per year.*

Apache Energy Ltd., Sour Gas Plant — Halkirk, AB

Project Manager: *Conducted the hydrogeological evaluation for approval of a sour gas plant.*

Various Land Owners — Central Alberta

Project Manager: *Prepared groundwater supply evaluations for proposed rural residential subdivisions in central Alberta.*

CO_2 Storage and Management

The Long-Term Storage of CO_2, A Regulatory Requirements Project, Governments of Canada — British Columbia, Saskatchewan, and Alberta

Section Author: *The report was developed for the four governments to develop principles and regulatory criterial of eh effective long-term storage of CO_2 in Canada. The project was undertaken by Clifton working with the University of Regina and Carnegie Mellon University.*

Prepared the review of existing procedures, protocols, and issues related to the well design, long-term monitoring, and abandonment procedures for injection wells for long-term CO_2 storage.

Policy Development

Sherritt International, Ozone Depleting Substances Policy and Training — Calgary, AB

Project Manager: *Sherritt International was alleged to have unlawfully exported a controlled substance, contrary to the Ozone Depleting Substances Regulations 1998, to Cuba. Sherritt and the Attorney-General of Canada agreed to the first ever Environmental Protection Alternative Measure (EPAM). The EPAM required Sherritt to provide $30,000 to the Environmental Damages Fund, develop a policy and training program on the export and import of ozone depleting substances, and submit for publication the facts of the case, the issues of ozone-depleting substances, and the terms of the EPAM.*

Developed Sherritt International Corporation's Policy and Standard Operating Procedure for Substances Regulated under the Canadian Environmental Protection Act. Trained over 100 procurement staff throughout Canada and Cuba on implementation of the Policy and SOP. Also prepared and presented an Ozone Depleting Substances Training Program to the same staff.

Occupational Health and Safety

Clifton, Corporate Safety Policy — Calgary, AB

Corporate Safety Committee Chair: *Former Chairman of the Corporate Safety Committee reporting directly to the Chief Executive Officer on all matter regarding safety policy, procedures, and compliance. Developed Clifton's Corporate Safety Policy that was accepted by both the Alberta Construction Safety Association and the Heavy Construction Association of Saskatchewan Inc. for Certificates of Recognition. Responsible for the maintenance of Clifton's Certificates of Recognition in Alberta and Saskatchewan.*

Selected Technical Publications

- P.H. Reynolds, K. A. Taylor and W. R. Morgan (1981). *40Ar/39AR ages from the Botwood – Mount Peyton region, Newfoundland: possible paleomagnetic implications,* Canadian Journal of Earth Science, Volume 18

Clifton

Raelene Nagy BASc EIT

Environmental Engineer

Education

BASc Environmental Systems Engineering,
University of Regina, 2017

Specialty Training

Ground Disturbance Training, 2017

CCIL, 2015

Professional Registrations and Affiliations

Association of Professional Engineers and Geoscientists (APEGS), Engineer-in-Training

Professional Record

Clifton,
Environmental Engineer, 2018–Present
Technician, 2016–2018
Technician (Internship), 2015–2016

Tetra Tech, Technician (Work Term), 2014

Key Project Experience

Environmental Site Assessments

SaskPower Phase II Environmental Site Assessment — Estevan, SK — 2018–Present

Junior Engineer: *Completed a Phase II Environmental Site Assessment at a former generating station, geotechnical and environmental investigations including soil and groundwater sampling.*

The site was purchased by SaskPower and used as a coal generating station where it housed multiple boilers and turbine generators. The site was decommissioned in 1994. Investigations and characterization of the site were performed to determine what, if any, action needs to be taken next.

SaskPower Phase II Environmental Site Assessment — Gull Lake, SK — 2018

Junior Engineer: *Completed Phase II Environmental Site Assessment at a former generating station, including soil and groundwater sampling.*

The site is a former SaskPower generating station and service centre. The site has previously been decommissioned and previous environmental site assessments (ESAs) have determined the site has contaminates in the soil and ground water. A Phase II ESA was necessary for drilling and installing groundwater piezometers to further delineate the impacts.

