KNOWLEDGE SHARING REPORT

Enhance Energy Inc., Wolf Carbon Solutions Inc., and North West Redwater Partnership

DIVISION B:
DETAILED REPORT
Calendar Year 2022

Submitted on:
March 31, 2023

ACTL

Alberta

Natural Resources Canada | Ressources naturelles Canada

Canada

enhance

NWR
NORTH WEST REDWATER PARTNERSHIP

WOLF
MIDSTREAM

Table of Contents

List of Figures

List of Tables

List of Appendices

APPENDIX	**DESCRIPTION**
I	Gas analyses- Sturgeon Compressor Station, Redwater CO_2 Recovery Unit, ACTL Delivery Meter at Clive, Clive Recycle
II	Redwater CO_2 Recovery Unit Process Flow Diagram
III	Project Monthly Emissions and Energy Use
IV	Water analysis- Nutrien Water Disposal Well
V	Clive Measurement, Monitoring and Verification Report
VI	Clive CO_2 Injection Reports
VII	Clive Injection and Production Well Performance Charts
VIII	Clive Injection Wells Drilling and Completions Reports
IX	Nutrien Plant #1 Tie-In Plot Plan, Heat and Material Balance and Process Flow

NOTICE OF COPYRIGHT & PROPRIETARY RIGHTS

In order to ensure consistency across platforms, operational information contained in this report uses the Project definition as outlined in the "Enhance Energy CO_2-EOR Project at Clive Field, Project ID: 8613-7752" as reported in the Alberta Emission Offset Registry ('the Registry') at AEOR Listing Detail (csaregistries.ca). CO_2 injected numbers in this report differ from the Registry reports. The Draft EOR protocol requires a 0.5% discount be subtracted from injected volumes to allow for "unintentional reversals" and Enhance has applied this discount in documents filed with the Registry. Injected volumes in this report do not include the discount. Associated injection amounts, energy use and emissions data are based on third-party verified Offset Project Reports filed with the Registry.

Remaining collective funding (RCF), as defined in the CCS FUNDING AGREEMENT – THE ALBERTA CARBON TRUNK LINE PROJECT made the 30th day of September 2010, defines net tonnes of CO_2 sequestered in a year as the mass of CO_2 injected in the year less any CO_2 that escapes or is extracted from the subsurface. It does not include a holdback or offsets from energy or other inputs used by the Project. These amounts are not reported in this document.

CO_2 is captured from two industrial facilities in Alberta. One is located approximately 12 km east of the Town of Gibbons at the Sturgeon Refinery (56216 RR20, AB-643, Sturgeon County, AB T0A 1N0) which is owned and operated by North West Redwater (NWR) Partnership. The approximate LSD for the refinery is LSD 5 to 16-18-056-21W4. The NWR CO_2 recovery unit (NWR CRU) is located at LSD 12-18-056-21W4. It consists of a booster compressor and associated equipment that captures dry CO_2 from the NWR Rectisol Unit and boosts it into a gathering line than runs to the Wolf Sturgeon Compressor Station (SCS) where the CO_2 is further compressed to ACTL pipeline pressure.

The second CO_2 capture operation, the Wolf Redwater CO_2 Recovery Unit (RCRU), is adjacent to the Nutrien's Redwater Fertilizer Plant in Sturgeon County, Alberta (LSD 5 & 6, NW17-056-21W4). The equipment associated with the RCRU is located at LSD 04-17-056-21W4.

The CO_2 is transported from the capture facilities to the EOR operation at Enhance Energy's Clive field via pipeline. The CO_2 pipeline, called the Alberta Carbon Trunk Line (ACTL), operated by Wolf Carbon Solutions Inc. (WCS), is 240 kilometers in length. It begins at the tie-in point of the RCRU and the Wolf SCS located at 14-07-056-21 W4M. The pipeline continues south, ending at the Clive 04-15 battery located at 4-15-40-24W4M in Central Alberta. Enhance takes delivery of the CO_2 at this point where an on-line analyzer and CO_2 delivery meter are used to determine the mass of CO_2 delivered to the project for EOR and storage. The CO_2 is then distributed through the Clive injection system to nine dedicated horizontal CO_2 injection wells where it is injected into the Leduc formation at a depth of approximately 2000 metres. Recycle CO_2 is produced with solution gas and oil from newly drilled horizontal production wells through a dedicated gathering system to the Clive battery. At the battery, the CO_2 and solution gas are separated from the oil and water and compressed into the CO_2 injection system downstream of the delivery meter where they are re-injected along with the fresh CO_2.

Enhance, WCS and NWR have followed the requirements of Schedule E to the CCS FUNDING AGREEMENT – THE ALBERTA CARBON TRUNK LINE PROJECT made the 30th day of September 2010 in preparing this report. The Project continued in the operational phase during 2022; therefore, certain materials that were reported in prior years, such as construction and commissioning, are not repeated since the focus has shifted to reporting current year operational data and information. If historical information is needed, the reader is directed to prior year versions of this report.

CERTIFICATION ON BEHALF OF ENHANCE ENERGY INC.
CERTIFIED on behalf of Enhance Energy Inc. named in the "CCS Funding Agreement – The Alberta Carbon Trunk Line Project", to be true, accurate and complete, to the best of my knowledge, based on reasonable inquiry and due diligence, as of the date of this certification.

The Certification applies to the information supplied by Enhance Energy Inc. only and does not imply certification of information supplied by other Recipients.

Per: ____________________ **Date:** March 31/23

Blair Eddy, P.Eng
President & COO

NORTH WEST REDWATER PARTNERSHIP

CERTIFICATION ON BEHALF OF NORTH WEST REDWATER PARTNERSHIP

CERTIFIED on behalf of the North West Redwater Partnership named in the "CSS Funding Agreement – The Alberta Carbon Trunk Line Project," to be true, accurate and complete, to the best of my knowledge, based on reasonable inquiry and due diligence, as of the date of this certification.

The Certification applies to the information supplied by the North West Redwater Partnership only and does not imply certification of information supplied by other Recipients.

Per: Peter Duda (Mar 28, 2023 07:43 MDT) Date: March 23, 2023

Peter Duda
General Manager - NWRP

WOLF
CARBON SOLUTIONS INC.

CERTIFICATION ON BEHALF OF WOLF CARBON SOLUTIONS INC.

CERTIFIED on behalf of Wolf Carbon Solutions Inc. named in the "CCS Funding Agreement – The Alberta Carbon Trunk Line Project" to be true, accurate and complete, to the best of my knowledge, based on reasonable inquiry and due diligence, as of the date of this certification.

The Certification applies to the information supplied by Wolf Carbon Solutions Inc. only and does not imply certification of information supplied by other Recipients.

Per: ______________________________ **Date: March 31, 2023**

Jeff Pearson, P. Eng.

President

SECTION 1 CAPTURE		
Section 1.1 Pre-capture Composition and Conditioning		
Description: Boundary conditions for the capture facility must be clearly defined. Depending on the capture technology, different pre-treatment stages prior to the CO_2 capture process are often required to adjust the temperature and/or pressure to the design conditions of the capture process and/or removing compounds that affect the performance of the capture technology. **Purpose**: To share the input design parameters.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Table or graph of daily pressure and temperature of source CO_2 stream Although pre-conditioning is not initially envisioned in the Project, if conditioning is found to be necessary information related to the process shall include: 1. compositional and physical changes through the conditioning equipment 2. an energy balance of conditioning equipment 3. operation report of conditioning equipment	Commentary on any changes in source stream composition
Data Capture Frequency:	Daily where available, otherwise monthly.	

Properties of the source CO_2 streams at the NWR CRU and RCRU are not materially different than design conditions that are described in Section 1.1 of the 2019 detailed knowledge sharing report.

1.1.1 Quantitative

1.1.1.1 Nutrien Design Stream

No changes to design data. 2022 gas analyses from the Nutrien CO_2 outlet stream are provided in Appendix i. Inlet temperature and pressure data is provided in this section.

1.1.1.2 NWR Design Stream

No changes to design data. 2022 gas analyses from the NWR CO_2 outlet stream (taken at the SCS) are provided in Appendix i. Inlet temperature and pressure data is provided in this section.

1.1.2 Qualitative

1.1.2.1 Commentary Nutrien Stream

There were no significant changes in the Nutrien CO_2 stream from the prior year. Actual data from samples of pipeline CO_2 originating at RCRU and taken during 2022 is provided below. Analyses from samples taken at the outlet of the RCRU are included in Appendix i.

CO_2 Nutrien – Actual Normal Pipeline CO_2 Values		
DENSE PHASE	Units	Monthly Average Values
CO_2 (carbon dioxide)	mol Fraction	0.98649
H_2 (hydrogen)	mol Fraction	0.01021
N_2 (nitrogen)	mol Fraction	0.0193
CH4 (methane)	mol Fraction	0.00022
H_2O (water)	mol Fraction	0
$C_2H_6O_2$ (ethylene glycol)	mol Fraction	0
NH_3 (ammonia)	mol Fraction	0
H_2S	ppm	0
Molecular Weight	g/mol	43.6
Gas Compressibility	n/a	0.9944
Absolute Density at 15 °C & 101.325 kPa	kg/m3	1.843
Gross Heating Value at 15 °C & 101.325 kPa	MJ/m3	12.23

Table 1- Nutrien Normal Gas Composition

A plot of pressure and temperature at the inlet to RCRU through 2022 is provided below.

Other inlet temperature drops coincided with other Nutrien outages or low volume deliveries causing RCRU to shut down:

- Mid Dec 2021 to Late Feb 2022 – Nutrien Plant #9 experienced an unplanned outage requiring significant repairs and resulted in no CO_2 deliveries during this period through RCRU.
- Mid-September 2022 – Nutrien experienced a plant trip resulting in nine days of unplanned downtime.
- October 2022 – Nutrien completed a planned three-week plant turnaround.
- Late December 2022 – Nutrien experienced three days of unplanned downtime.

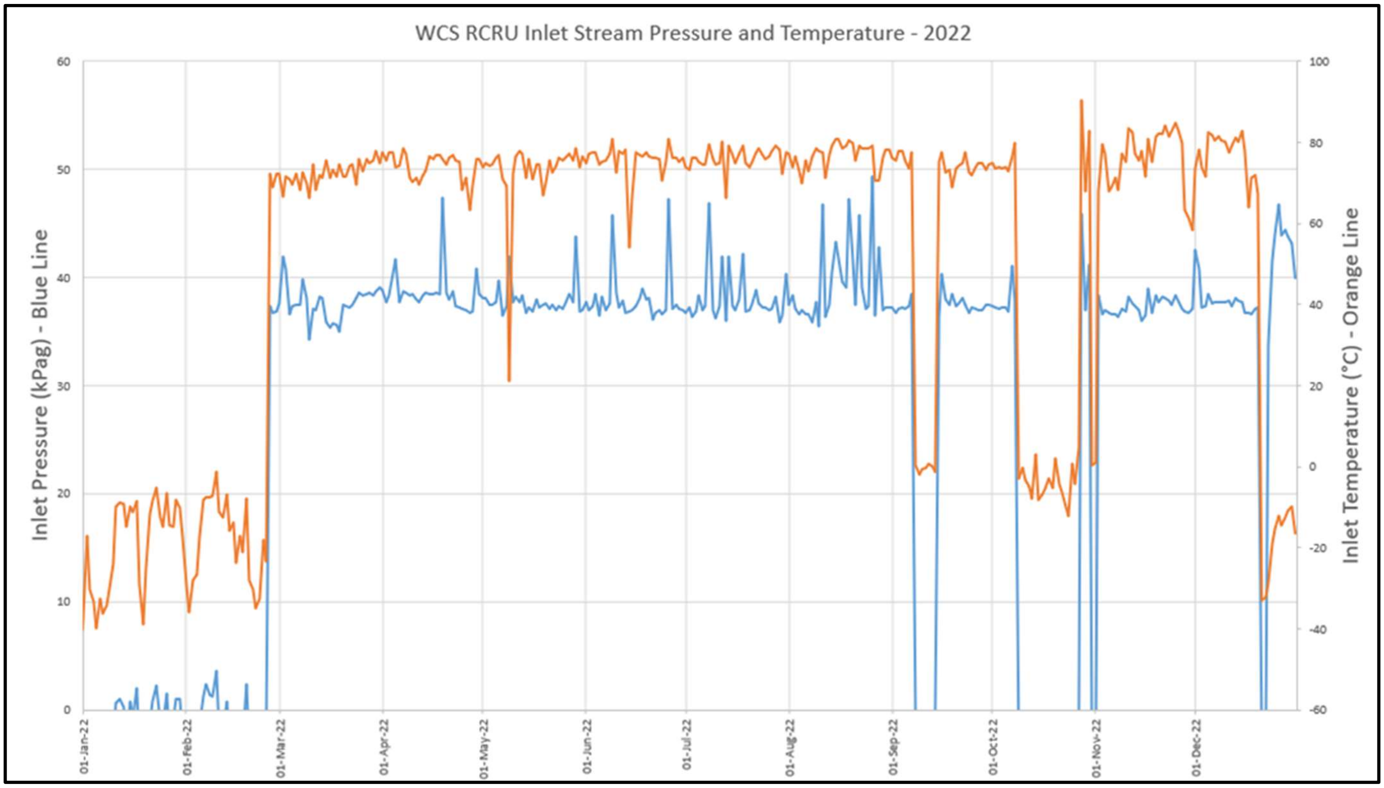


Figure 1- WCS RCRU Inlet Stream Pressure (blue) and Temperature (orange)

1.1.2.2 Commentary on NWR Stream (from Rectisol®)

There are no changes in the NWR Stream to report.

Due to the location of the NWR CRU within the Sturgeon Refinery it is difficult to coordinate sampling directly at the CRU. Analyses from samples taken at the outlet of the SCS are included in Appendix i. Since there are no processes, other than compression, at the NWR CRU or the SCS, these analyses are representative of the gas composition at the NWR CRU. Inlet temperature and pressure and discharge pressure for the NWR CRU are shown in Figure 2. Zero inlet and discharge pressures denote periods when the CRU was not operating due to lack of CO_2 deliveries from the Rectisol Unit.

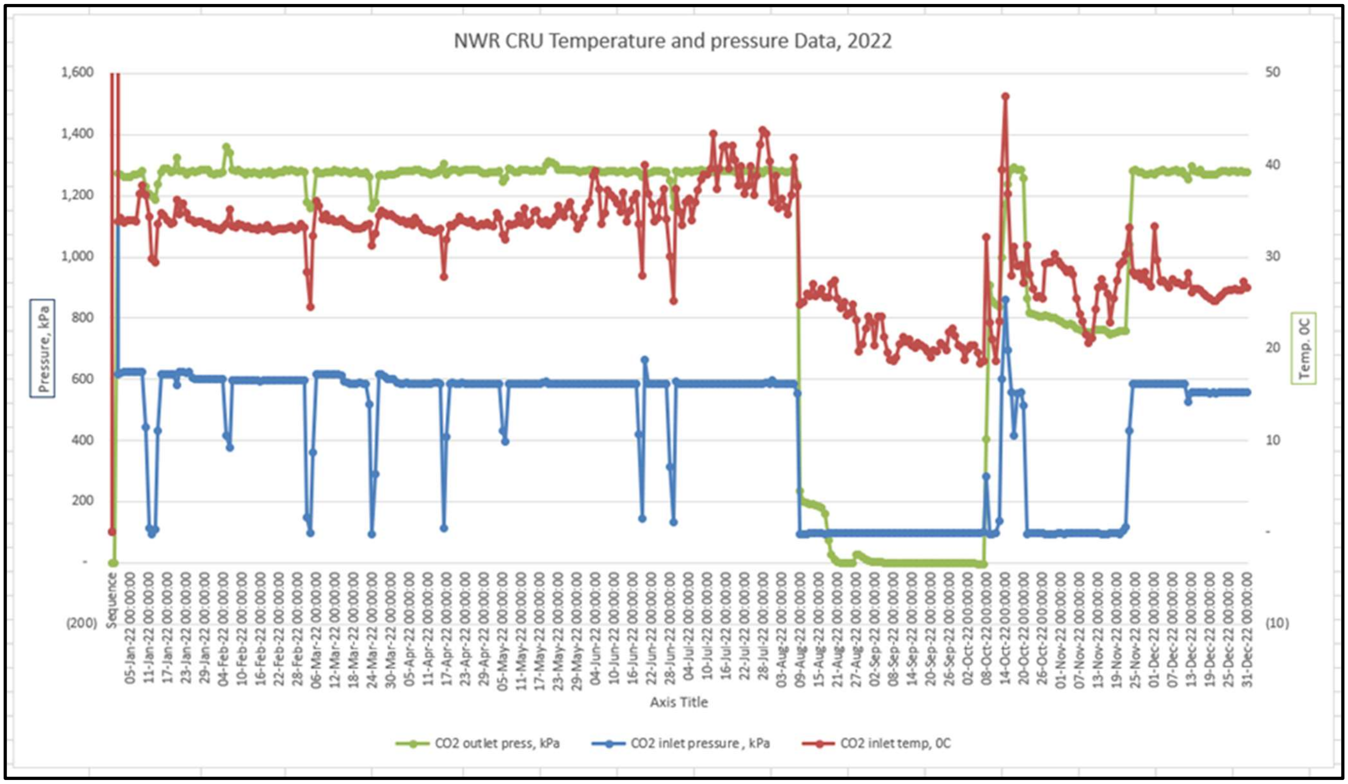


Figure 2- NWR CRU Temperature and Pressure Data

1.1.2.3 Commentary on NWR Stream as provided at SCS

Actual data from samples of pipeline CO_2 originating at SCS and taken during operations during 2022 is provided below.

CO_2 NWR @ SCS – Actual Normal Pipeline CO_2 Values		
DENSE PHASE	Units	Monthly Average Values
CO_2 (carbon dioxide)	mol Fraction	0.99175
H_2 (hydrogen)	mol Fraction	0.00677
N_2 (nitrogen)	mol Fraction	0.0050
CH4 (methane)	mol Fraction	0.00071
H_2O (water)	mol Fraction	0
$C_2H_6O_2$ (ethylene glycol)	mol Fraction	0
NH_3 (ammonia)	mol Fraction	0
H_2S	ppm	0

Molecular Weight	g/mol	43.6
Gas Compressibility	n/a	0.9859
Absolute Density at 15 °C & 101.325 kPa	kg/m3	1.849
Gross Heating Value at 15 °C & 101.325 kPa	MJ/m3	0.16

Table 2- SCS Normal Gas Composition

A plot of pressure and temperature at the inlet to SCS through 2022 is provided below.

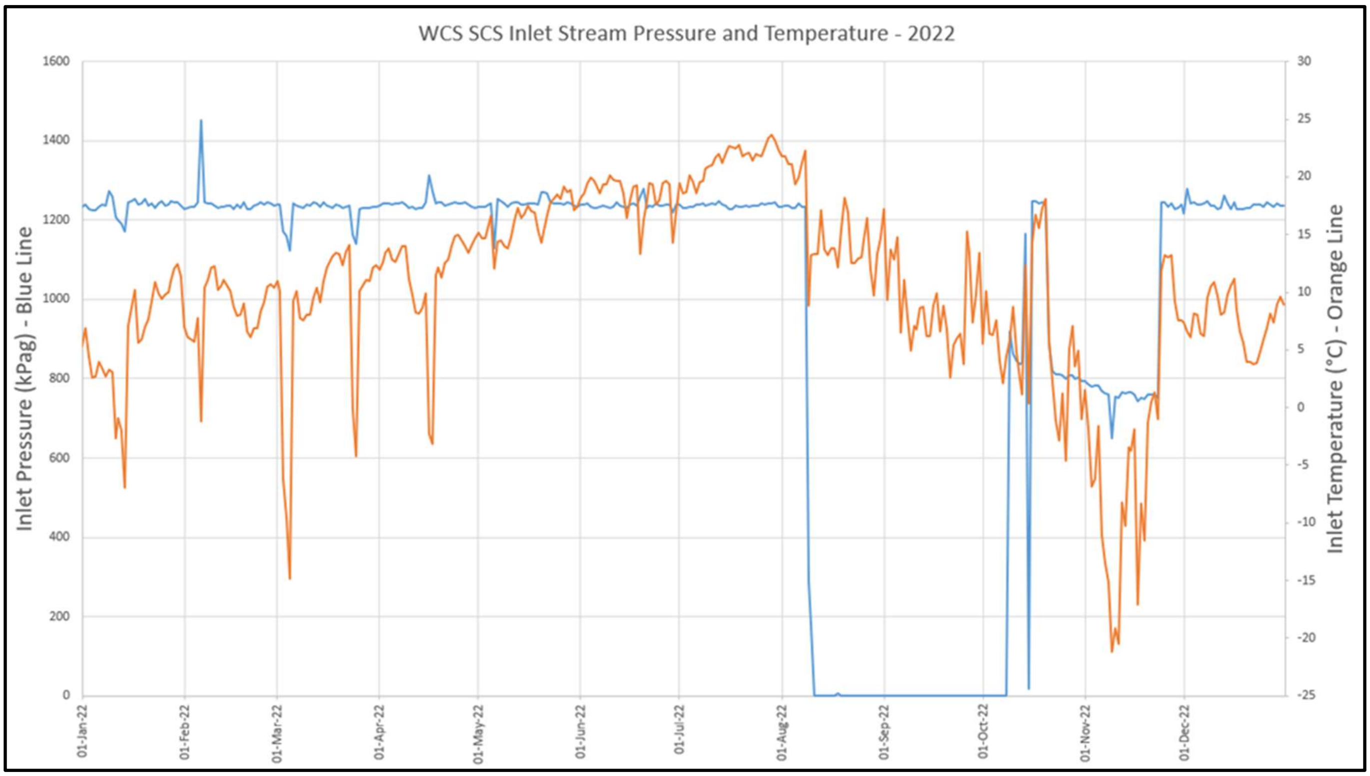


Figure 3- WCS SCS Inlet Stream Pressure (blue) and Temperature (orange)

Inlet temperature drops coincided with outages or low volume deliveries causing WCS SCS to shut down:

- Early August to Early October – NWR completed a 66 day planned plant turnaround.
- Late October to late November – NWR experienced an unplanned outage affecting the refinery. No CO_2 volumes were delivered.

A plot of inlet and outlet pressure at SCS throughout 2022 is provided below. Pressure drops are caused by the same factors noted for Figure 3.

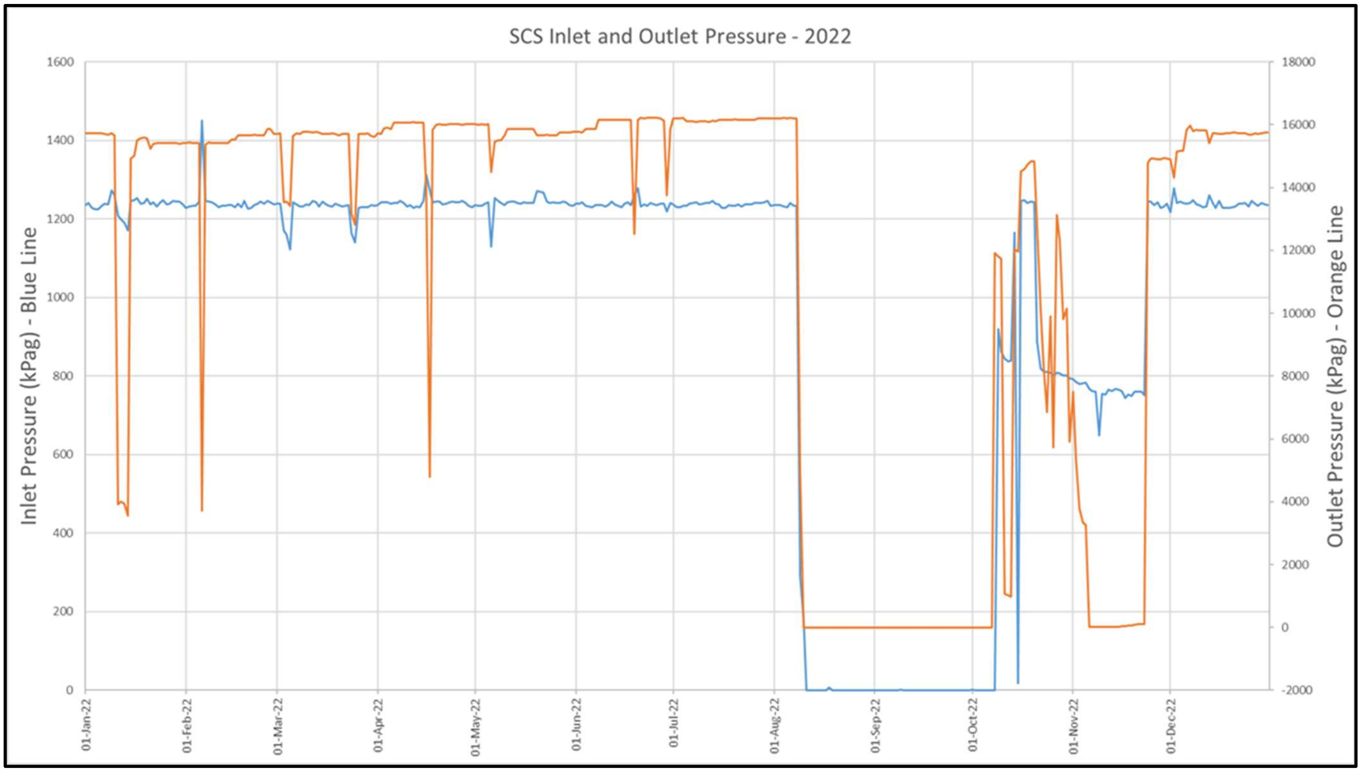


Figure 4- SCS Inlet and Outlet Pressure

1.1.3 Operation Report of Conditioning Equipment

1.1.3.1 Commentary RCRU

- In-service routine inspections were completed at RCRU throughout the year as part of WCS' preventative maintenance program, non-routine preventative maintenance, equipment inspections, piping modifications and pump repairs were completed during two separate outages upstream of RCRU. The work completed will reduce future costs and downtime.
- Vibration analysis of rotating equipment was performed to identify any areas of concern that can be addressed prior to failure. Structural modifications were performed to promote long term reliability.
- Annual corrosion coupon analysis was performed on the 36" carrier pipe. The corrosion rate and pitting rate historically remain low.

1.1.3.2 Commentary NWR CRU

The CO_2 inlet to the NWR CRU is dry and requires no conditioning.

SECTION 1 CAPTURE		
Section 1.2 Specifications and Formulation of Chemicals - Design		
Description: The energy requirement of the capture process is strongly related to the performance of the solvent. Moreover, Health, Safety and Environmental (HSE) properties of solvents, and degradation products formed within the process itself, or if released to the atmosphere, is another important performance parameter for solvents. A lot of R&D work has been put into solvent development. Capture of CO_2 is mainly achieved by either using a chemical or physical solvent. Some solvents need different types of additives in order to enhance their performance, *e.g.*, related to reaction rate (activators) or corrosivity (inhibitors). All chemicals used in the process should be described. **Purpose:** The value of getting detailed information on this would benefit the advancement of CCS technology. Today, the major capture vendors have licensed their solvents. Knowledge of solvent compositions would also be valuable to assess lifecycle performance in terms of energy and environmental impacts of the CCS value chain. Also, HSE issues related to the release of substances originating from the solvents would educate the public, and potentially increase the trust in CCS.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Composition of solvent. Solvent regeneration: - energy used - performance - cycles and impact on solvent capacity to extract CO_2 Detailed description of solvent including type and concentration of: • inhibitors (foaming or corrosion inhibitions) • activators • other additives	Design rationale Design details
Data Capture Frequency:	Annually	

No solvents are used for CO_2 capture at the Nutrien CRU.

NWR employs Rectisol® which is a physical absorption process carried out at low temperatures and high pressures using refrigerated methanol (CH3OH or MEOH) as the solvent medium for physical absorption. Methanol is a liquid organic polar solvent that has significant advantages as a physical absorbent. It has strong solubility with CO_2, hydrogen sulphide (H2S) and other undesirable trace compounds. It is highly stable, and unlike chemical solvents, its effectiveness does not deteriorate over time. Finally, it is inexpensive, and supply is readily available in Alberta's Industrial Heartland. The solvent is regenerated using steam.

The table below summarizes the aggregated data for regenerated methanol solvent in the Rectisol system for the year 2022. The data shows that the solvent is being completely regenerated of the contaminants in the absorption/regeneration cycle. Rectisol units are typically operated with a water content of 1.5 wt% or less; the average water content of 0.75 wt% is considered an efficient operation.

Parameter	value	UOM	Comment
H_2O (water)	0.75	wt%	
NH_3 (ammonia)	<10	ppm wt	Below detection limit
H_2S	<5	ppm wt	Below detection limit

Table 2- Rectisol Methanol Analysis Post-Regeneration

Further details regarding design considerations are included in the 2019 detailed report.

SECTION 1	CAPTURE	
Section 1.3	Process Heat Integration and Configuration – Design	
Description:	The energy requirements of the capture process can be reduced by optimizing heat integration of unit processes and streams within the capture facility.	
Purpose:	Sharing this information could trigger increased awareness, and new ideas, of potential energy saving process integration concepts.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual installed process heat integration configuration.	Design rationale
Data capture frequency	Annually	

Considerations regarding process heat integration and configuration in the design phase were primarily considered for the NWR plant. This is because the CO_2 capture component at the NWR site is integrated into a new facility and thus processes could be designed at inception with optimized heat integration. For the CO_2 compression train, heat integration is not feasible because the heat value is low grade and uneconomic to recover. There is no requirement for heat integration at the Nutrien plant as the CO_2 stream is currently vented from an existing plant process.

There were no changes to the heat integration configuration reported in previous knowledge sharing documents. Please refer to Section 1.3 of the 2019 detailed report.

SECTION 1	CAPTURE	
Section 1.4	Process Design	
Description:	Detailed process design description of the capture, compression, and dehydration facilities.	
Purpose:	This process design information enables an increased understanding of state-of-the art process design	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	As built PFD and measurement schematic.	Design rationale Updated rationale for design
Data capture frequency	Annually and updated as necessary.	

There were no material changes to process design including PFDs, plot plans or measurement schematics for the Rectisol® unit, NWR CRU, SCS or RCRU. Please refer to the 2019 knowledge sharing report for this information.

Work began in 2022 to tie-in the Nutrien Plant #1 CO_2 supply to the RCRU as contemplated in the original Project Funding Proposal. This project entails installation of an electrically driven blower and associated inlet and outlet piping to move CO_2 rich off-gas from Plant #1 to the existing RCRU. Currently installed dehydration and compression equipment at the RCRU does not require modification based on expected output from the existing Nutrien supply and the added Plant #1 volumes. The project is scheduled to be completed in 2023.

SECTION 1	CAPTURE
Section 1.5	**Energy Consumption (Energy Penalty of Capture) - Performance**

Description: The boundaries for the energy balance will be submitted based on the Project Plan and an overall figure for the energy of capture should be reported as MJ/kg of CO_2 captured.

Purpose: There is a lack of real data for energy consumption, and information would be valuable for benchmarking performance and as a driver for developing more energy efficient processes. The energy balance is a useful comparison to other process approaches for CO_2 capture.

Reporting Requirements:	Quantitative Data/Information	Qualitative Knowledge
During Operations:	Actual energy consumption of capture expressed as MJ/kg CO_2 captured, split into (as applicable): 1. heat rejected to cooling water 2. electricity usage 3. compression requirements (excluding compression for pipeline transportation) 4. steam consumption 5. summary table Although not currently envisioned for the Project, the following details should be provided in case they become relevant to the Project: 6. water consumption 7. electrical recovery 8. air separation energy 9. any other relevant indicators	Benchmarking estimate
Data Capture Frequency	Monthly average	

Energy use data for the Redwater and NWR CRUs is provided below.

The RCRU contains both dehydration and compression processes that are integrated to provide optimum performance of the system. It is not possible to isolate energy use for compression from the overall process. Therefore, energy use reported below is for the entire CRU in both cases.

1.5.1 Quantitative

1.5.1.1 Energy of Capture Expressed As MJ/Kg Of CO_2 Captured

WCS (RCRU and NWR CRU)

Energy use is summarized for 2022 as follows:

REDWATER CRU			NWR CRU		
POWER	**NATURAL GAS**	**TOTAL**	**POWER**	**NATURAL GAS**	**TOTAL**
MW-hrs	**GJ**		**MW-hrs**	**GJ**	
25,835	4,061		60,834	92	
GJ	**GJ**	**GJ**	**GJ**	**GJ**	**GJ**
93,007	4,061	97,067	219,003	92	219,095
Tonnes throughput		**158,624**	**Tonnes throughput**		**886,290**
MJ/kg		**0.61**	**MJ/kg**		**0.25**

Table 3- Energy use at RCRU and NWR CRU

Energy use at the SCS and the remainder of the ACTL is reported in Section 2.5.

1.5.2 NWR Rectisol®

1.5.2.1 Rectisol® Unit

Rectisol		
POWER	**NATURAL GAS**	**TOTAL**
MW-hrs	**GJ**	
31,914	306,600	
GJ	**GJ**	**GJ**
114,890	306,600	421,490
Tonnes throughput		**894,502**
MJ/kg		**0.47**

Table 4- Rectisol Energy Use

Note: The Rectisol Unit is primarily used for H2 production. The above figures are on the basis of allocating 100% of energy to CO_2 capture which is inconsistent with the boundary condition (pre ACTL) of venting CO_2 or with an allocation between H2 and CO_2 recovery and should therefore only be used a reference.

During preparation of this document an error was found in reported energy use by the Rectisol Unit in the 2021 report. The corrected information is provided in the following table.

Rectisol- 2021 Correction		
POWER	**NATURAL GAS**	**TOTAL**
MW-hrs	**GJ**	
37,730	320,300	
GJ	**GJ**	**GJ**
135,828	320,300	456,128
Tonnes throughput		1,104,891
MJ/kg		**0.41**

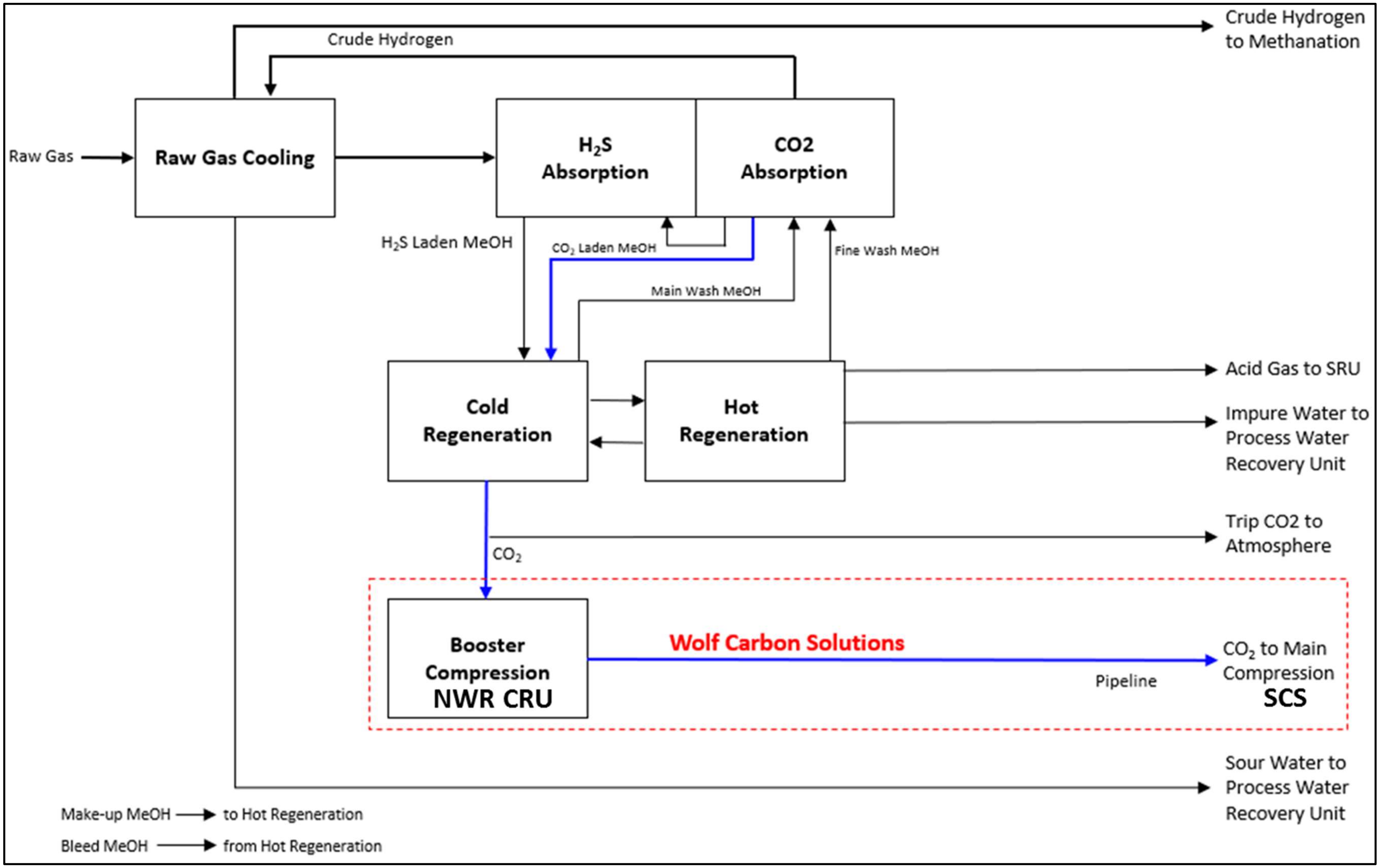


Figure 5- Rectisol® Process Block Flow Diagram including Mass Balance

1.5.3 Qualitative

Benchmarking Estimate

1.5.3.1 RCRU

The boundaries for the energy balance at RCRU are based on the Project Plan, a schematic showing the process flow can be found in *Appendix ii.*

1.5.3.2 NWR CRU

The boundary of the NWR CRU capture is the outlet of the Reabsorber (Cold Regeneration) where CO_2 offgas is directed to the NWR CRU as shown in Figure 6. The SCS is considered part of the ACTL.