Costco Phase II Environmental Site Assessment — Regina, SK — 2018

Junior Engineer: *Completed Phase II Environmental Site Assessment at the old Costco gas station, including soil and groundwater sampling.*

Costco's move to a new location required that the current gas bar be decommissioned. Clifton performed a Phase II Environmental Site Assessment on the existing gas bar and determined that there were no hydrocarbon impacts prior to removing the underground storage tank and completing decommissioning activities.

SaskPower Regina Elphinstone 4kV Substation, Phase III Environmental Site Assessment — Regina, SK — 2018–Present

Junior Engineer: *Completed Phase III Environmental Site Assessment at the SaskPower substation, demolition/ remediation supervision, and sampling/ removal of impacted soil.*

Previous environmental site assessments determined that the former electrical substation had contaminates in the soil. A phase III environmental assessment was performed to remediate and remove the contaminates from site.

SaskPower Phase II & Phase III Environmental Site Assessment — Regina, SK — 2018–Present

Junior Engineer: *Completed Phase II Environmental Site Assessment at the SaskPower Service Centre, including soil and groundwater sampling. Decommissioned the building and removed the foundation.*

Conducted a Phase II Environmental Site Assessments to determine whether the soil and groundwater was impacted at a former electrical substation. A phase III Environmental Site Assessment was subsequently performed to remediate and remove the contaminates found in the Phase II ESA and to decommission the property.

Western Limited Phase II Environmental Site Assessment — Regina, SK — 2018

Junior Engineer: Completed *a Phase II Environmental Site Assessment, including soil sampling.*

Previous Environmental Site Assessments (ESAs) identified impacts on the former gas station site. The Phase II ESA was performed to further delineate the impacts and to install vapour wells to characterize the soil vapour as part of a risk assessment.

SaskPower Phase III Environmental Site Assessment — Success, SK — 2018

Junior Engineer: *Completed Phase III Environmental Site Assessment at the former SaskPower generating station. Provided remediation supervision. Sampled and removed impacted soil.*

Previous Environmental Site Assessments (ESAs) found contaminates in the soil, water, and concrete. A Phase III ESA was necessary to remediate and remove the contaminates from site.

SaskPower Phase II Environmental Site Assessment — White City, SK — 2018–2019

Junior Engineer: *Completed Phase II Environmental Site Assessment at a SaskPower storage facility, including soil and groundwater sampling.*

A Phase II Environmental Site Assessment was performed to determine whether the treated power poles stored on-site caused contamination to the soil and groundwater.

Groundwater Monitoring

SaskPower Annual Ground Water Monitoring Program — Multiple Locations, Saskatchewan — 2018

Junior Engineer: *Completed groundwater monitoring, sampling, and reporting as part of the annual groundwater monitoring program for SaskPower sites including the Moosejaw Service Centre, Swift Current Service Centre, and the former Federal Pioneer facility.*

As part of SaskPower's commitment to monitor the impacts of old power generating stations, an annual groundwater sampling program is conducted. We monitor well conditions and water levels, collect water samples for chemical analyses, and prepare reports. We compare current results with those from previous years, advise the client of any changes that have occurred, and make recommendations. Sampling locations include Moose Jaw Service Centre, Yorkton Service Centre, Estevan Generating Station, and former Federal Pioneer facility and current SaskPower warehouse.

City of Moosomin Annual Groundwater Program — Moosomin, SK — 2018

Junior Engineer: *Completed groundwater monitoring, sampling, and reporting as part of the annual groundwater monitoring program at the landfill.*

Perform annual monitoring of groundwater to characterize the surrounding aquifers and wetlands for potential impacts from landfill activities.

Semi-Annual Groundwater Monitoring, City of Regina — Regina, SK — 2018

Junior Engineer *Completed groundwater monitoring, sampling, and reporting as part of the annual groundwater monitoring program at the landfill.*

As part of the Permit to Operate, issued by the Saskatchewan Ministry of Environment, semi-annual groundwater monitoring is required, with an annual report submitted to the Ministry.

Annual Groundwater Monitoring, Consumers' Co-operative Refinery Ltd. — Regina, SK — 2018

Junior Engineer: *Completed groundwater monitoring, sampling and reporting as part of the annual groundwater monitoring program for the Co-operative Refinery Complex in Regina.*

As part of the Permit to Operate, issued by the Saskatchewan Ministry of Environment, quarterly groundwater monitoring is required and performed.

Air Monitoring

Consumers' Co-operative Refinery Ltd 2018 Air Monitoring Program — Regina, SK — 2018

Junior Engineer *Completed air monitoring, sampling, and reporting as part of the annual air monitoring program at the Co-operative Refinery Complex in Regina.*

As part of the Co-op Refinery's Permit to Operate, issued by the Saskatchewan Ministry of Environment, monthly air monitoring is required, with an annual report submitted to the Ministry. Three separate methods were used to collect ambient air samples: SUMMA canister sampling, Passive sampling, and Partisol Air sampling. The project included instrument installation, instrument readings, data collection and interpretation, and report preparation.

R.M. of Tecumseh Ambient Air Monitoring — Stoughton, SK — 2018

Junior Engineer: *Completed air monitoring, sampling and reporting as part of the annual air monitoring program throughout the R.M. of Tecumseh.*

Conduct annual air sampling and monitoring for the R.M. of Tecumseh.

Clifton

Terryn Kuzyk PEng

Environmental Engineer

Education

MSc Civil Engineering,
University of Saskatchewan, 2019 Completion

BSc Civil Engineering,
University of Calgary, 2012

Specialty Training

Ground Disturbance Training, 2016

Prime Contractor Training, 2013

Professional Record

Clifton,
Environmental Engineer, 2012–2019
Engineering Intern, 2010–2012

Professional Registrations and Affiliations

The Association of Professional Engineers and Geologists of Alberta (APEGA)

Key Project Experience

Phased Environmental Site Assessments

SaskPower Former Switching and Power Stations, Various Locations Saskatchewan, 2018-Present

Environmental Engineer: *Prepared Phase II environmental site assessments, corrective action plans, and remediation reports for various former switching station sites in Saskatchewan owned by SaskPower.*

The phased assessments were required as part of ongoing subsurface characterization of contamination associated with former site activities. Statistical analyses of the plumes were applied to evaluate plume expansion; these findings were used to provide recommendations for future work to manage or mitigate contamination on-site.

Alberta Transportation Hydrocarbon and Salt Contaminated Sites, Various Locations Alberta, 2015-Present

Environmental Engineer: *Completed Phase I and Phase II environmental site assessments and groundwater monitoring and sampling programs for petroleum hydrocarbon and salt contaminated sites for various portfolios in Alberta.*

Clifton has three contracts with Alberta Transportation, including two in the Southern Region (Capital Sites and Highway Maintenance Yards), and one in the Fort McMurray Region (Highway Maintenance Yards). Work completed as part of the contracts includes phased environmental site assessments as required for delineation of contamination, as well as ongoing groundwater monitoring and sampling to characterize the contamination. Other work completed as part of the contracts has included geophysical assessments such as electromagnetic surveys, and the preparation of risk management plans for long term care and maintenance of sites.

Alberta Transportation Environmental Management Plan Inspections, Northern Alberta, 2018-Present

Environmental Engineer: *Provided both field engineering services and reporting services for a portfolio of highway maintenance yards in Northern Alberta.*

The sites included both new and legacy highway maintenance yards throughout the Northern region. The project includes semi-annual inspection of the maintenance yards on behalf of Alberta Transportation to assess their compliance with guidelines regarding salt handling and storage, as well as conformance with the site-specific Environmental Management Plan.

Historical Document Review, Fort Chipewyan, AB, 2018

Environmental Engineer: *Reviewed and summarized previous environmental reports to identify data gaps and areas of uncertainty, determine if they met a reasonable standard of care, and if the findings were still relevant.*

The site was a former port in Fort Chipewyan that was being divested by Transport Canada. As part of the due diligence of a potential sale, the available environmental reports for the site were reviewed and summarized to identify data gaps and areas of uncertainty that might need to be addressed before the sale of the property.

Petroleum Hydrocarbon Contamination, Calgary, AB, 2011-Present

Environmental Engineer: *Managed the field program, data, and reporting for a petroleum hydrocarbon contaminated residential area in Calgary, Alberta.*

The site includes a monitoring network of over 110 monitoring wells screened in four stratigraphic intervals. Quarterly monitoring and semi-annual monitoring and sampling reports are prepared for the client, as well as annual reports. There is a large volume of historic data that is managed as part of this on-going project.