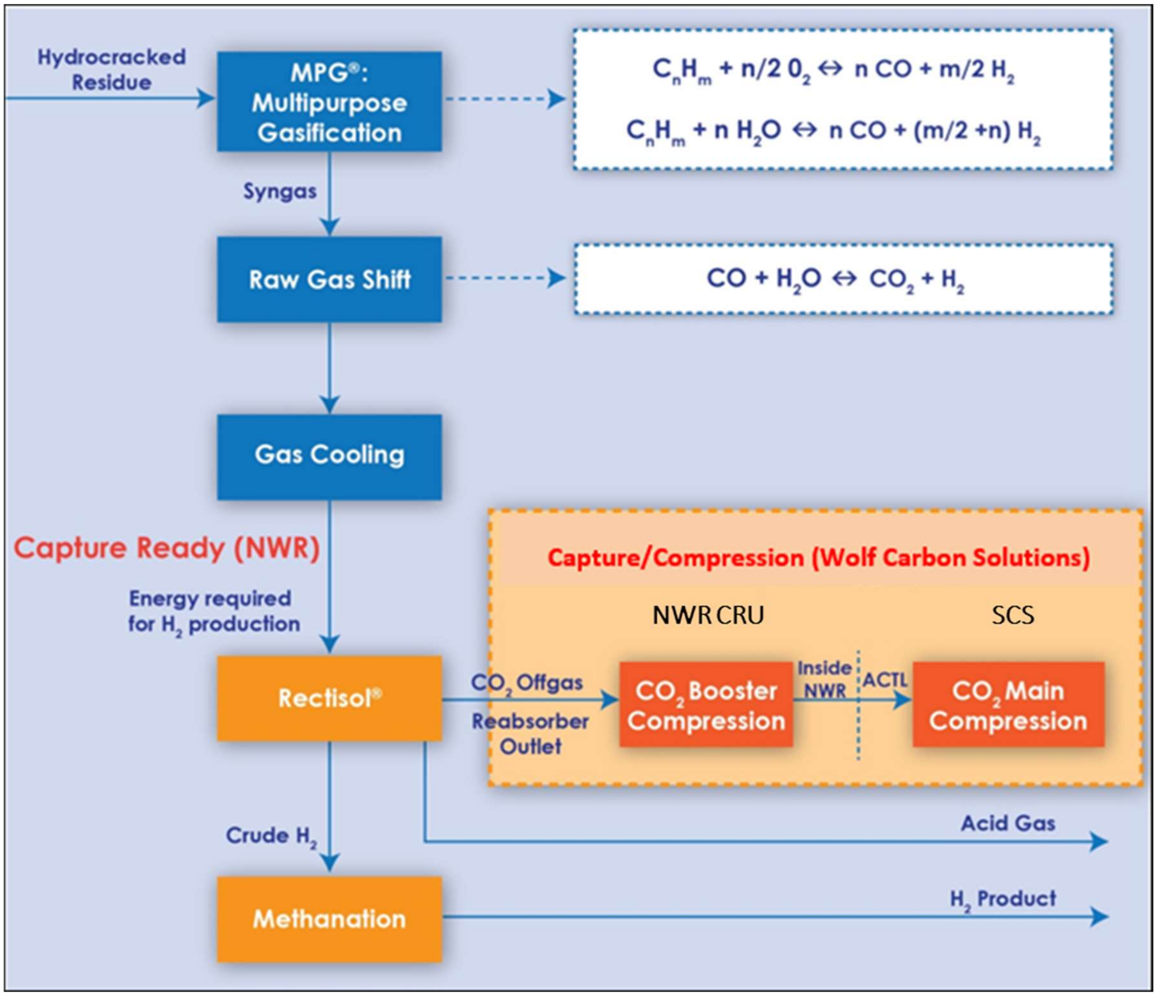


Figure 6- NWR CO_2 Capture Energy Boundary Diagram

SECTION 1	CAPTURE	
Section 1.6	CO_2 Capture Ratio - Performance	
Description:	The performance of the process in terms of amount of CO_2 captured should be reported by reference to the CO_2 capture ratio, which is defined as the fraction of the formed CO_2 which is captured, on an annual basis, taking the availability of the plant into account.	
Purpose:	This is valuable for the purpose of benchmarking technologies.	

Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual fraction of the formed CO_2 which is captured, on an annual basis.	Benchmarking estimate
Data Capture Frequency:	Daily average, if available. Otherwise monthly estimates.	

1.6.1 Quantitative

1.6.1.1 RCRU

CO_2 capture ratio metrics do not apply to the fraction of formed CO_2 from the Nutrien process. The Nutrien process does not use an additional process to separate the CO_2 from their main fertilizer process, as the CO_2 is a by-product that is presently being vented to the atmosphere as a wet, pure CO_2 stream. The CO_2 emitted from the process is compressed and dehydrated for transportation in the ACTL pipeline with no additional capture technology being used.

The CO_2 capture ratio for the Nutrien CO_2 stream is strictly a function of overall plant availability. The steady-state plant availability is anticipated to average 98% through the life of the facility, therefore the CO_2 capture ratio over the life of the facility is expected to be 98%. RCRU availability was 95.3% for 2022. Nutrien CO_2 delivery online time was 80.3%, excluding the scheduled turnaround at Nutrien's facilities that lasted 19.4 days during 2022.

1.6.1.2 NWR CRU and SCS

The CO_2 capture ratio for the combined NWR CRU and SCS will be a function of the fraction of formed CO_2 and plant availability. The cumulative steady-state compression plant availability for SCS is anticipated to average 98%, and the CO_2 removal efficiency of the Rectisol® is 97.1%. Therefore, the overall capture ratio through the life of the project is expected to be 95.2%. SCS online time, which is the product of availability due to internal factors, was 98.9% for 2022. NWR CO_2 delivery online time was 86.2% during 2022 excluding a scheduled turnaround which lasted 66.4 days.

1.6.2 Qualitative

1.6.2.1 Benchmarking Estimate

The benchmarking estimate for the CO_2 capture ratio is 98% for the RCRU, unchanged from the prior year.

The benchmarking estimate for the CO_2 capture ratio is 95.2% for the combined NWR CRU and SCS CO_2 stream, unchanged from the prior year.

SECTION 1	CAPTURE	
Section 1.7	**Reliability - Performance**	
Description:	The reliability of the capture process and operational interference with the base facility is important information. Downtime information should be given for all relevant components affecting the overall reliability of the capture facility.	
Purpose:	Reliability data should be provided to inform relevant stakeholders of the operational risks caused by CO_2 capture. The information provided will be completed at a detailed level, in order to provide failure rate data on a process unit level. This will enable new projects to optimize their selection of facilities, systems, and equipment. It will also help with risk analyses or maintenance and spare-parts planning.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual failure rate of process units (the frequency should be expressed as failure per year with a description of the cause of the failure). Actual annual availability measured in percentage of time when system is operational (this should include recognition of planned and unplanned down-time).	Rationale for estimated availability Summary of lessons learned from operational experience
Data Capture Frequency:	Annually	

1.7.1 Quantitative

1.7.1.1 RCRU

Annual availability for process units

The annual availability for the RCRU process units is listed below:

Process Units	2022 Availability	Expected Average Availability (over remaining asset life)
Inlet Area/Separation	89.8%	98%
Compression	93.7%	98%
Dehydration	93.7%	98%
Refrigeration / Pumping / Metering	93.7%	98%

Table 5- Availability of Process Units

1.7.1.2 NWR Rectisol©

The gasifier/ Rectisol was out of service for 108 days in 2022. Of note, in 2022 NWR held a major full plant maintenance turnaround that lasted for 66 days in August and September to address required inspections, catalyst changes and maintenance items on all units. Following restart of the units, a leak in a vessel in the Shift section of the Gasifier unit necessitated a further 32-day repair. The leak was determined to be caused by stress corrosion cracking on a surge vessel in the shift reactor section. The immediate remedy taken was to retire the affected vessel and to replace it with a similar vessel while operating the unit in a modified manner. An extensive engineering review of metallurgy in the shift reactor section of the unit was undertaken and other piping changes will be made at the time of the next scheduled maintenance turnaround. Aside from these 2 major maintenance events, the Gasifier / Rectisol unit had 10 days of disrupted operations caused by trips such as instrumentation or pump fouling. A reliability task force has shown good results including the elimination of external utility related trips and Gasifier burner life related downtime. As discussed in Section 1.6, CO_2 is not formed when the Gasifier is not in service, therefore refinery downtime will not result in increased CO_2 emissions.

1.7.1.3 NWR CRU and SCS

Annual availability for process units

The annual availability for the process units is listed below:

Process Units	2022 Availability	Expected Availability (over remaining asset life)
NWR CRU	86.2%	98%
SCS	98.9%	99%

Table 6- Availability of NWR CRU and SCS

The availability of the CRU is lower than expected in 2022 due to a 32-day repair to a vessel in the shift reactor section of the gasifier unit in October and November. Trips which were caused by external factors (temporary loss of oxygen) were greatly reduced. The refinery executed a 66-day maintenance turnaround during which all process units were shutdown. The CRU comes down when the gasifier goes off-line but on a standalone basis is highly reliable. Anticipated reductions in gasifier trips will improve CRU availability.

1.7.2 Qualitative

1.7.2.1 RCRU

Rationale for estimated availability

There were no changes to the rationale for estimated availability for RCRU as reported in previous knowledge sharing documents. Please refer to Section 1.7 of the 2020 detailed report.

1.7.2.2 NWR Rectisol©

Benchmark Estimate

The estimated benchmark for planned average availability is 92.6% over a four-year cycle.

Outage Scenarios

Three operating scenarios that result in full or partial curtailment of CO_2 deliveries and which may result in increased CO_2 emissions to the atmosphere have been identified:

Scenario 1 –-NWR CRU Trip

In the event of a curtailment of storage activities, the NWR CRU will trip off or reduce throughput and all or part of the CO_2 offgas will be vented to the atmosphere for the duration of the outage. In this scenario, the CO_2 capture ratio is directly impacted.

Scenario 2 – Rectisol® unit outage

In the event of an unplanned Rectisol® outage, CO_2 production will cease and deliveries to the ACTL will be curtailed. The capture ratio will be unaffected.

Scenario 3 – Gasifier or Methanation unit outage

In the event of a gasifier outage, production of syngas will shut down, the syngas in the system will be reduced and the CO_2 emitted is expected to be inconsequential. If the Methanation unit trips off, CO_2 may be sent to the NWR CRU at a reduced rate, and the CO_2 emitted is expected to be inconsequential. In this scenario, there is no impact to the CO_2 capture ratio.

1.7.2.3 NWR CRU and SCS

Rationale for estimated availability

There were no changes to the rationale for estimated availability for NWR CRU and SCS as reported in previous knowledge sharing documents. Please refer to Section 1.7 of the 2020 detailed report.

SECTION 1	CAPTURE
Section 1.8	Emissions to Air, Soil or Water - Performance

Description: All regulated emissions (non- CO_2), to air, soil and water caused by the introduction of the CO_2 capture process should be identified and reported, with identification of the ultimate waste products. Any substances that might have harmful environmental or HSE effects if released to atmosphere should be identified.

Purpose: Providing this information may allow technology developers to know the emissions from a process, in order to focus on developing improved new processes, from both a HSE and cost perspective, and to provide valuable information to other project developers that are considering different methods for waste handling.

Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual or calculated non-CO_2 emissions to air, soil, and water (ppm) including, but not limited to: 1. combustion emissions as calculated from fuel consumption 2. daily volumes of extracted disposal water 3. any emissions that were unexpected will be reported	Identify substances that may have environmental or HSE effects Report properties and potential consequences of emissions from the capture facility Report summarizing emissions and potential negative consequences for the environment
Data Capture Frequency:	Monthly and Annually	

1.8.1 Quantitative

1.8.1.1 RCRU

Emissions for 2022 attributable to the capture process are tabulated below. Monthly data can be found in Appendix iii.

Breakdown of RCRU CO_2e by Produced Gas Type and Input Use						
Gas Produced	**Natural Gas Use tCO₂e**	**Gasoline Use tCO₂e**	**Diesel Use tCO₂e**	**Power Use tCO₂e**	**Misc- all to CO₂ tCO₂e**	**Total**
CO_2	207.0			14,726.1		14,933.1
CH4	11.3					11.3
N2O	1.7					1.7
TOTAL	220.0	0.0	0.0	14,726.1	0.0	14,946.1

Table 7- RCRU Emissions

There were no material miscellaneous emissions in 2022.

1.8.1.2 Quantities Water Disposal Extracted from Dehydration

The moisture extracted from the dehydration process is directed to the inlet knockout drum. All the produced water from the CO_2 stream is disposed of in a nearby deep injection well. The WCS SCADA system logged 86,380 m3 of water injected into the disposal well in 2022 produced from dehydrating the CO_2. Energy and emissions associated with the dehydration and injection processes are captured in the RCRU level figures.

1.8.1.3 Produced Water

The average amounts of produced water from the RCRU process is unchanged from 2020 and the measurement process thereto.

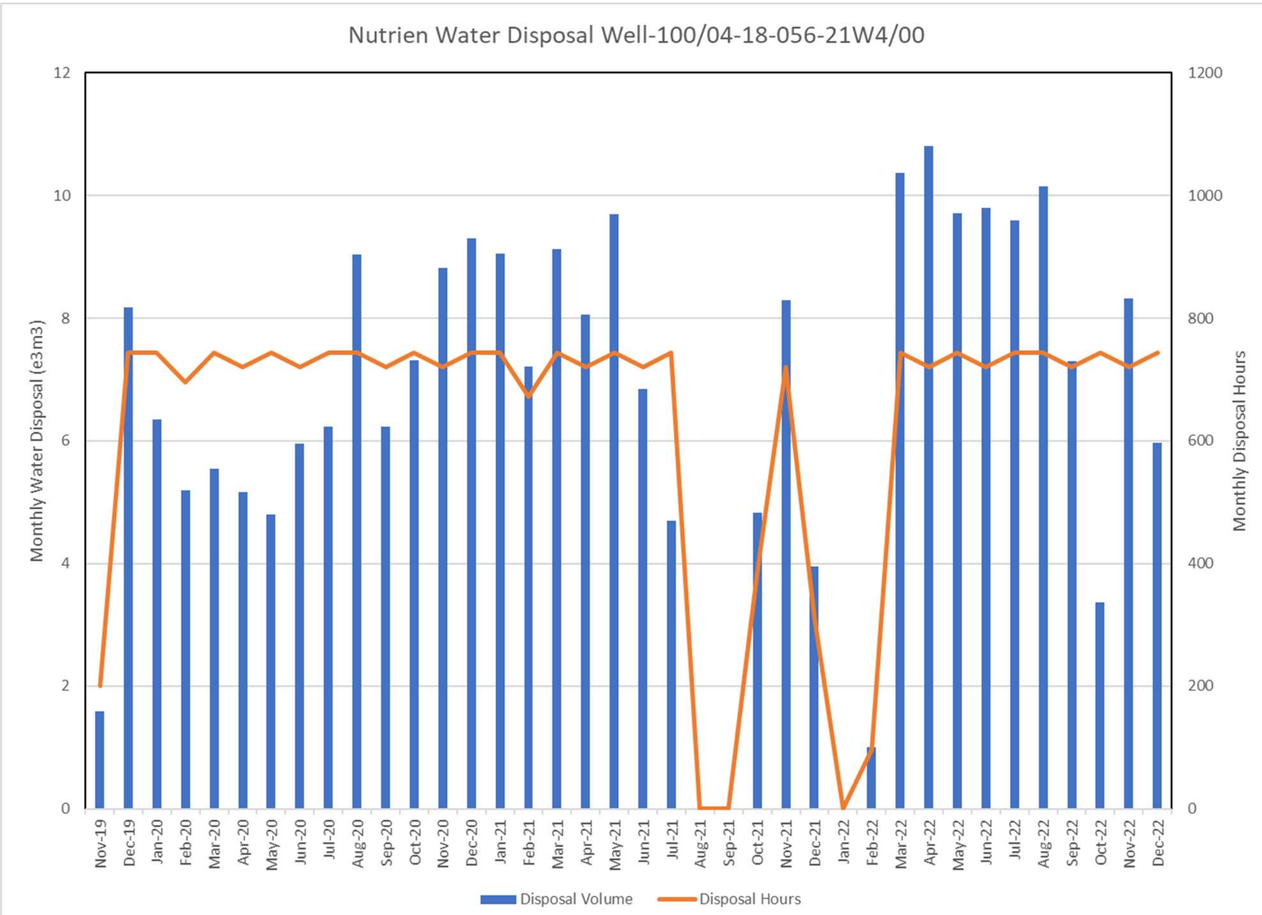


Figure 7- RCRU Water Disposal Volumes

Analysis of the water sample taken in 2022 is provided in *Appendix iv*. Sampling will be undertaken annually in accordance with the license requirements of the disposal well.

1.8.1.4 Any Unexpected Emissions

There have been no unexpected emissions during 2022.

1.8.2 NWR Rectisol©

1.8.2.1 Air Emissions

Under normal operating conditions there are no direct air emissions from the Rectisol® unit and NWR CRU as shown in Table 8.

Emissions Source (tonnes/day)	SO_2 (t/d)	NO_X (t/d)	CO (t/d)	$PM_{2.5}$
Rectisol®	0.00	0.00	0.00[1]	0.00

Table 8- Contribution to Regional Criteria Air Contaminants

In the case of a CO_2 compression trip, the CO_2 offgas is vented to the atmosphere. In this backup scenario the expected air emissions (100 % case) are as shown in Table 9.

Emissions Source	CO (t/d)	CH_4 (t/d)	H_2 (t/d)	MeOH (ppm v)	H_2S (ppm v)
Rectisol®	1.9	1.4	0.5	8	1

Table 9 Expected Non-CO_2 Air emissions in Event of CO_2 Compression Trip

1.8.2.2 Soils Emissions

The Rectisol® unit has no soils emissions. Topsoil will be stripped, salvaged, and stockpiled in a stable location prior to development. Appropriate erosion control measures, including vegetative cover on soil stockpiles, will be implemented to prevent wind and water erosion. Subsoil compaction may occur during construction and operation of the project. However, the impacts are localized and reversible through reclamation. In the event of an unplanned chemical release, spill response, containment and remediation measures will ensure that impacts on the sub-soil resource are localized and reversible.

1.8.2.3 Water Emissions

The Rectisol® unit has no water emissions. The impure water and sour water process streams are sent to the Gasifier's process water recovery unit and are either reused in the Gasifier's Gas Cooling unit or sent to the Refinery's Water Treatment unit.

1.8.3 NWR CRU

Emissions for 2022 attributable to the NWR CRU capture process are tabulated below. Monthly data can be found in Appendix iii.

Breakdown of NWR CRU CO_2e by Produced Gas Type and Input Use						
Gas	**Natural Gas Use tCO_2e**	**Gasoline Use tCO_2e**	**Diesel Use tCO_2e**	**Power Use tCO_2e**	**Misc- all to CO_2 tCO_2e**	**Total**
CO_2	5.1			34,675		34,680
CH4	0.3					0.3
N2O	0.0					0.0
TOTAL	5.4	0.0	0.0	34,675	0.0	34,680

Table 10- NWR CRU Emissions

Natural gas related emissions from the NWR CRU are attributable to a small amount of natural gas used in the refinery to provide steam for heating (indirect emissions). The majority of indirect emissions from the unit are from use of grid supplied power. There are CO_2 sensors throughout the facilities that read CO_2 levels and it is expected that fugitive emissions will be negligible.

1.8.4 Qualitative

Identify substances that may have environmental or HSE effects

There are no substances emitted from the Project's capture process that may have environmental or HSE effects.

Report properties and potential consequences of emissions from capture facility

Since there are no harmful substances emitted from the process, there exist no properties of such substances, nor are there potential consequences to be disclosed.

Report summarizing emissions and potential negative consequences for the environment

There are no direct emissions from the NWR CRU and SCS during operation and the only emissions from the RCRU are small quantities of non-condensable vapours that are extracted from the CO_2 stream during the CO_2 liquefaction process. These impurities originate in the process areas of the fertilizer plant from which the CO_2 stream was captured. This vent stream off the Low Temperature Separator is mainly comprised of Hydrogen, Nitrogen, and Oxygen that is mixed under various exit conditions with a small stream of CO_2. The CO_2 is used to dilute these compounds and provide a means of dispersion out the vent stack.

SECTION 1	CAPTURE
Section 1.9	Land Use – Plot Plan

Description: The footprint of the capture facility will determine the feasibility of the capture concepts for "brown field" projects, where there is limited available space. Information on typical layout and land use, taking the utility requirements into account.