Environmental Protection Order Reporting, Calgary, AB, 2018

Environmental Engineer: *Prepared the Risk Management Plan to address ongoing contamination as part of an Environmental Protection Order, including a detailed conceptual site model.*

The site includes a monitoring network of over 110 monitoring wells screened in four stratigraphic intervals. Quarterly monitoring and semi-annual monitoring and sampling reports are prepared for the client, as well as annual reports. There is a large volume of historic data that is managed as part of this on-going project.

Agriculture Financial Services Corporation Remedial Excavation, Calgary, AB, 2012-2013

Environmental Engineer: *Provided supervision to the remedial excavation of petroleum hydrocarbon impacted soils, including the collection of representative soil samples to delineate the extents of contamination, and the review of waste management techniques.*

Clifton reviewed the work of previous consultants to identify data gaps and determine next steps, which included the development of remedial options, tender preparation, and contract administration. The excavation was coordinated through the winter months to deliver on-time. A significant component of this project included coordination with third parties and other stakeholders.

Aircraft Hangar Remediation, Calgary, AB, 2017-2018

Environmental Engineer: *Prepared reports documenting and summarizing remediation activities at the site, including the installation of a sub-slab soil vapour system, and reporting following a remedial excavation of the parking lot adjacent the building on-site.*

The project includes both airside and groundside operations on Calgary International Airport (YYC) property. As part of the remedial options analysis, a sub-slab devapourization system was installed in the hangar, and a remedial excavation was completed for other portions of the site. A risk management plan is in place, which includes semi-annual monitoring and sampling of the groundwater as well as the sub-slab depressurization system.

Piikani First Nation Phased Environmental Site Assessments, Calgary, AB, 2017-2018

Environmental Engineer: *Prepared Phase I and Phase II environmental site assessments in support of affordable housing applications. Liaised with the client and the geotechnical group to evaluate scope changes and coordinate field work and interviews.*

Clifton provided combined environmental engineering and geotechnical services for the Piikani First Nation, reducing costs by deploying one cross-trained staff to site to complete Phase I site visits as well as geotechnical test holes for proposed housing locations.

Alberta Infrastructure Historic Court of Appeals Phase I Environmental Site Assessment, Calgary, AB, 2017-2018

Environmental Engineer: *Prepared a Phase I environmental site assessment for the Historic Court of Appeals building in Calgary, including site reconnaissance, historic records review, and interviews.*

The Historic Court of Appeals project included a Phase I environmental site assessment, geotechnical investigation, survey, site servicing studies, and a traffic impact assessment. A value-added service was the completion of a geophysical survey to map the bedrock surface, providing the client with additional information to inform the design depth for any future buildings.

Alberta Infrastructure Bonnyville Centralized High School Phase I Environmental Site Assessment, Calgary, AB, 2018

Environmental Engineer: *Prepared a Phase I environmental site assessment for the Bonnyville Centralized High School, including historic records review and preparation of a summary report for sources of actual and potential environmental contamination.*

The Bonnyville Centralized High School project included a Phase I environmental site assessment, geotechnical investigation, site survey, and geophysical investigation. The various teams coordinated to ensure efficient and timely delivery, using cross-trained personnel for the site portions of the work.

Alberta Infrastructure East Wheatland Crossing School Phase I Environmental Site Assessment, Wheatland County, AB, 2017

Environmental Engineer: *Prepared a Phase I environmental site assessment for the East Wheatland Crossing School as part of a contract for new school developments in Alberta, including historic records review and preparation of a summary report for sources of actual and potential environmental contamination.*

The East Wheatland Crossing School project included a Phase I environmental site assessment, geotechnical investigation, site survey, and traffic impact assessment. The various teams coordinated to ensure efficient and timely delivery, using cross-trained personnel for the site portions of the work to minimize trips to site.

Alberta Infrastructure Nelson Mandela High School Phase I Environmental Site Assessment, Calgary, AB, 2017

Environmental Engineer: *Prepared a Phase I environmental site assessment for the Nelson Mandela High School as part of a contract for new school developments in Alberta, including historic records review and preparation of a summary report for sources of actual and potential environmental contamination.*

The Nelson Mandela High School project included a Phase I environmental site assessment, geotechnical investigation, site survey, and traffic impact assessment. The various teams coordinated to ensure efficient and timely delivery, using cross-trained personnel for the site portions of the work to minimize trips to site.

Olymel Phase Environmental Site Assessments, Southern Alberta, 2018

Environmental Engineer: *Prepared a Phase I environmental site assessments for various pig barns in southern Alberta. Included historic records review and preparation of a summary report for sources of actual and potential environmental contamination.*

There were three sites within southern Alberta as part of the contract that required inspection and reporting. Each report required records review, site reconnaissance, and site visits and reviews.

Monitoring Well Network Decommissioning, Calgary, AB, 2017

Environmental Engineer: *Managed and completed the decommissioning of a groundwater monitoring well network, including work with various stakeholders and reporting.*

Coordinating with the municipal government and the surrounding landowners, a previous groundwater treatment system network was decommissioned in Calgary, AB. The network was installed to monitoring a petroleum hydrocarbon plume, which was identified as being stable to diminishing.

Landfill

Ridgeline Canada Inc. North Peace Regional Landfill, near Fairview, AB, 2016-2017

Environmental Engineer: *Completed stormwater and leachate system design calculations to support civil engineering works.*

Clifton provided design engineering for the expansion of the North Peace Regional Landfill's Industrial Cell north of Fairview, AB. The scope of work included draft cell layouts, preliminary models with a closure option for the existing cell, stormwater analysis for runoff volume approximation, and calculation of material quantities. As a trusted advisor, provided options for slope failure mitigation on the existing landfill cell, and considered leachate recycling or disposal.

Secure Energy Services Conklin Landfill Siting, Conklin, AB, 2017

Environmental Engineer: *Completed stormwater and leachate system design calculations to support civil engineering works. Prepared the detailed engineering design report for submission to the regulator.*

Clifton collaborated with Secure to iteratively design the facility, including optimizing site infrastructure to improve access and minimize costs associated with construction, operation, closure, and post-closure. Special consideration was given to the natural site conditions for stormwater and leachate collection, storage, and removal.

Ridgeline Canada Inc. Youngstown Regional Landfill, Youngstown, AB, 2016-2017

Environmental Engineer: *Completed stormwater and leachate system design calculations to support civil engineering works. Prepared the detailed engineering design report for submission to the regulator.*

Clifton worked on a short timeline to prepare a detailed design for the construction of a Class II landfill for submission to the regulator. The location for the cell was pre-selected, and located between operational and reclaimed trenches, limiting the area for design. Clifton completed the design-bid-build of a 36,000 m^3 landfill cell within 4 months.

Civil

Cargill Rail Crossing Safety Assessment, Craik Subdivision near Davidson, SK, 2016

Project Engineer: *Reviewed the updated Transport Canada Grade Crossing Safety Regulations and standards for grade crossings. Evaluated crossing width and condition, approaches, sightlines, design vehicles, crossing angle, and the crossing warning system as it relates to track speed.*

Cargill required a crossing safety assessment to determine if an expansion to the siding for the Cargill facility in Davidson required an update to the intersection nearby. This assessment was completed to determine if the updated Transport Canada Grade Crossing Safety Regulations would be met with the upgrade to the facility. By applying our understanding of track operations, we were able to demonstrate that the crossing needed some changes, but that this was due to road geometry rather than facility expansion. Consequently, our client did not have to pay for changes to the crossing.

Mobil Grain Ltd. Stormwater Management Plan, Regina, SK, 2017-2018

Project Engineer: *Prepared a stormwater management plan using the Rational Method in accordance with the applicable standards. Prepared a design memo summarizing the stormwater design, including the approximate amount of flooding and runoff for the site.*

The Mobil Grain facility in southeast Regina, over Chuka Creek, is a state-of-the-art facility that loads and offloads containers from the adjacent shared CP/CN rail embankment. A major challenge for the project was routing Chuka Creek beneath the facility to provide design capacity for a 500-year return period, allowing fish passage, and maintaining the current alignment.

Pine Cove Marina and Subdivision Design, Pine Cove, SK, 2016-2018

Project Engineer: *Acted as the project manager, which included budget preparation and review, project accounting, invoicing, maintaining regular communication with the client regarding design changes and progress, and facilitating design meetings with a multi disciplinary design team. Prepared the stormwater management plan and assisted with the preparation of associated construction drawings.*

The project included the design and construction of a subdivision and marina adjacent to Makwa Lake for the client. There was a canal designed and constructed under an adjacent Ministry of Highways highway to connect the marina to the adjacent lake. The project required coordination with regulatory bodies and first nations for approval and construction, as well as multiple design iterations to field fit the marina given the challenging soil conditions on-site. The design and construction of roadways through the development were expedited to facilitate relocation of a gas line to accommodate culvert installation under the highway.