Purpose: This will provide valuable information for other CCS project developers. The plot plan will provide valuable information with respect to the total footprint of the capture process

Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Any changes (including modifications, upgrades, expansions).	
Data Capture Frequency:	Annually and updated as necessary.	

There have been no material changes to the plot plans for the Rectisol© unit, the CRUs or the SCS. Please refer to the 2019 report for this information.

SECTION 1	CAPTURE		
Section 1.10	CO_2 Dehydration Technology – Approach		
Description:	Keeping the level of water at a minimum level prior to entering the pipeline is essential for corrosion control. Documentation of the process steps to achieve specification CO_2 would be valuable.		
Purpose:	Sharing of best available technologies and knowledge on this issue is valuable for future CCS projects, in order to choose cost-efficient and dependable solutions.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Actual total level of drying achieved (ppm water), measured at plant outlet. If available, the realized level of drying achieved by each stage shall be provided.	Rationale for chosen dehydration technology and level of drying required Evaluation of selected technology Lessons learned	
Data Capture Frequency:	Annually		

1.10.1 Quantitative

An advantage of the Rectisol® process is that it produces extremely dry CO_2 off gas with water content less than 1 ppm wt., within the design specifications of the pipeline and storage facilities or for use in enhanced oil recovery operations. Since no dehydration is required at the NWR site, the description below is focused on the dehydration process at the Nutrien plant.

Description of the Drying Technology (Including Levels of Drying – Per Stage and Total)

There were no changes to the description of the Drying Technology for RCRU as reported in previous knowledge sharing documents. Please refer to Section 1.10 of the 2020 detailed report. The average RCRU outlet CO_2 water content by month is shown below.

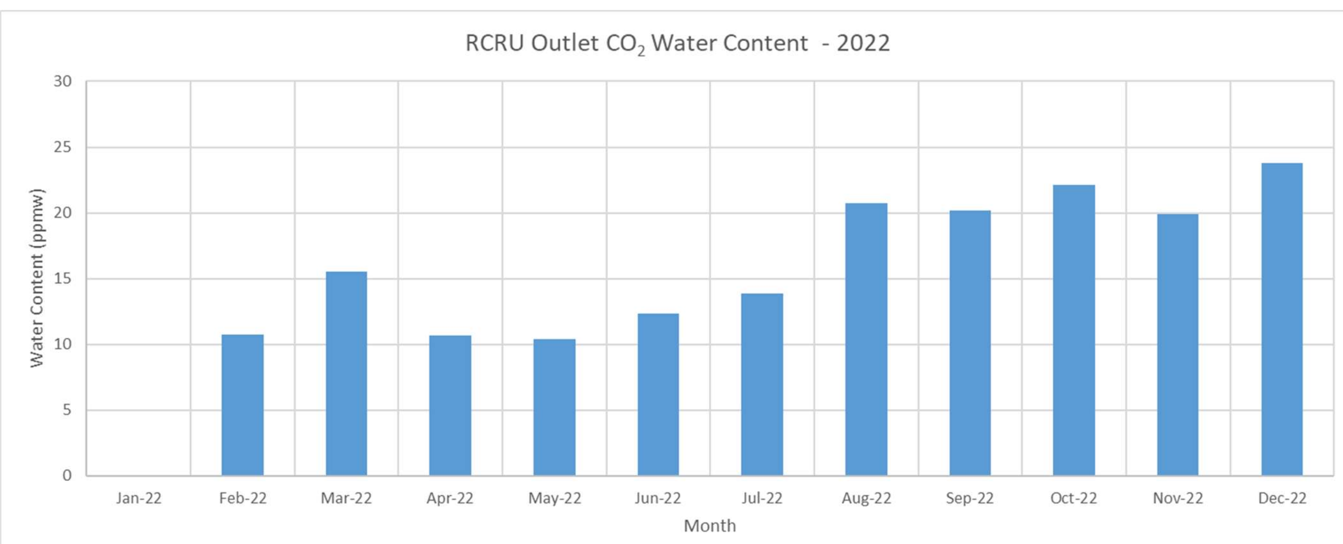


Figure 8- RCRU Outlet Water Content

1.10.2 Qualitative

Rationale for chosen dehydration technology and level of drying required

There were no changes to the rationale for chosen dehydration technology and level of drying required for RCRU as reported in previous knowledge sharing documents. Please refer to Section 1.10 of the 2020 detailed report.

SECTION 1	CAPTURE

Section 1.11 Scale-Up Experience and Methodology – Approach

Description: One of the largest technological risks of building a commercial scale CO_2 capture system relates to the lack of experience with design and operation of CCS-scale plants. These risks are normally handled by a combination of pilot-scale testing and modelling. It would be valuable to share the scale-up philosophy applied and the experience gained during process development, such as modelling tools used for verification of piloting, reference plants, lab-tests, mock-up studies, use of scale-up correlations, use of rules of thumb for scale-up, dimension analysis, principles of similarities.

Purpose: Sharing information regarding scale-up experience could help reduce project lead time for other CCS projects.

Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
After Start-up	Report on performance (capture rate, energy penalties, emissions) of full-scale plant compared with pilot plants, initial modeling and tests done at a smaller scale should be documented, in order to provide insight in the nature of scale-up of CO_2 capture technologies.	
Data Capture Frequency:	N/A	

1.11.1 Quantitative

1.11.1.1 Commercial Scale-up

The ACTL and CO_2-EOR and storage at Clive use commercially available technologies that have been used in various industries for decades. As such, there was no piloting of technology or scale up risk.

Detailed discussion is provided in the 2019 Knowledge Sharing report. In summary:

- Rectisol® is an acid gas removal process independently developed by Lurgi and Linde. The first units were installed in the 1950's and over 150 plants have been built as of 2015; Review, modeling, Heat Integration, and improved schemes of Rectisol®-based processes for CO_2 capture (polimi.it). As a mature acid gas separation and conditioning technology that has been in commercial operation around the world since the 1950s, the scale up methodology for Rectisol® is not relevant for carbon capture. The Nutrien source consists of pure CO_2 and water vapour as a by-product of the current process and is currently being vented. It utilizes proven and widely used dehydration technology to condition the gas for pipeline transport. Dehydration and compression are proven commercial processes; there is no scale-up risk associated with this source. Dehydration technology is further discussed in Section 1.10.
- Compression equipment used at the CRUs and SCS uses proven, commercially available technology.
- CO_2 EOR and pipeline transport are well understood and has been utilized safely for decades in North America. In the continental U.S. alone, injecting CO_2 for EOR has been a successful practice for nearly 50 years. As of 2012, it is estimated that CO_2 EOR operations in North America have injected up to 65 million tonnes per year of CO_2 through more than 7,200 CO_2 injection wells. Cumulative CO_2 injection in the United States is estimated at 800 to 900 million tonnes and annual incremental production at over 128 million barrels (Bridging the gap: an analysis and comparison of legal and regulatory frameworks for CO_2-EOR and CO_2-CCS - Global CCS Institute).

As this project uses proven, commercially available technology there are no current or upcoming pilot projects where a comparison could be made to the performance of the technology chosen for the ACTL.

SECTION 2	TRANSPORTATION
Section 2.1	General Description of CO_2 Pipeline System Phases

Description: Describe the pipeline system; including the AER Baseline map (or equivalent) and description of the leak detection system. Identify who the owner of the pipeline system is and who is liable for operation and maintenance of the pipeline system.

Purpose: This information is relevant for industry and R&D to build competence in pipeline transportation of CO_2. Some of this information is also relevant for building public awareness on pipeline transport of CO_2.

Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Results from commissioning including: • material deviations and changes from detailed design • accidental events and damages to the pipeline system during operation shall be reported, including any leaks/spills • significant results and issues arising from maintenance shall be reported • results from inspection and non-routine repair shall be reported Description of fluid pressure management during commissioning and post-commissioning. As a part of the commissioning (filling of CO_2) the documentation made available shall include, but not be limited to: • commissioning volume, pressure, and temperature data Pipeline Integrity Plan Provide the monthly operations report of the transport system which shall as a minimum contain documentation regarding: • results and conclusions from the in-service inspections • accidental events and damages to the pipeline system • intervention, repair, and modifications • operational data (fluid composition, monthly flow rate, pressure, temperature)	

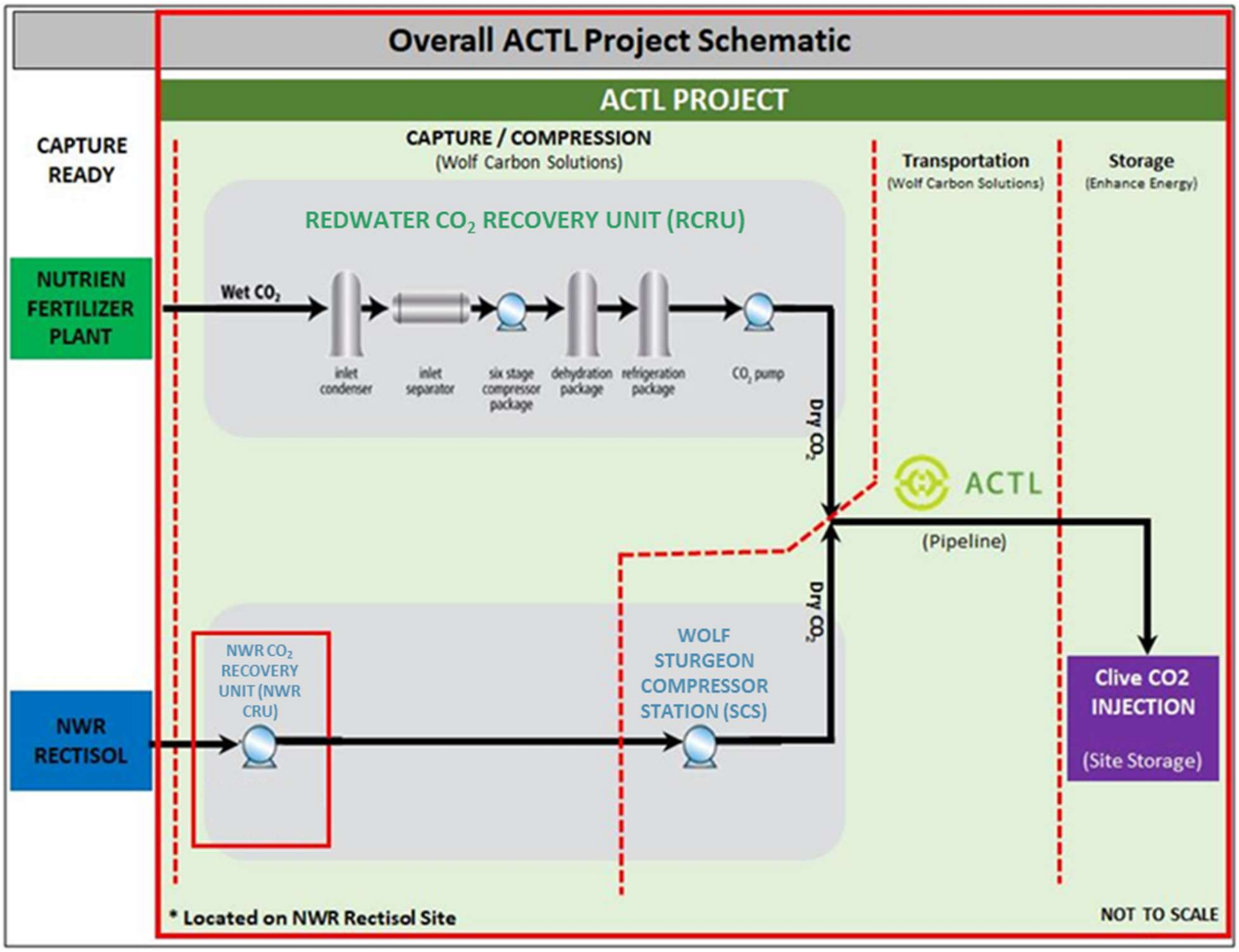


Figure 9- ACTL Project Schematic

2.1.1 Results of Commissioning Phase

There were no changes to results of commissioning as reported in previous knowledge sharing documents. Please refer to Section 2.1 of the 2020 detailed report.

2.1.2 Results of Operations Phase

The initial baseline internal inspection was completed on the 24” line from NWR CU to the SCS facility, no material anomalies were identified.

In parallel with the planned NWR turnaround in August 2022, WCS completed a turnaround of the SCS facility.

Following a full environmental survey of the ACTL right of way, WCS submitted a Post-Construction Reclamation Assessment (PRCA) to the AER as required under the Environmental Protection and Enhancement Act (EPEA) approval for the construction of ATCL.

In-service inspections on the ACTL include routine visual site inspections, ROW inspections for revegetation and natural hazards, maintenance oversight and health checks on the cathodic protection system. Routine inspections yielded no major concerns on the pipeline, though minor operational items were identified requiring correction or action (actuator soft seal replacement, actuator hydraulic fitting maintenance, weed control, snow removal).

2.1.3 Accidental events and damages to the pipeline system

RCRU, Fortis Transformer Inspection

- As part of a Fortis transformer inspection, certain internal components were identified as having a risk of failure. Internal components were required to be replaced to promote reliability. The components were secured in August and installed, restoring the reliability of the transformer. This finding was not unique to this facility. Fortis identified several customers that require the change of internal components.

RCRU Electric Motor failure on P411 C02 Pump

- An electric motor pump at RCRU was discovered to be damaged following an equipment vibration switch being triggered. The electric motor required repair, causing the site to be offline for approximately six days, and was subsequently reinstalled. The vibration switch was upgraded and replaced with an active monitoring transmitter to allow operations personnel to set warning alarms, shut down parameters, and trend output data, with the expectation that this process will increase the protection and reliability of the pump.

2.1.4 Intervention, repair, and modifications

SCS Neutral Ground Resistor Improvement (NGR)

- SCS experienced a power interruption in February. Further investigation discovered that the Fortis main power supply was disrupted from the line side. High voltage technicians investigated further to find the NGR cabinet had become wet inside. The cabinet is mounted outside of the MCC building. Blowing snow had entered the cabinet via the vents on the underside and side of the cabinets. Due to the configuration of resistor boards being mounted horizontal in the cabinet, the accumulated snow melted causing a short. The cabinet was dried and modified to prevent future issues.

SCS Pressure Safety Valve (PSV) Failure

- SCS experienced four PSVs failures over two separate start-up procedures. For approximately three days, SCS was taken offline for the removal, refurbishments, and reinstallation of the PSVs. It was determined that the PSV's failed due to improper calibration by the service vendor used, the PSV's were set well below the desired set point.

RCRU Compressor Electric Motor Over Heating

- In August, WCS operations observed a compressor surge at RCRU and the system was taken offline as a precautionary measure. Investigation revealed that the compressor's electric motor stator was overheating due to high ambient temperatures combined with increased production rates from Nutrien. WCS operations reduced the building temperature with additional venting and fans and restarted the system with no further issues.

RCRU Generator Fuel Line Leak

- WCS operations observed a fuel leak while performing inspections on the RCRU generator. The fuel return line to the fuel tank had cracked and produced a minor leak contained inside the engine compartment. The fuel line was upgraded to prevent any further issues.

ACTL Main Line Valve (MLV) 15 Pressure Switch Failure

- The Ledeen valve actuator pump motor at MLV 15 was found to be running and not building pressure. Investigation found hydraulic oil leaking from the high-pressure switch. The pressure switch was replaced with no further concern.

2.1.5 Operational data (fluid composition, monthly flow rate, pressure, temperature)

ACTL's monthly average inlet and outlet pressure and temperature are presented below.

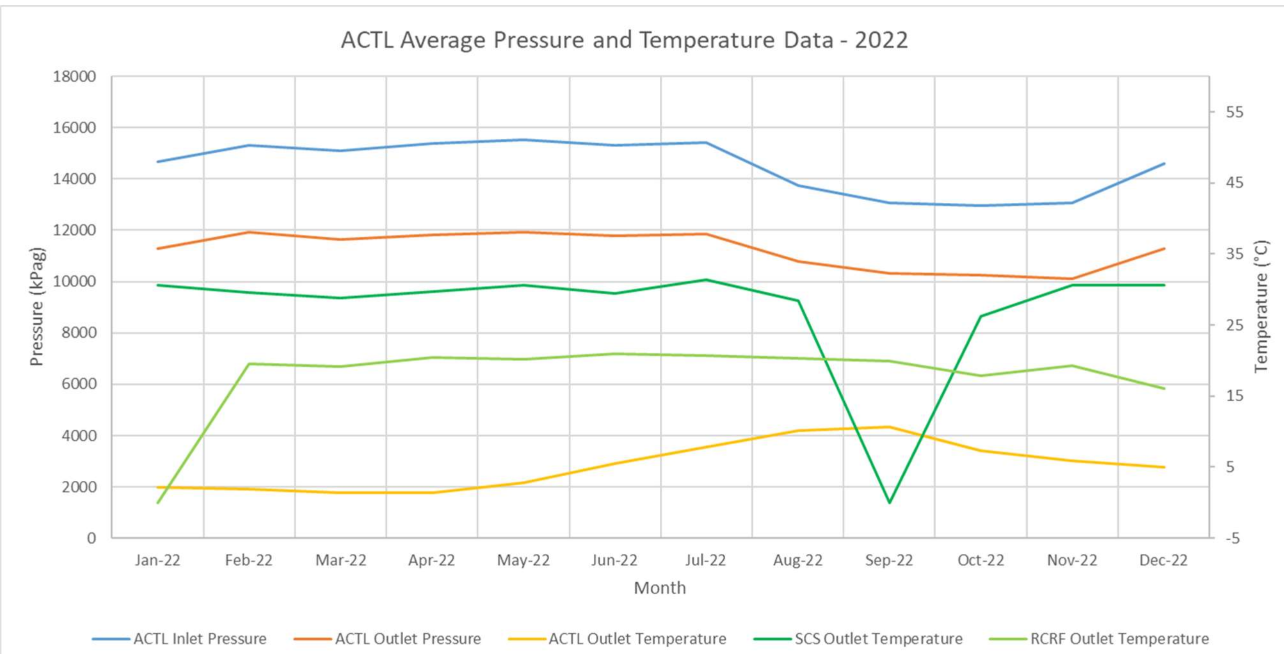


Figure 10- ACTL Pressure and Temperature

Monthly average deliveries of CO_2 to ACTL from NWR CRU-SCS and RCRU are presented below.