River Landing Design Build, Saskatoon, SK, 2015-2017

Project Engineer: *Acted as the project manager, which included budget preparation and review, project accounting, invoicing, maintaining regular communication with the project architect regarding design changes as part of a multidisciplinary team for construction of a hotel, condominium, and residential tower. Prepared the stormwater management plan and assisted with the preparation of associated construction drawings.*

The project includes a hotel, condominium, and office tower in downtown Saskatoon. Clifton provided the site servicing design, as well as the stormwater design. As part of a multidisciplinary team, Clifton coordinated with the architect, manager, and mechanical engineering consultant to ensure a cohesive design.

Various Commercial Developments for Boychuk Design Build, Rockyview County, AB, 2015-2016

Project Engineer: *Prepared stormwater management systems using the Rational Method and PCSWMM stormwater modelling software to support development permit applications for three separate sites.*

As part of a civil design team, worked with the civil engineers to ensure that grading of the site and building placement facilitated stormwater drainage on the sites while meeting the requirements of the county regarding ponding.

City of Regina Pacer Park Relocation, Regina, SK, 2015-2017

Project Engineer: *Prepared stormwater management systems using the Rational Method and PCSWMM stormwater modelling software.*

The Pacer Park baseball facility was displaced due to construction of the Regina Bypass. Clifton completed the design of the new facility, which included 14 diamonds for age groups ranging from midget to slow pitch leagues. Multiple stakeholders were involved in coordinating the landscaping, irrigation, structural, and electrical engineering services. The design was completed on a tight time line to facilitate construction as soon as possible. Challenges associated with the design and construction of the facility included positioning the diamonds on a narrow parcel and complying with City of Regina drainage requirements.

Richardson International Stormwater Management Design, Olds, AB, 2016-2017

Project Engineer: *Reviewed the historic stormwater design and as-built grades on-site. Compared design grades and as-built grades to address overland drainage direction, and prepared a memo summarizing surface flow for the County.*

Clifton completed the original stormwater design for the Richardson grain facility in Olds. A dispute with an adjacent landowner over drainage from the facility flooding adjacent fields necessitated a review of overland drainage. Clifton completed an as-built survey of the site, comparing the current grades to design grades, and provided recommendations on updates to be made to the site for drainage improvement.

West LRT Project, Calgary, AB, 2010-2012

Project Engineer: *Coordinated quality control testing, including deployment of up to 12 technicians for various materials testing. Reviewed compressive strength test results, compaction results, and mix designs. Prepared a monthly summary of the quality control work for each area of the site. Maintained records monitoring the performance of over 50 concrete mix designs.*

As a member of the quality control team, Clifton assisted in the construction of over 8.2 km of track for the West LRT, the change of alignment of Bow Trail, and the new interchange at Sarcee Trail and 17th Avenue NW. Clifton coordinated the testing of all asphalt, concrete, grout, and shotcrete along the track. The project included the construction of six new stations, one of which was entirely below grade, as well as sections of elevated and trenched guideway.

Selected Technical Publications

- Kuzyk, Terryn; d'Abadie, Stephen; Pritchard, David G. *Hydrogeological Characterization of a Hydrocarbon Plume in a Major Urban Centre.* 12th Joint CGS / IAH-CNC Groundwater Conference in Ottawa, Ontario (01-04 October 2017)
- Kuzyk, Terryn; Barbour, Lee; Hendry, Jim. *A Conceptual Model for Pore Water Release from Coal Waste Rock Piles in the Elk Valley, British Columbia, Canada.* 2015 International Association of Hydrogeologists – Canadian National Chapter (IAH-CNC) Annual Meeting in Waterloo, Ontario (27-30 October 2015)
- Kuzyk, Terryn; Barbour, Lee; Hendry, Jim. *A Conceptual Model for the Flushing of Coal Waste Rock Piles in the Elk Valley, British Columbia, Canada.* 2014 Geological Society of America (GSA) Annual Meeting in Vancouver, British Columbia (19-22 October 2014)



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