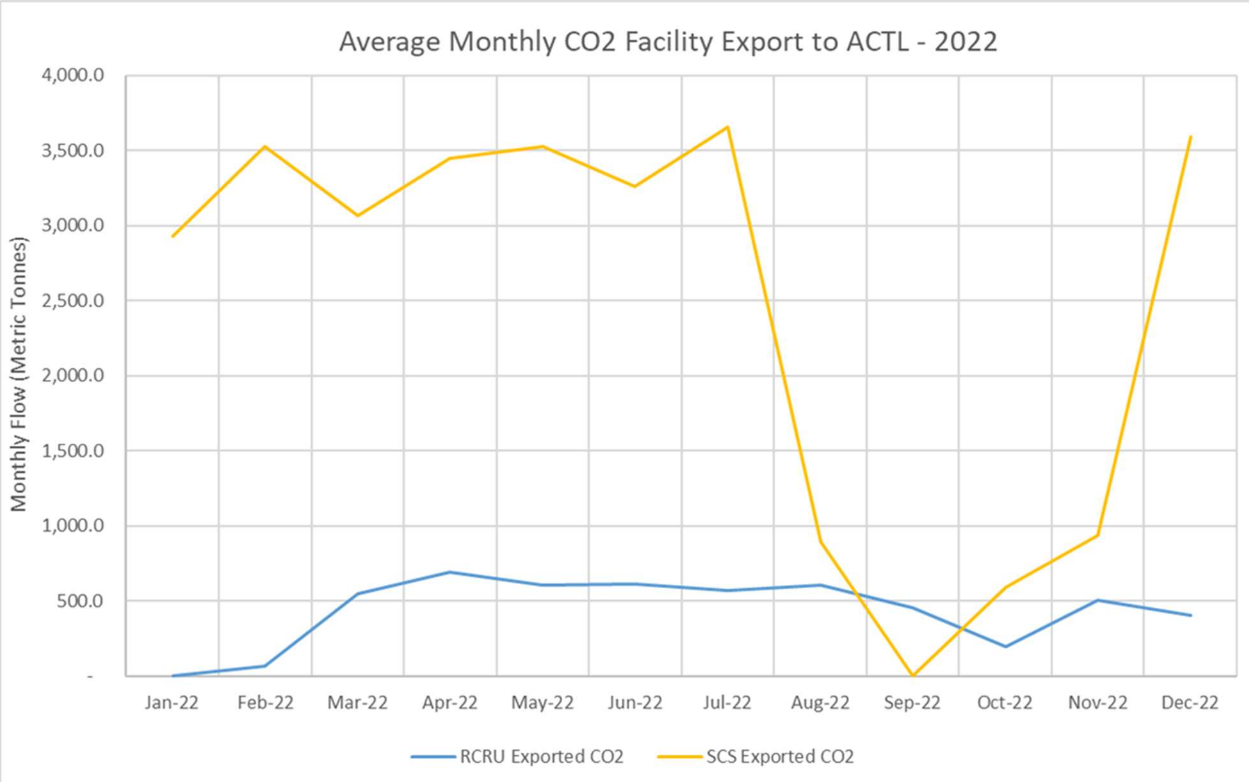


Figure 11- Deliveries to ACTL

Fluid composition is provided in other sections.

SECTION 2	TRANSPORTATION	
Section 2.2	**Capacity**	
Description:	Describe the capacity requirements for steady state and/or cyclic (known as transient operation for pipelines) depending on the operation of the plant and the chosen transport solution, and describe the design capacity, actual capacity and ultimate expansion capacity. - Start-up procedures - Design capacity vs. realized capacity	
Purpose:	This information is relevant for building competence in industry on pipeline transport of CO_2.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Reports on the deviations and changes from the detailed design (pipeline capacity) should include, but not be limited to, the following: - actual installed capacity of the pipeline - volumetric and mass flow rates realized - commissioning (filling of CO_2) - regular maintenance plans - inspection and repair	Design details Deviations from concept phase to basic design Changes in capacity during operation and/or after commissioning
Data Capture Frequency:	Daily/Monthly as appropriate	

2.2.1 Quantitative

2.2.1.1 Data Comparison

There were no changes to the deviations and changes from the detailed design to operations as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2020 detailed report.

Deliveries to Clive (adjusted for CO_2 content) averaged approximately 2835 tonnes/day in 2022 with a peak monthly mass of 129,772 tonnes in July. Equivalent volumes (converted at 1.861 kg/m3 per Alberta greenhouse gas quantification methodologies. Version 2 - Open Government) are 1.52 E6m3/d and 69.7 E6m3.

2.2.2 Emergency Response

There were no changes to the description of the Emergency Response as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

2.2.3 Management of Change (MOC)

There were no changes to the description of the MOC as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

2.2.4 Incident Investigation

There were no changes to the description of the Incident Investigation as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

2.2.5 Hazard Assessment and Control (Abnormal Operational Conditions)

There were no changes to the description of the Hazard Assessment and Control as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

2.2.6 Risk Assessment

There were no changes to the description of the Risk Assessment as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

2.2.7 Audit and Review

There were no changes to the Audit and Review as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

2.2.8 Pipeline Integrated Management System (PIMS)

There were no changes to the description of PIMS as reported in previous knowledge sharing documents. Please refer to Section 2.2 of the 2021 detailed report.

SECTION 2	TRANSPORTATION	
Section 2.3	Characteristics of Transported CO_2	
Description:	Characteristics of the transported CO_2 should be stated, since the characteristics may change because of integrated networks. In operational phase these characteristics should be monitored since this may change over time. The Project Plan anticipates an integrated network (*e.g.*, use as trunk line). The CO_2 composition from the different sources will be measured as part of the contracted inlet requirements. The specifications to enter the pipeline will be set by the trunk pipeline operator.	
Purpose:	This information is relevant for building competence in industry on pipeline transport of CO_2. This information is also relevant for other CCS or EOR projects in Alberta, mainly for planning purposes.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Deviations and changes from detailed design and changes in specifications or characteristics during operation and/or after commissioning. Annual reports on the following: commissioning (filling of CO_2) - operational plan - maintenance plans - inspections and repairs - If found to be applicable, impact of external conditions on CO_2 characteristics and impact to handling requirements throughout the year.	
Data Capture Frequency:	Daily (pressure, temperature and flow only) Annually (composition and operations report)	

2.3.1 CO_2 Specifications for the Pipeline

There were no changes to the CO_2 specifications for the Pipeline as reported in previous knowledge sharing documents. Please refer to Section 2.3 of the 2020 detailed report.

Analyses from monthly samples can be found in Appendix i. Monthly average deliveries and concentration of CO_2 from ACTL to Clive are shown in Section 3.8.1.

Anticipated annual average composition (% by volume or molar %) of the CO_2 stream (e.g., impurities) of the Nutrien CO_2 stream prior to processing in the case is shown below.

NWR CO_2 Stream		
MOLE FRACTION	**Units**	
H_2 (hydrogen)	(mol%)	0.322
CO (carbon monoxide)	(mol%)	0.083
CO_2 (carbon dioxide)	(mol%)	99.461
CH_4 (methane)	(mol%)	0.106
N_2 (nitrogen)	(mol%)	0.006
AR (argon)	(mol%)	0.005
CH_3OH (methanol)	(mol%)	0.016
H_2O (water)	(mol%)	0.000
H_2S (hydrogen sulfide)	(mol%)	0.000

Table 11- NWR CRU Design Gas Composition

Actual gas analyses from the SCS are available in Appendix I and are considered representative of NWR CRU inlet composition as there is no gas conditioning through these components.

Nutrien CO_2 Stream (before CRU processing)		
MOLE FRACTION VAPOUR PHASE	**Units**	**Percentage Value**
Vap. CO_2 (carbon dioxide)	%	37.72
Vap. H_2 (hydrogen)	%	0.29
Vap. N_2 (nitrogen)	%	0.11
Vap.H_2O (water)	%	61.88
Vap. $C_2H_6O_2$ (ethylene glycol)	%	0.00
Vap. NH_3 (ammonia)	%	0.00
Vapor Total	%	100.00

Table 12- RCRU Design Gas Composition

The general pipeline design parameters are based on a system that will transfer a product that is greater than 95% carbon dioxide, containing trace amounts of H_2S content smaller than 0.001 mol/kmol (<10ppm), and no other impurities.

2.3.2 Water Content

Water content of CO_2 entering the pipeline is not to exceed 10 lbs/mmscfd. CO_2 which registers a water content in excess of this value is indicative of a process deviation, and therefore the CO_2 is directed to vent until the deviation is resolved.

The pipeline system has a CO_2 specification and minimum CO_2 delivery pressure for all supply volumes. Thus, there are neither material fluctuations of composition over time, nor changes in operational process due to several sources. Also, since there are no pump stations in the current design, considerations surrounding changes to the CO_2 as it passes through pump stations is not applicable to the project.

2.3.3 Fluctuations of Composition

Composition of the CO_2 varies over time due to new sources or changes in operational process. Average composition data for the commingled CO_2 stream at the southern delivery point of ACTL is shown below.

Analyses of samples taken from the Nutrien and NWR sources are included in Appendix i.

Venting infrastructure is utilized primarily during operating maintenance activities and during start-up. Such vents are located prior to the pipeline tie-in and at various valve stations along the pipeline. There have been no specification deviation events that have resulted in product venting.

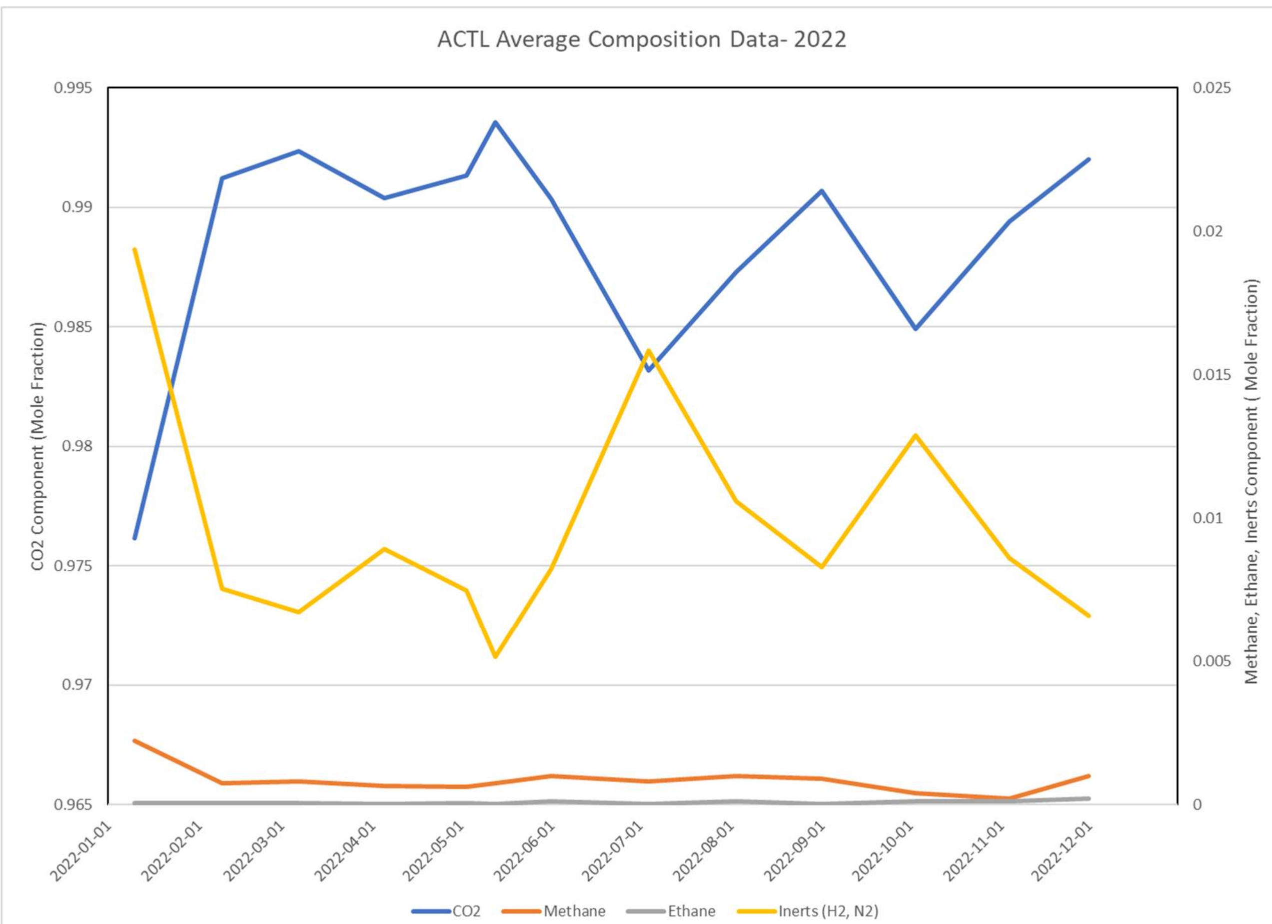


Figure 12 ACTL Gas Composition

2.3.4 Changes Through Pump Stations

There is no anticipation of changes in stream characteristics due to passage through pump stations. There are no pump stations in operation at this time.

2.3.5 Additives or Additional Chemicals

There are no additives or other chemicals used at this time.

2.3.6 Miscellaneous

There are no changes to detailed design or project specifications from the 2021 report. Commissioning, operations, maintenance, and inspection details are outlined in Sections 2.1 and 2.2 of the 2021 detailed report.

There is extensive discussion in Section 2.2 of the operational, maintenance, inspection and repair plans. These plans were informed by both the detailed design and as-built condition of the project. There are no material deviations to report between the two phases. The major components of this framework have been established following a plan-do-check-act and continuous improvement philosophy in accordance with the regulatory requirements of ACTL's governing bodies.

The Management of Change (MOC) procedure that will be followed should any changes to these plans be required is outlined in Section 2.2.3.

SECTION 2	TRANSPORTATION		
Section 2.4	Emissions from Transportation		
Description:	Describe fugitives and fuel emissions during transportation. This is required to determine the total system emissions reduction. **Purpose**: This allows sharing of data with industry for benchmarking purposes.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Based on operational data, estimate the fugitives and fuel emissions during transportation. Calculated CO_2 emissions (tonnes).		
Data Capture Frequency:	Monthly averages		

Emissions associated with transportation are largely attributable to power and natural gas use at the SCS. There are also minor amounts of emissions associated with fuel use by pipeline operators and power use for instrumentation at valve stations. WCS Operators conduct bi-weekly checks at all ACTL valve sites. Minor fittings required tightening through commissioning and no material fugitive emission sources have been detected through operations.

The majority of CO_2e emissions at the Sturgeon Compressor Station are attributable to power use, largely for compression. There is some minor natural gas use for process heat during startup in cold weather conditions.

Actual 2022 CO_2e emissions at the Sturgeon Compressor Station are shown below.

Breakdown of Sturgeon Compressor Station CO_2e by Produced Gas Type and Input Use						
Produced Gas	**Natural Gas Use tCO_2e**	**Gasoline Use tCO_2e**	**Diesel Use tCO_2e**	**Power Use tCO_2e**	**Misc- all to CO_2 tCO_2e**	**Total**
CO_2	1.1			28,831		28,832
CH4	0.1					0.1
N2O	0.0					0.0
TOTAL	1.2	0.0	0.0	28,831	0.0	28,832

Table 13- SCS 2022 CO_2e Emissions

Monthly data can be found in Appendix iii.

The majority of CO_2e emissions for the remainder of the ACTL are from fuel use by operators to maintain and monitor the pipeline route and valve stations. There is some minor power use for instrumentation at the valve stations. Fugitive Emissions from Transportation are estimated to be close to zero.

Actual 2022 CO_2e emissions from the ACTL pipeline are shown below.

Breakdown of ACTL Misc CO_2e by Produced Gas Type and Input Use						
Produced Gas	**Natural Gas Use tCO_2e**	**Gasoline Use tCO_2e**	**Diesel Use tCO_2e**	**Power Use tCO_2e**	**Misc- all to CO_2 tCO_2e**	**Total**
CO_2	0.0	59.6	0.0	21.7		81.3
CH4	0.0	6.7	0.0			6.7
N2O	0.0	0.2	0.0			0.2
TOTAL	0.0	66.4	0.0	21.7	0.0	88.2

Table 14- ACTL Misc. 2022 CO_2e Emissions
** Gasoline use for fleet vehicles for WCS*

Monthly data can be found in Appendix iii.

SECTION 2	TRANSPORTATION	
Section 2.5	**Energy Consumption**	
Description:	Describe the energy used during the transportation. This data is used to align with the requirements of the capture portion.	
Purpose:	This allows for the sharing of data within industry for benchmarking purposes.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Based on operation the energy used during transportation should be described. This data is used to align with the requirements of the capture portion. In the case that pump stations are necessary, the energy for these stations should be included. Report actual or calculated energy consumption.	Benchmarking estimate
Data Capture Frequency:	Monthly average	

There are no intermediary pump stations installed or planned at this time; there is no material energy consumption to report.

Energy use for SCS and ACTL in 2022 are summarized below. All inputs have been converted to GJ equivalent. Note that ACTL throughput here is based on delivery at Clive and will not match the sum of the RCRU and NWR CRU-SCS throughput due to the highly compressible nature of CO_2 in the pipeline creating variable amounts of pipeline storage.

STURGEON COMP STN			**ACTL MISC**				
POWER	**NATURAL GAS**	**TOTAL**	**POWER**	**NATURAL GAS**	**GASOLINE**	**DIESEL**	**TOTAL**
MW-hrs	**GJ**		**MW-hrs**	**GJ**	**litres**	**litres**	
50,581	22		38	0	24,357	0	
GJ	**GJ**	**GJ**	**GJ**	**GJ**	**GJ**	**GJ**	**GJ**
182,090	22	182,112	137	0	833	0	970
Tonnes throughput		**886,290**	**Tonnes throughput**				**1,034,722**
MJ/kg		**0.21**	**MJ/kg**				**0.00**

Table 15- SCS and ACTL Misc. Energy Consumption
** Gasoline use for fleet vehicles for WCS*

Monthly data can be found in Appendix iii.

SECTION 2	TRANSPORTATION		
Section 2.6	**Integrity Management Plan**		
Description:	In order to competently manage integrity and safety aspects of the pipeline system, the pipeline will be regularly monitored and inspected. Describe the integrity management plan of the pipeline prior to start-up and during operation		
Purpose:	This information is relevant for building competence in industry on pipeline transport of CO_2.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Describe any material updates to the programs above and any issues/incidents that occur during the commissioning and operation. Results from the integrity management process.		
Data Capture Frequency:	N/A		

Integrity management process (risk assessment, inspection, maintenance programs, monitoring, testing, mitigations, interventions, repairs, contingency plans, etc.)

A full-scale operations maintenance and integrity management system, including risk assessment, inspection and maintenance programs, testing guidelines, management of change processes, and standard operating procedures has been developed by WCS following a plan-do-check-act methodology. It is discussed in Section 2.2.

Details of pipeline inspection, emergency response plans, WCS policy on pipeline safety and maintenance and operational controls and procedures can be found in the 2020 detailed report.

SECTION 3	STORAGE		
Section 3.1	**Screening Criteria**		
Description:	List the specific criteria used for evaluating potential Storage Sites.		
Purpose:	This knowledge allows for industry and R&D capacity-building within methodologies for screening of storage sites. This is important information in developing methodologies for screening potential storage sites.		
Reporting Requirements:		**Quantitative Data/Information**	**Qualitative Knowledge**
Data Capture Frequency:		Annually and updated as necessary	

Screening criteria used for selection of the Clive reservoirs for CO_2 EOR and storage are reported in Section 3.1 of the 2019 detailed and previous knowledge sharing reports.

SECTION 3	STORAGE		
Section 3.2	**Methodology for Calculating Capacity**		
Description:	Describe the methodology for estimating storage capacity.		
Purpose:	This knowledge allows for industry and R&D capacity-building within methodology for screening of storage sites. This is important information in developing methodologies for screening potential storage sites.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Estimated remaining capacity. Explanation/rationale for any changes to the method used to estimate capacity. Simulation validation and discussion of simulation conformance.		
Data Capture Frequency:	N/A		

3.2.1 Capacity Calculated

There have been no changes to the calculated storage capacity of the Clive reservoirs during 2022. Enhance calculated a range of storage capacity in Section 3.2 of the 2019 and previous detailed reports as follows:

Replacement of produced oil in the Clive reservoir with CO_2 = 8.9 MT CO_2
Replacement of produced gas in the Clive reservoir with CO_2 = 3.5 MT CO_2

The total CO_2 storage capacity at Clive due to replacement of produced oil and gas is 12.4 MT.

If the current pressure of the Clive reservoir of 1,813 psig is increased to its original discovery pressure of 2,407 psig, the density of CO_2 increases from 382 kg/m3 to 579 kg/m3, or an increase of 51.6%. Thus, the CO_2 storage capacity of Clive is increased from 12.4 MT to 18.8 MT.

Enhance injected 1,034,722 tonnes of CO_2 at Clive in 2022. Added to the amounts injected in 2020 and 2021, remaining storage capacity through replacement of produced oil and gas would therefore be approximately 9.2 MT of CO_2. If the reservoir pressure can be increased to discovery pressure, remaining storage would be 15.6 MT.

During 2022 Enhance continued to introduce further refinements to the geomodelling techniques used in characterizing the Clive Leduc reservoir and its hydraulic connection to the Bashaw platform. Enhance Energy built a much larger simulation model to manage the project's expansion Northward and to accurately capture the CO2 plumes movement and storage in the reservoir.

The movement of CO2 in the reservoir was as expected (Figure 13).

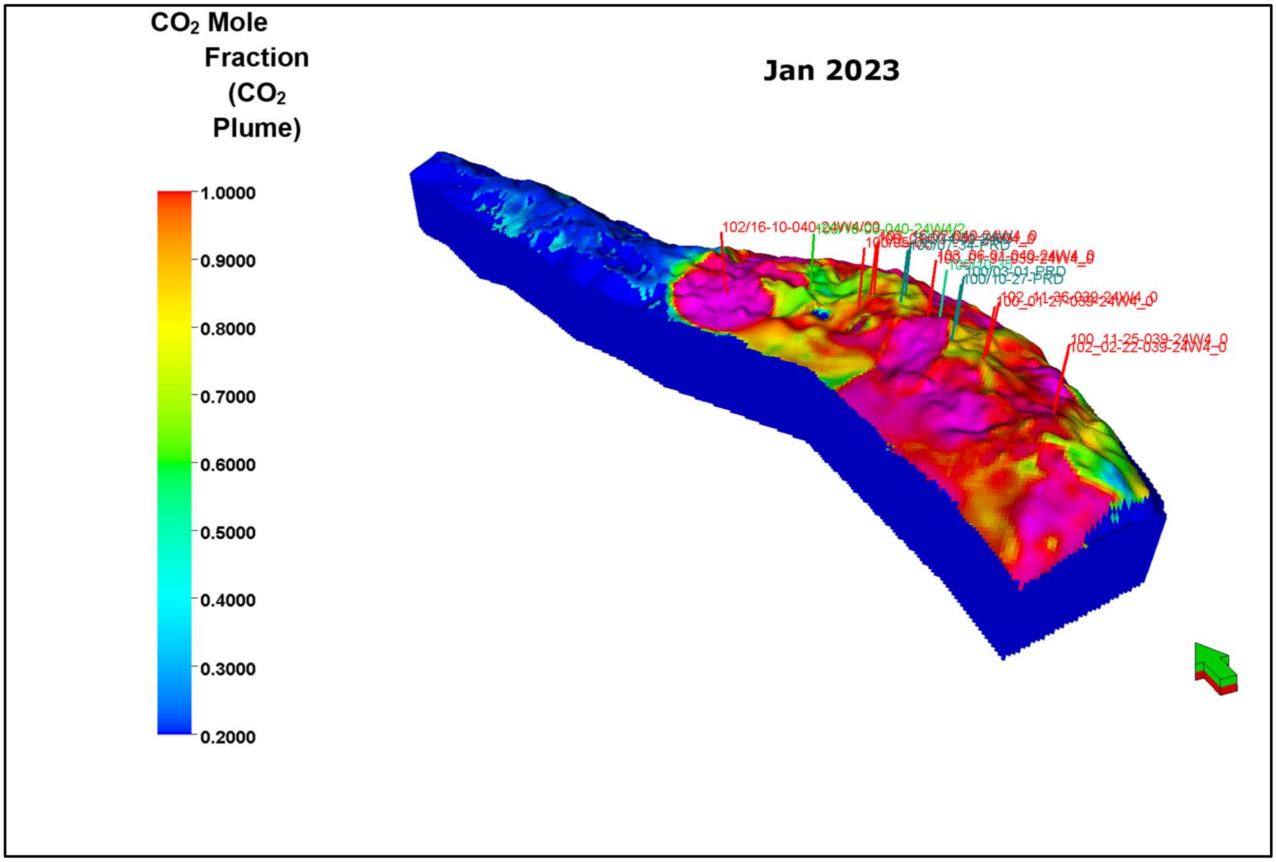


Figure 13- CO2 Distribution

A graphical depiction of the simulation models Average Reservoir Pressure is in Figure 14 below. Pressure propagates almost uniformly across the reservoir boundary, which confirms the high deliverability of the Leduc formation in the Clive field. The 2019 prediction shows good correlation with the updated model providing confidence that CO_2 is contained in the Leduc.

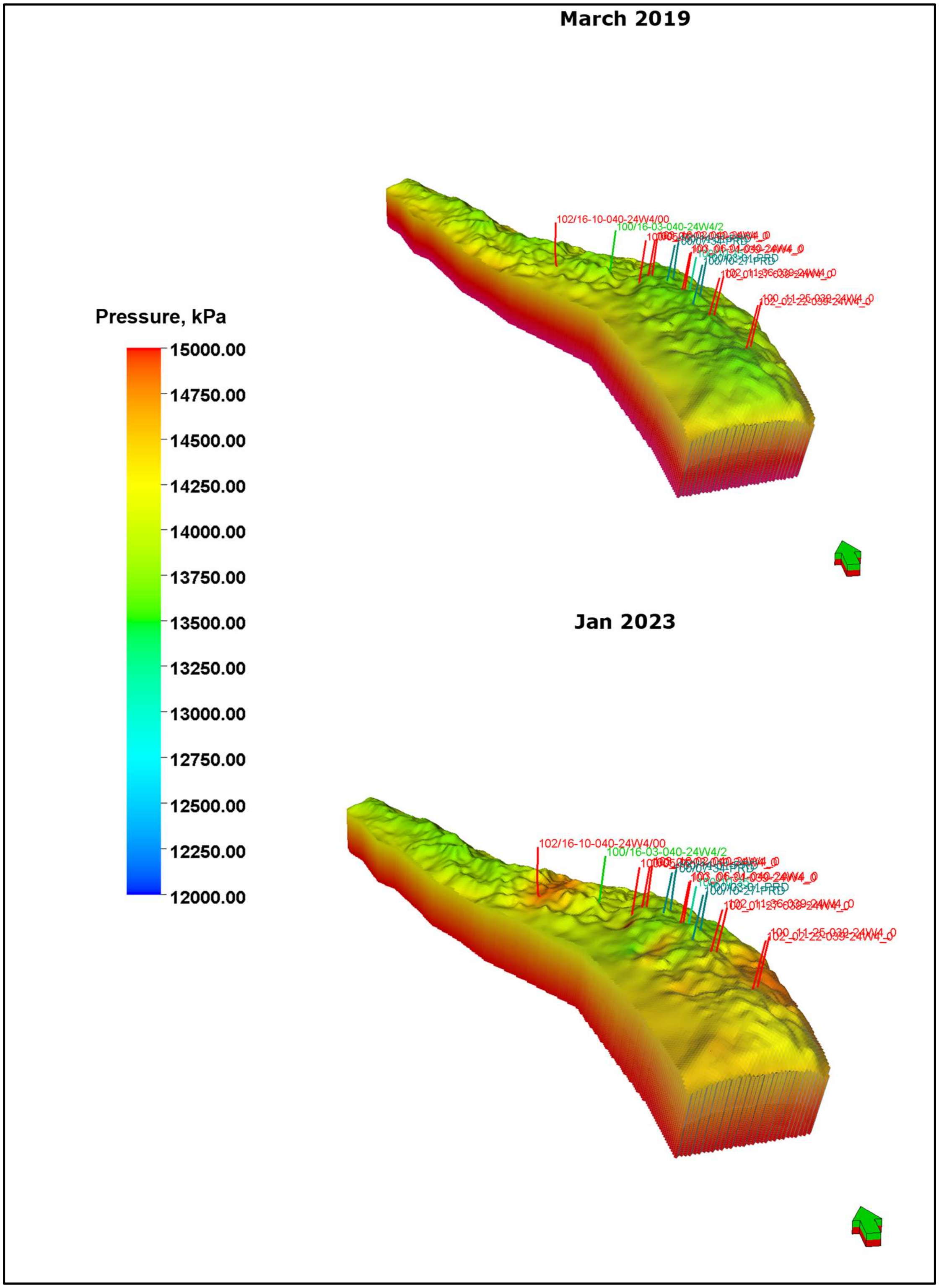


Figure 14 2019 vs 2023 Reservoir Pressure

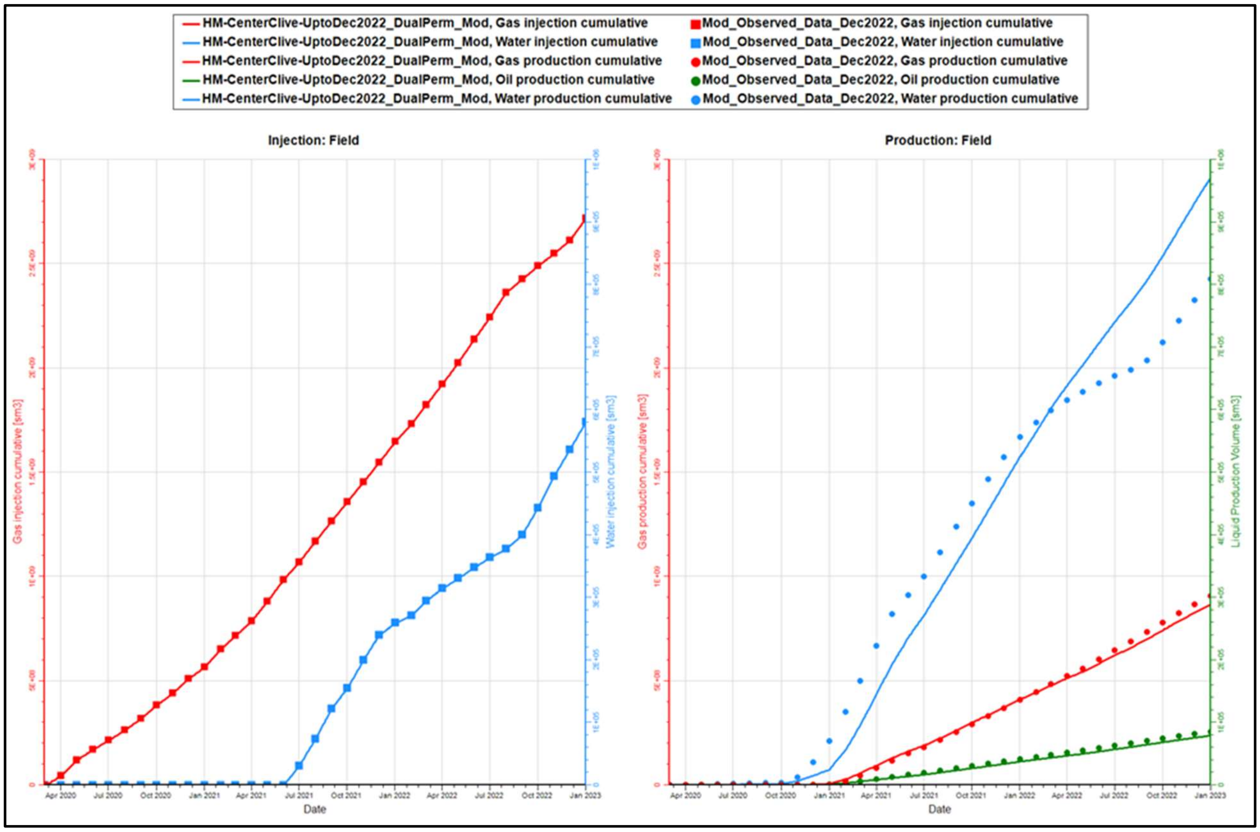


Figure 15 History Match of Injection and Production

A history match of the 2022 Simulation Study (Figure 15) shows close agreement with field production and injection history based on injection and production cumulative volumes providing confidence for continued use of reservoir simulation as one of the methods used in the MMV program.

SECTION 3	STORAGE		
Section 3.3	**Storage Sites Selection**		
Description:	Comparison of the selected storage site to the selection criteria described in Sections 3.1 above. A justification for the candidate selection should be given.		
Purpose:	This information allows for industry and R&D capacity-building within methodology for screening of storage sites.		
Reporting Requirements:		**Quantitative**	**Qualitative**
		Data/Information	**Knowledge**

Criteria used for selection of the Clive reservoirs as a storage site are reported in Section 3.3 of the 2019 and previous detailed knowledge sharing reports.

SECTION 3	STORAGE		
Section 3.4	Screening and Characterization Results		
Description:	Site specific data collected to finalize selection of storage site. If applicable, describe the exploration activities performed at the selected storage sites along with a discussion as to their purpose, and provide the results of these activities. These activities include data acquisition and interpretation as well as modelling.		
Purpose:	This information provides for industry and R&D capacity-building within methodologies for screening of storage sites. Access to data from storage projects is useful for R&D purposes and other analysis. This information is also relevant to stakeholders (local communities, NGOs). In describing the geological storage site, this data is of general interest.		
Reporting Requirements	**Quantitative Data/Information**	**Qualitative Knowledge**	

The extensive screening and characterization used in selection of the Clive reservoirs for CO_2 EOR and storage are reported in the 2019 and previous knowledge sharing reports.

Additional studies were undertaken in 2020 and early 2021 to address the potential for CO_2 injection to cause stress changes that could cause tensile fracturing in the reservoir or cap rock and are reported in Section 3.4 of the 2020 detailed report.

SECTION 3	STORAGE		
Section 3.5	Baseline Monitoring Results for Shallow Groundwater Aquifers, Soil and Air		
Description:	These measurements provide a reference that future measurements can be compared against. Description of the monitoring method. The monitoring techniques potentially include: - surface gas fluxes and chemical/isotopic composition - soil gas flux and chemical/isotopic composition - ecosystem surveys - groundwater quality (chemical and isotopic composition) - atmospheric quality and composition There are a number of "shallow" geophysical and other techniques that may be appropriate. Depending on the location or season, not all monitoring methodologies may be possible. The selection of measurement techniques are made as part of the MMV process described in 3.11. They may be made in conjunction with the deep baseline measurements. These measurements are made prior to and independently of the monitoring activities described in 3.12.		
Purpose:	This is an essential baseline for measuring any changes in the local environment from CO_2 storage and is important in building confidence in CO_2 storage as safe and without (major) negative effects locally.		
Reporting Requirements:		**Quantitative Data/Information**	**Qualitative Knowledge**

3.5.1 Quantitative

Baseline activities for the current CO_2-EOR and storage area were undertaken in 2019 and reported in the 2019 knowledge sharing reports. Due to delays injecting CO_2 and the relatively small volumes injected in the first half of 2020, some of the 2020 program should also be considered as baseline as it is unlikely to have been influenced by the CO_2 injection. The 2020 program is discussed in the 2020 knowledge sharing report.

Enhance executed an expanded baseline and monitoring data collection program in 2022 in anticipation of expanding the CO_2-EOR and storage area.

Figure 16 (reproduced from the MMV report, Appendix v) depicts soil gas sample points in the 2019-2020 program, new sites added in 2021 and the one temporary site sampled in 2022. Figure 17 (same source) shows groundwater monitoring points in the 2022 program.

Details of the baseline results from the expanded areas and ongoing monitoring of the current MMV area are discussed in Appendix v.

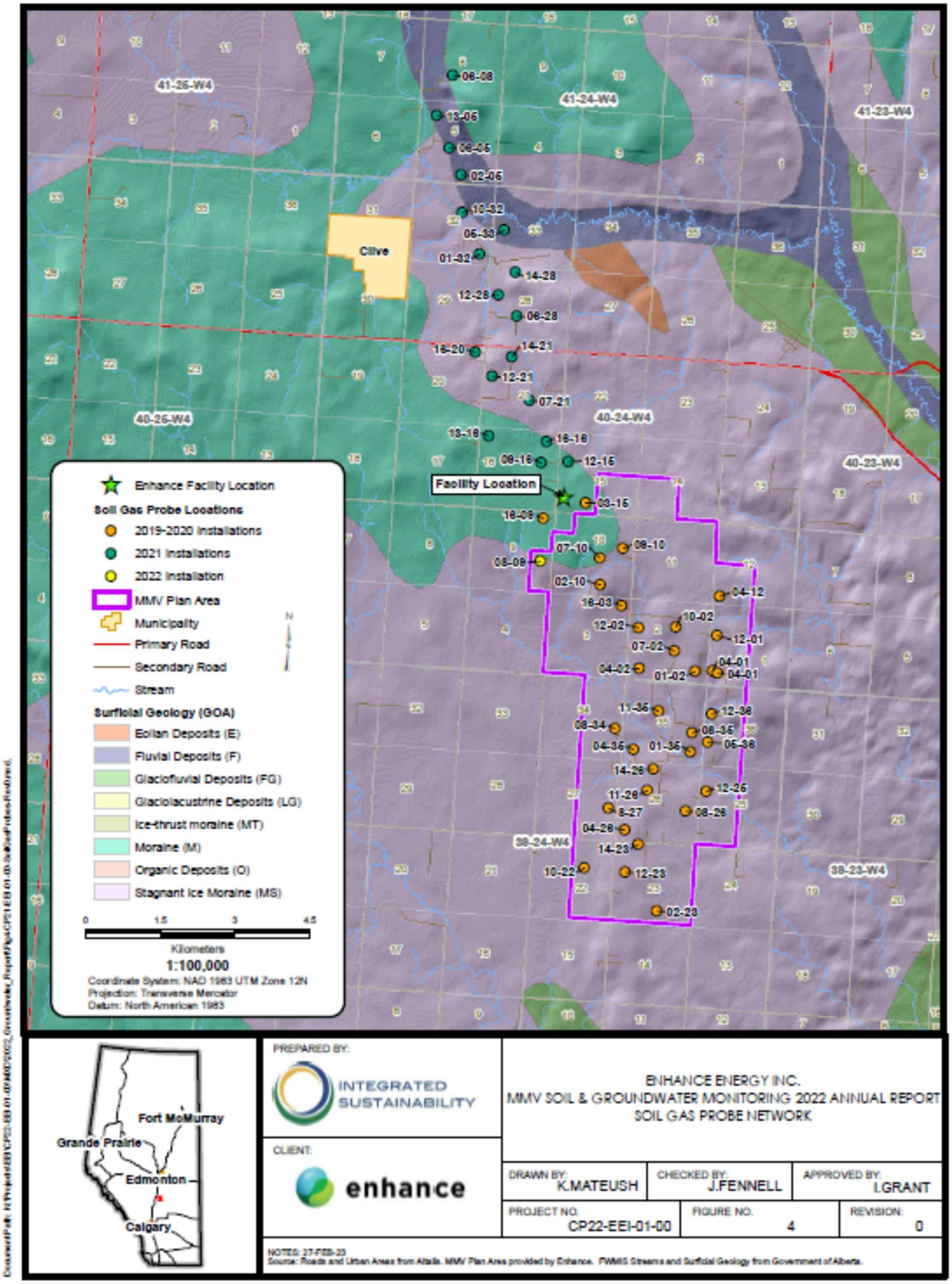


Figure 16 Expanded Soil Gas Sampling Area

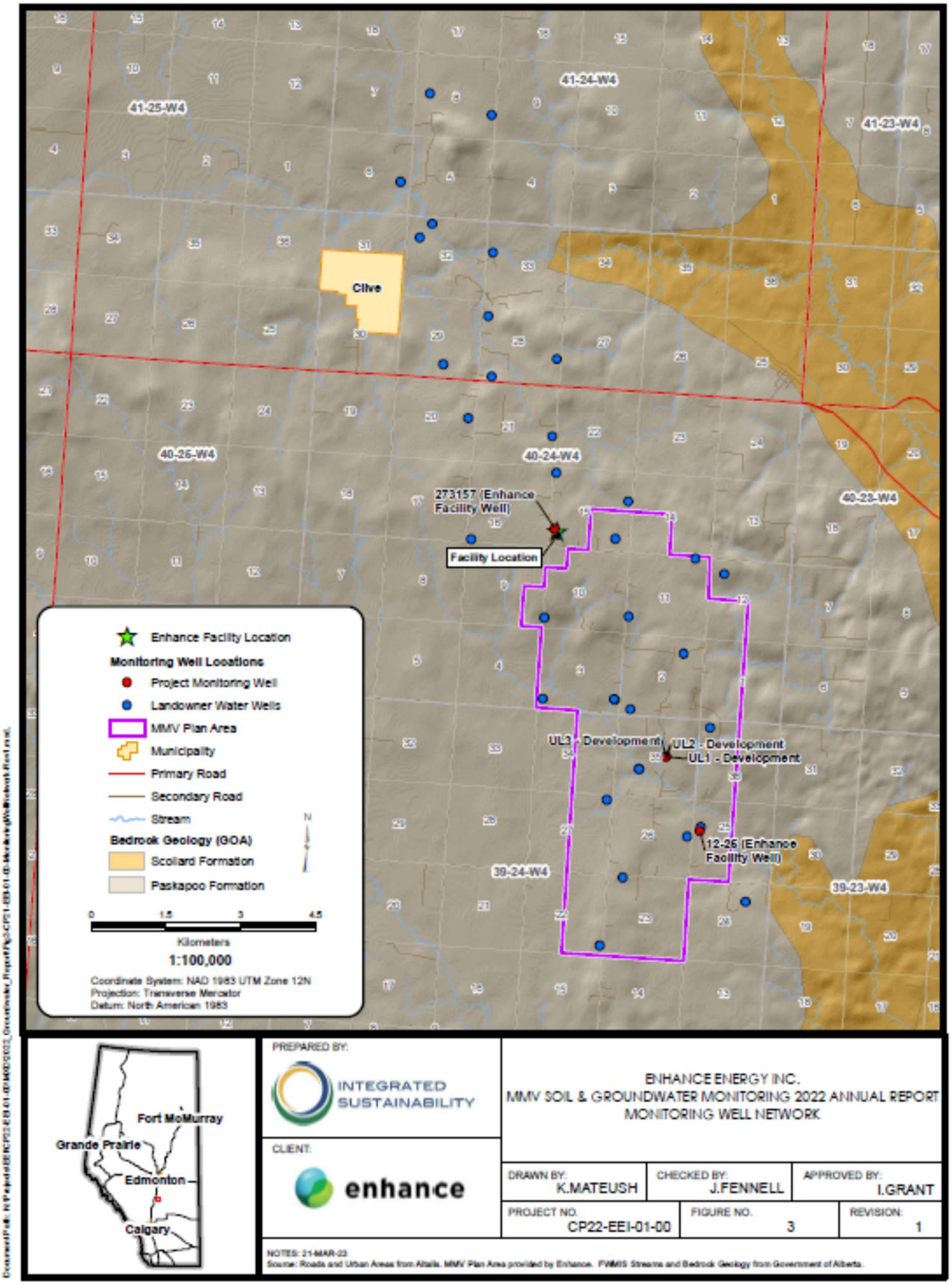


Figure 17- Expanded Groundwater Sampling Area

SECTION 3	STORAGE	
Section 3.6	Baseline Monitoring Results for the Injection Horizon	
Description:	These measurements provide a reference that future measurements can be compared against. There are four primary suites of measurements: (1) Pressure (and temperature); (2) fluid (water and gas/oil if present) composition; (3) surface imaging (different geophysical methods); and (4) well based imaging (RST, bond logs, etc.). Depending on the monitoring method, a full suite of chemical (mass and/or fraction) and isotopic measurements may be required. Depending on the specific geological structures, aquifers below the injection horizon may have to be sampled/imaged. Under certain circumstances, lateral variation of the data may have to be established. CCS activities include data acquisition and interpretation as well as modelling. Examples of results are: a) geology/ geophysics/geomechanics/petrophysics/geochemistry/ microbiology b) simulation of pressure front migration c) use of analogue data d) interpretation of monitoring data Depending on the location or season, not all monitoring methods may be possible or cost effective. The selection of measurement techniques are made as part of the MMV process described in 3.11	
Purpose:	This is another essential baseline for measuring injected volume/mass/location of CO_2 in the injection formation. It is important for verification to establish carbon credits or something similar. It is also an essential baseline for measuring any changes in the surrounding environment from CO_2 storage. This is important in building confidence in CO_2 storage as safe and without (major) negative effects locally.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**

Baseline monitoring of the injection horizons has been extensively discussed in Section 3.6 of the 2019 and previous detailed knowledge sharing reports. The 2019 report includes the MMV plan for the project that includes an extensive discussion of the geological suitability of the Clive reservoirs for CO_2 storage, risk analyses and program design.

SECTION 3	STORAGE		
Section 3.7	Injectivity and Draw Down Tests		
Description:	Provide well test description and interpretation.		
Purpose:	Industry and R&D competence-building within methodologies for characterizing storage sites is aided by this information. Access to data from storage projects is useful for R&D purposes.		
Reporting Requirements:		**Quantitative Data/Information**	**Qualitative Knowledge**

The Clive reservoirs are not an exploration activity but mature producing oil reservoirs with over 50 years of pressure and production history including over 300 wellbore events. These reservoirs are extremely well understood from a geological and engineering perspective and are discussed in Section 3.7 of the 2019 and previous detailed knowledge sharing reports.

SECTION 3	STORAGE		
Section 3.8	Planned Injection Stream Composition		
Description:	Identify the planned and observed stream composition of the injection stream of CO_2. Assess the risks associated with the impurities identified and the methods to avoid adverse effects of the impurities. Record the evolution of the identified significant risks along with corresponding safeguards as the monitoring activities progresses. Also record the impact of identified risks on the MMV plan in 3.11.		
Purpose:	The composition is relevant to the public in order to know what is being stored in the reservoir and for R&D/industry to understand reservoir behaviour and selection of materials in wells.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Actual injection stream content: - calculated composition - measured mass flow Identify and describe any deviations from the initial assessments from the screening and characterization phase.	Summary report with assessments and lessons learned Summary of risk assessment including ranking of risks and associated uncertainties	
Data Capture Frequency:	Monthly		

3.8.1 Quantitative

3.8.1.1 Injection Stream

The volume of gas injected at Clive is directly measured by an orifice meter at the header of the injection wells (the delivery meter) prior to tie in point of the recycle CO_2 stream. Recycle CO_2 volume is measured by the recycle meter and is not included in project volumes. The total volume of fresh CO_2 delivered to all CO_2 injection wells is taken as one measurement at the CO_2 delivery meter. An orifice meter provides continuous measurement of this data parameter.

The CO_2 concentration in the fresh CO_2 received at Clive is measured by a CO_2 analyzer at the inlet header system of the injection wells prior to the tie in point of the recycle CO_2 stream. The analyzer is installed immediately downstream of the delivery meter. The CO_2 concentration represents the CO_2 concentration of the comingled capture streams from NWR and Nutrien and does not include the recycled CO_2 stream. The CO_2 analyzer provides continuous inline monitoring of the concentration of fresh CO_2 being injected. A sample of gas is removed from the center of the pipeline using a sample probe. It is then reduced in pressure and conditioned prior to entering the CO_2 analyzer. The analyzer is a Servomex SpectraExact 2500 analyzer using infrared analysis technology and provides an output of percentage CO_2 on a volumetric basis. The process for calculating the net CO_2 is as follows:

- Net CO_2 is calculated every 15 minutes
- The local remote terminal unit (RTU) calculates the gross accumulated volume at the delivery meter over the previous 15 minutes.
- The 15-minute gross accumulated volume is multiplied by the CO_2 concentration taken from the analyzer when the calculation is completed to generate a 15-minute net accumulated volume.

- The net 15-minute volumes are summed over the course of the day to provide a daily total net CO_2 at the delivery meter.
- The volumes are converted to mass in the Enhance reporting system by multiplying times the density of CO_2 at standard temperature and pressure.

Analyzer CO_2 concentrations are checked against monthly grab samples taken at the delivery meter and analyzed at an accredited commercial laboratory. Analyses from the composite stream at Clive and from each CO_2 source (Nutrien and NWR) are included in Appendix i. These analyses are within specified ranges for delivery to the ACTL and injection at Clive. The grab samples, taken at a point in time at Clive do not precisely match the weighted average CO_2 calculation over a month and are used as a check against gross malfunction of the analyzer. Results are within expected ranges.

The calendar day average rate of fresh CO_2 injection in 2022 was over 2800 tonnes/day at an average concentration of 99.1%. The recycle compressor at Clive was commissioned in February 2021 allowing all production wells to be brought online. The DEXPRO™ unit (a proprietary dehydration technology) was commissioned concurrently to remove water vapour from the recycle gas. Recycle averaged 2300 tonnes/day at 88.0% CO_2. See Figures 18-20 that show fresh CO_2 injection rate and concentration, recycle CO_2 injection rate and concentration and total injection rate, respectively. Month-by-month data is tabulated in Appendix vi.

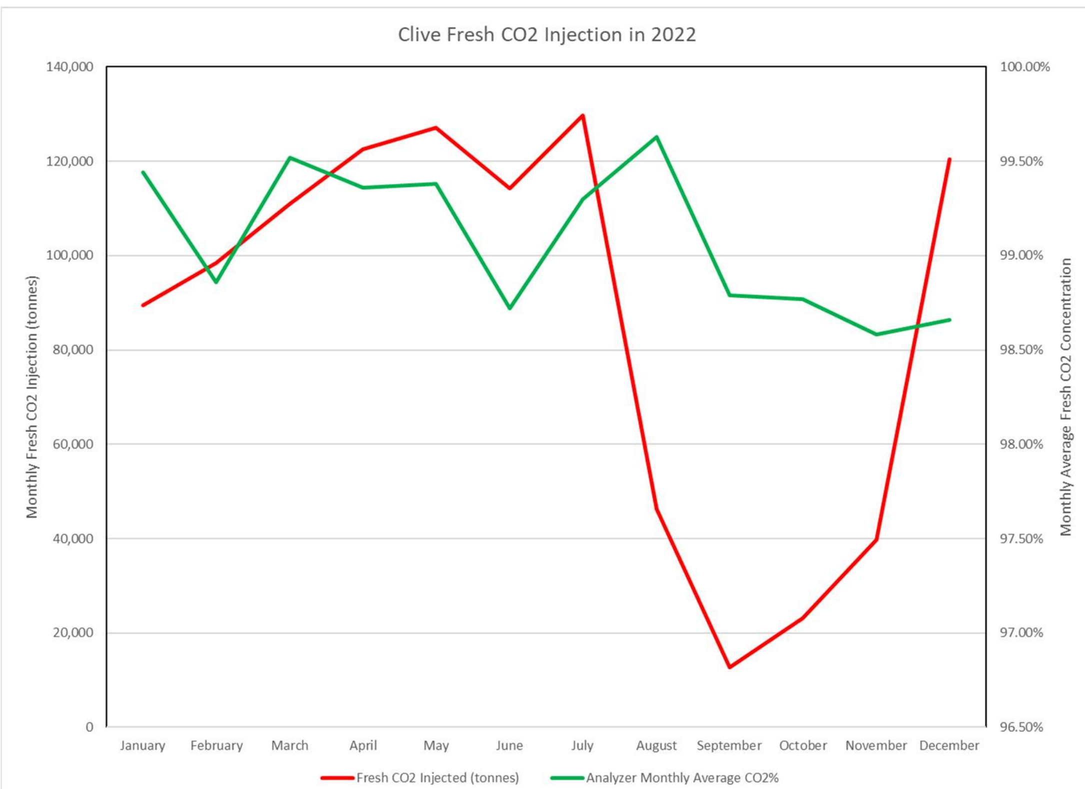


Figure 18 Clive Fresh CO_2 Injection

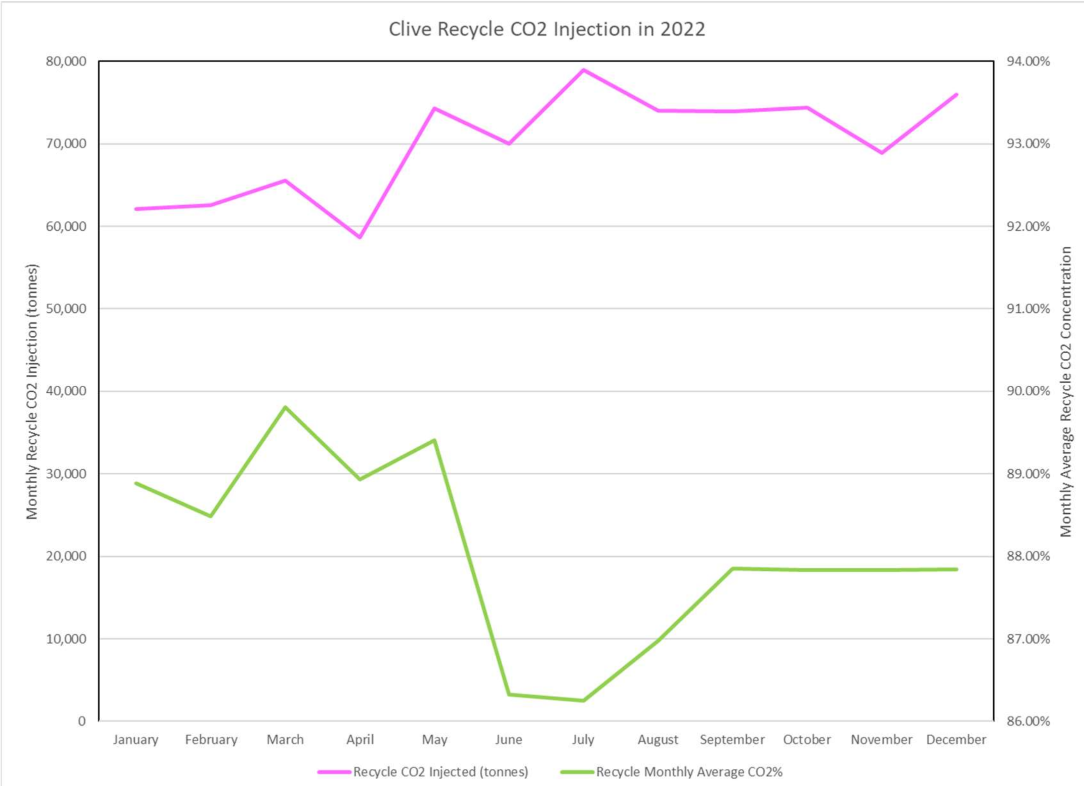


Figure 19 Clive Recycle CO_2 Injection

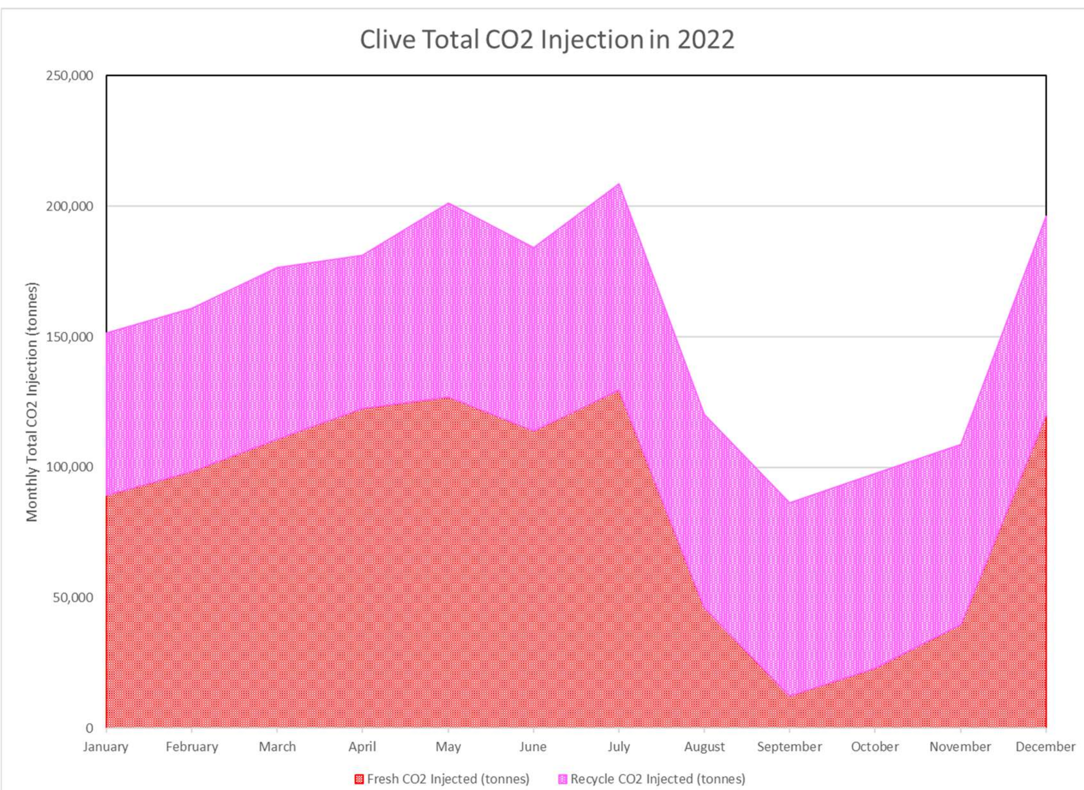


Figure 20 Clive Total CO_2 Injection

3.8.2 Qualitative

As the CO_2 delivered has met or exceeded delivery specifications, there are no material risks to report. The CRU's functioned as expected in 2022.

SECTION 3	STORAGE		
Section 3.9	**Risk Assessment and Safeguard Plans**		
Description:	Provide a report covering the conclusions of the risk assessment and describe the action plans for dealing with undesirable events (based on the risk assessment).		
Purpose:	By sharing experiences regarding risks and uncertainties of a geological storage site, industry and R&D competency in characterizing storage sites is increased. The conclusions from risk assessments are important in building public awareness and confidence in geological storage of CO_2. Sharing these experiences developing safeguard plans with other project developers, R&D and other stakeholders is beneficial to current and future CCS projects. This information also helps build confidence among stakeholders, but these plans have to be communicated carefully to the public to avoid misinterpretation.		
Reporting Requirements:		**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:		Updates to MMV Risk Assessment. Describe actual corrective and/or preventive measures employed (mitigation and remediation), if applicable.	

Enhance conducted extensive risk assessment work prior to beginning CO_2 injection that has been reported in 2019 and prior years. There were no trigger events recorded in 2022 and, therefore, there have been no updates to these risk assessments.

SECTION 3 STORAGE		
Section 3.10 Storage Site Operation and CO_2 Injection		
Description:	Provide information regarding planned injection rates, volumes, operating strategy, HSE and pressure management.	
Purpose:	This information allows for industry and R&D competence-building within development of a geological storage site. Additionally, information of general interest to R&D and industry as part of competence-building on geological storage of CO_2 is also shared. Openness on what is being injected is essential in building confidence for geological storage of CO_2.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual injection in total and per well: - total rates - total volumes - rates and volumes per injection well - reservoir pressure - pressure at the well head - well-specific injection activity	Report describing operating strategy, HSE, pressure management
Data Capture Frequency:	Monthly	

3.10.1 Quantitative

3.10.1.1 Well-Specific Injection Activity

Volumes, injection hours and average wellhead pressures of CO_2 injected are reported on a monthly basis in Appendix vi. Wellhead pressures are generally in the range of +/- 9500-9800 kPa which is within the expected range. The injection wells are fitted with orifice meters to measure injected volumes which are converted to tonnes.

The maximum per well injection rate was about 47,800 tonnes in September at the new 02/16-10-040-24W4/0 injection well. Water injection as part of a water-alternating-gas (WAG) cycles continued in 2022. Plots of CO_2, gas (the non-CO_2 component of the injection stream), water and injection hours are included in Appendix vii.

All production wells in the project are equipped with downhole temperature and pressure sensors that feed data to the SCADA system. Three of the injection wells are similarly equipped. Stable reservoir pressure measurements taken in the Leduc during 2022 show marginal change from the 2021 and 2020 surveys, as expected. Both fall-off tests from injection wells and static gradients from dedicated Leduc monitoring wells are used to verify average reservoir pressure in the Leduc during the EOR flood. Summary data from these pressure surveys has been added to Figure 21.

Detailed pressure records from these surveys have been filed with the AER.

A summary plot of Leduc pressure since pool discovery in 1953 shows current reservoir pressure is averaging 13.5 MPa as expected (Figure 21). Figure 14 shows forecast pressure changes from reservoir simulation compared to updated results; observed changes agree with the forecast, showing marginal increase. The Clive Leduc D-3A and Nisku D-2A pools were discovered in the 1950s and both had concurrent production of their solution and associated (gas cap) original gas in place. While both pools are pressure supported by the underlying Bashaw Platform aquifer, blowdown of 789 bcf from the Nevis gas pool in the 1960s and 70s led to a drop in pressure in all of the Bashaw Platform pools. The aquifer keeps the current pressures constant, and historical attempts to increase the reservoir pressure through water injection have not succeeded.

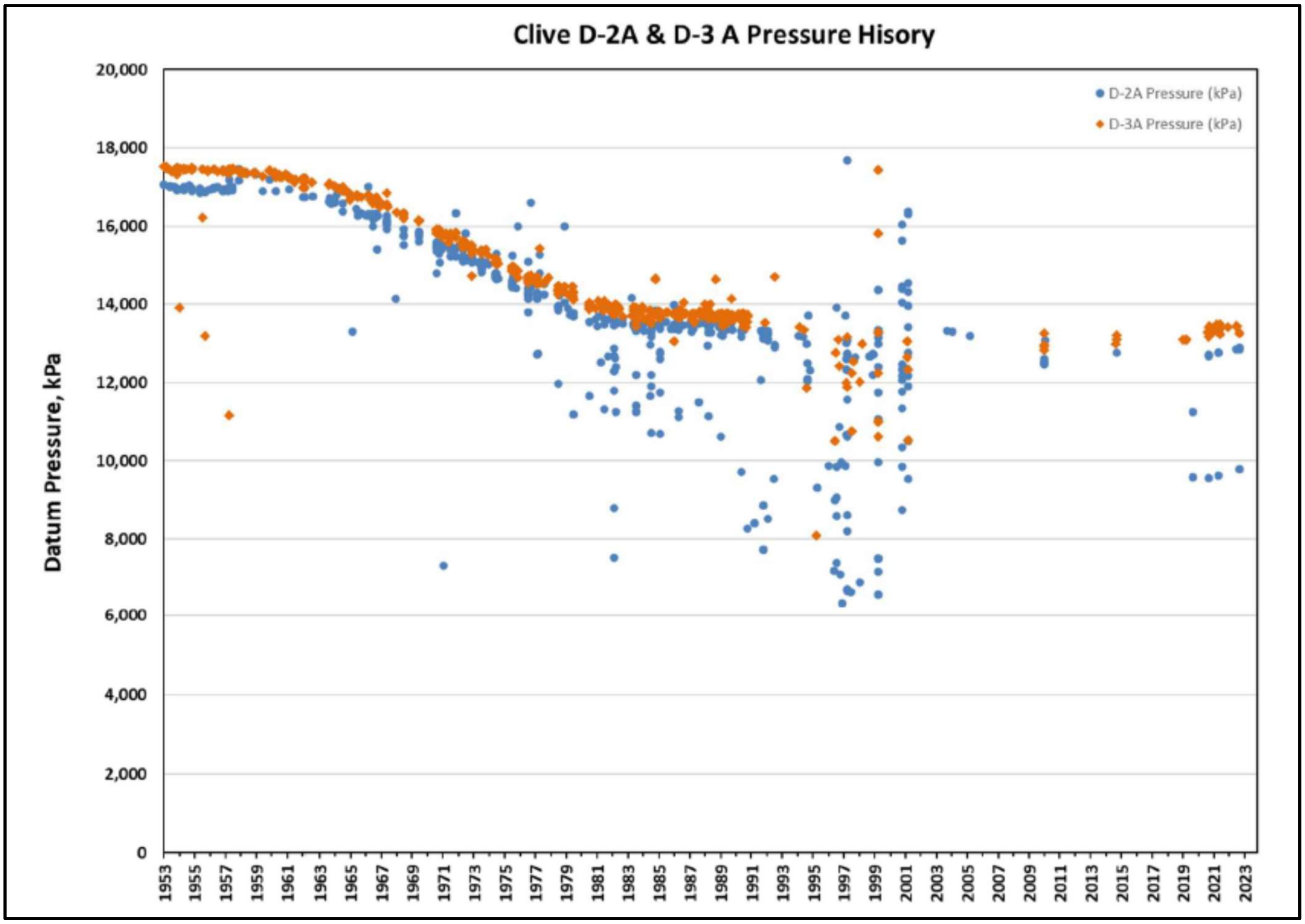


Figure 21- Clive D-3A (Leduc) and D-2A (Nisku) Pressure History

Enhance also conducts annual pressure surveys on dedicated Nisku observation wells to confirm that the Ireton shale is providing an effective barrier to CO_2 migration from the Leduc. Summary results are included in Figure 21. Downhole temperatures taken during these surveys also show no change confirming the integrity of the Ireton shale.

Figures 22, 23 and 24 show specific results for Leduc and Nisku pressure surveys in 2022 and the reservoir pressure forecast.

Production & Injection	Pressure MPa	Temperature °C
Avg. BH Producing Pressure	13.4	60.5
Avg. BH Injecting Pressure	13.9	33.4

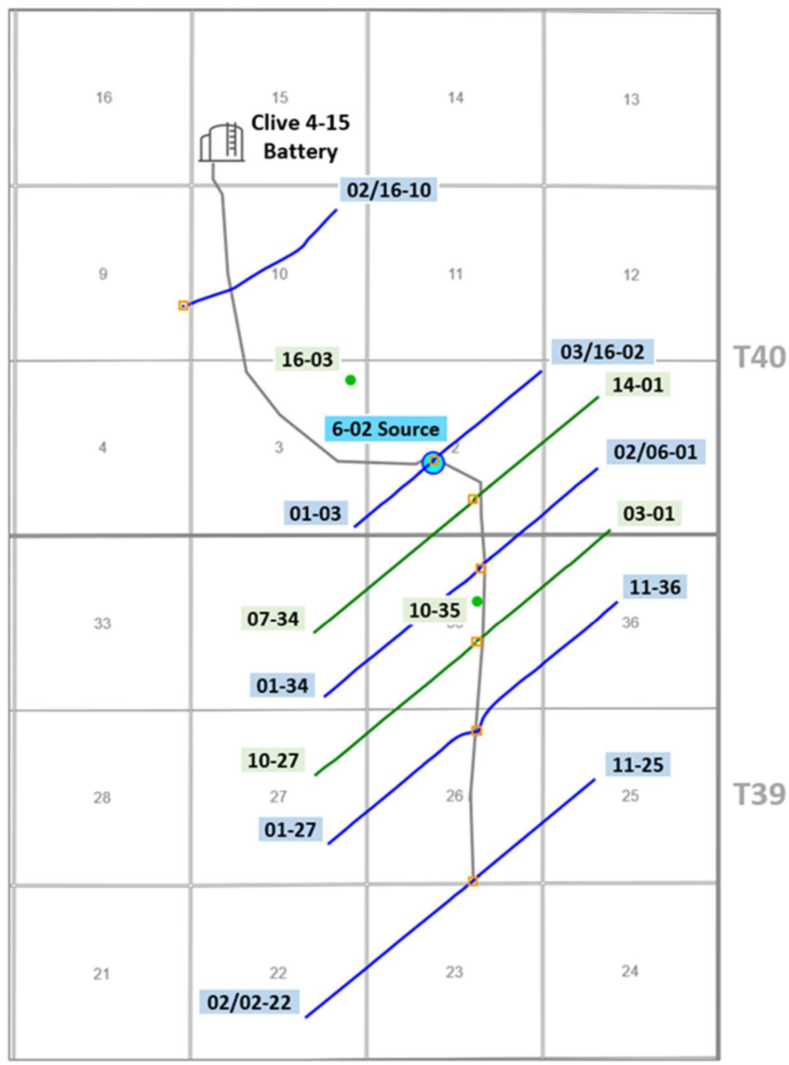
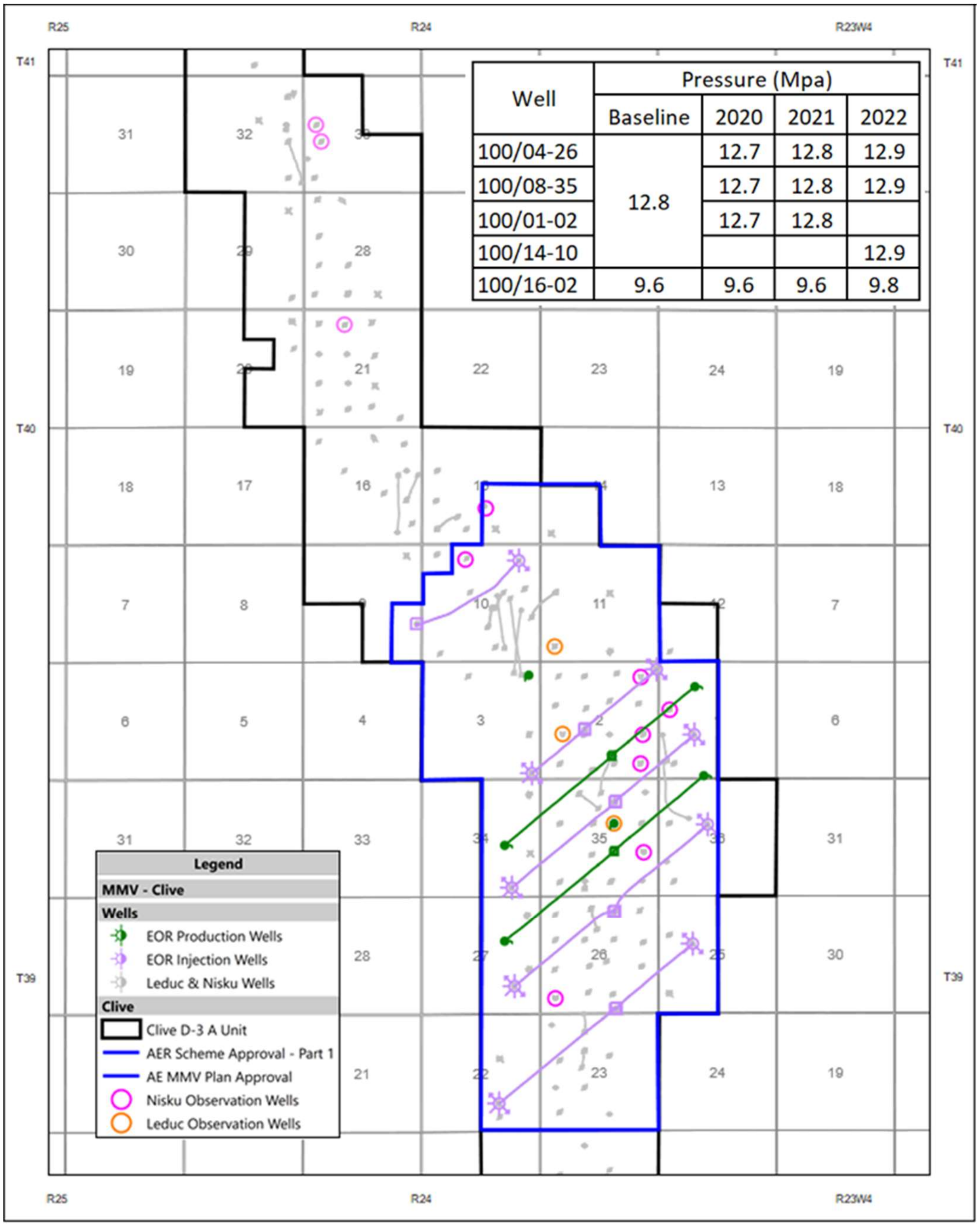


Figure 22 Leduc Pressure and Temperature 2022



Well	Pressure (Mpa)			
	Baseline	2020	2021	2022
100/04-26	12.8	12.7	12.8	12.9
100/08-35		12.7	12.8	12.9
100/01-02		12.7	12.8	
100/14-10				12.9
100/16-02	9.6	9.6	9.6	9.8

Figure 23 Nisku Pressure Surveys

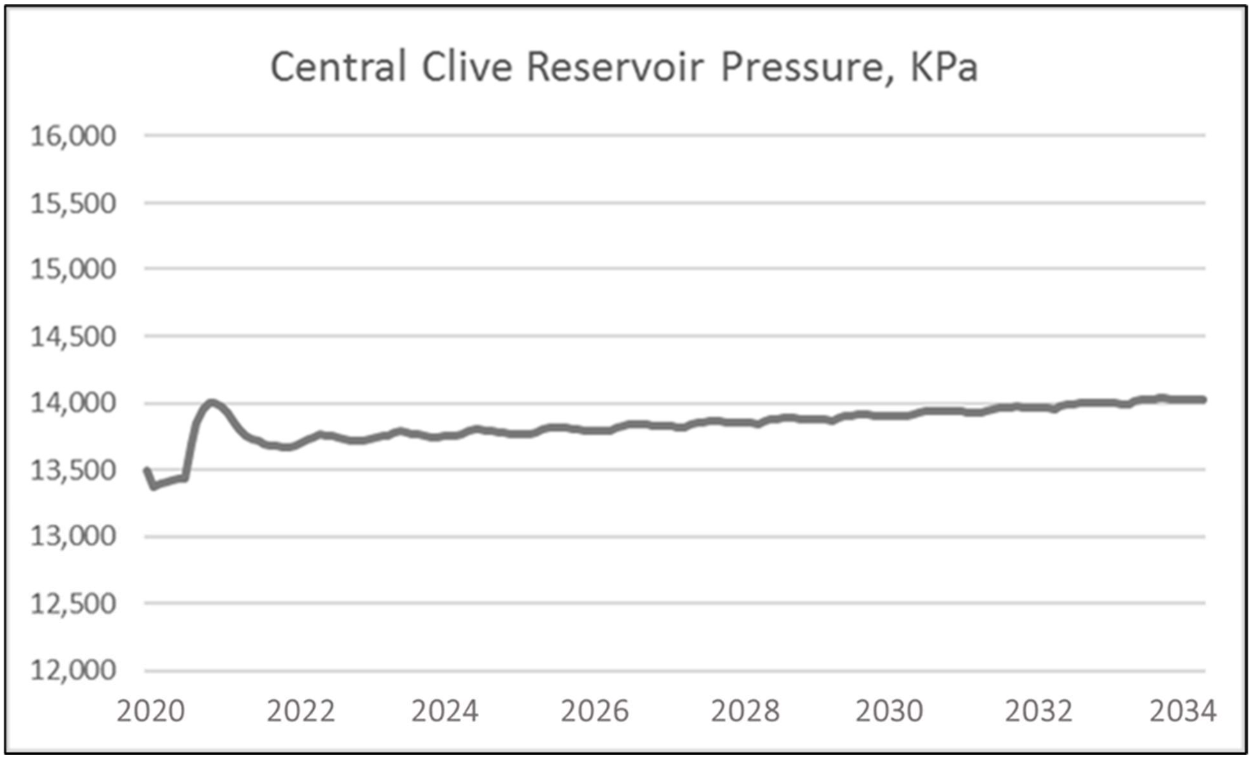


Figure 24 Clive Leduc Reservoir Pressure Forecast

Gas analyses from fresh CO_2 supplied by the ACTL are included in Appendix i. Gas analyses taken at the outlet of the DEXPRO™ unit (i.e., the recycle gas composition) are included in Appendix i.

3.10.2 Storage Performance Forecast

The total CO_2 storage capacity at Clive is estimated at 18.8 MT of CO_2. (Please see section 3.2 for detailed calculations). Figure 25 provides a storage forecast based on the initial reservoir simulation conducted for the Project.

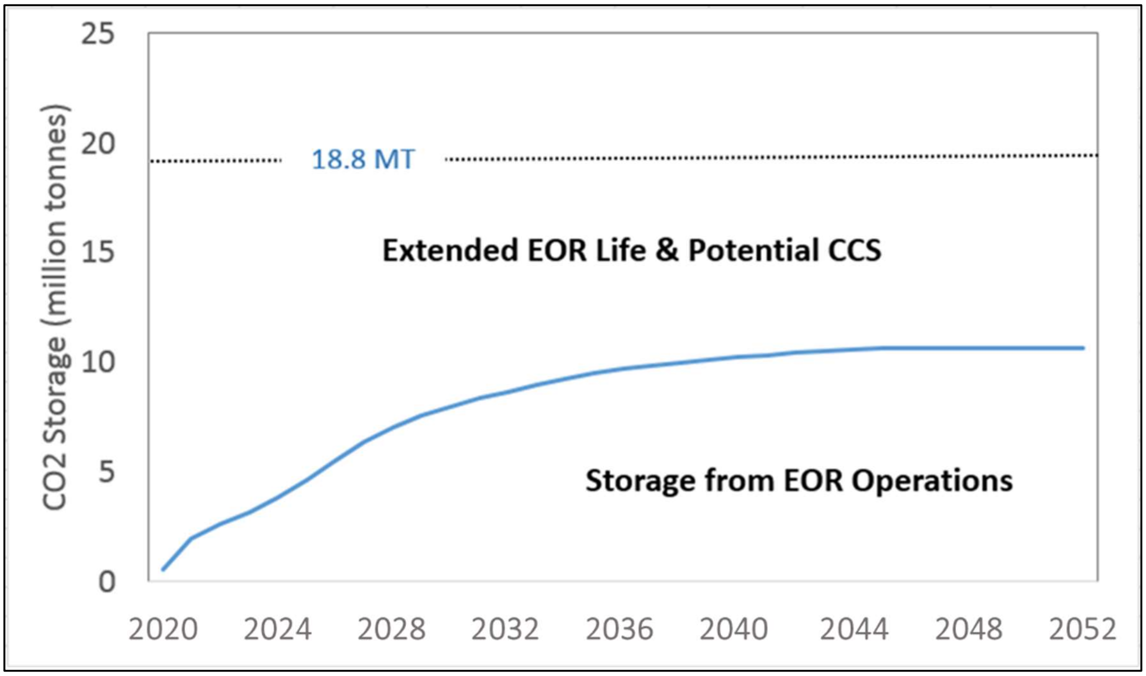


Figure 25 Clive Storage Prediction

3.10.3 Qualitative

3.10.3.1Operating Strategy/Pressure Management

The average reservoir pressure is expected to remain significantly below reservoir discovery pressure. This is confirmed by pressure data obtained in 2022.

3.10.4 Health, Safety and Environment ("HSE")

Enhance has an emergency response plan (ERP) that has been in place for several years in relationship to the operation of the Clive unit with respect to the production of oil and gas. This plan has been modified to incorporate the specific impacts of CO_2 within the operating area. This includes an emergency planning zone and emergency response plan that has been defined to encompass operations and to address accidental releases of CO_2, along with a series of documented operating procedures and comprehensive personnel training.

Enhance's ERP is required and approved by the Alberta Energy Regulator per Directive 071. The plan was developed in conjunction with the AER, local government and emergency response personnel and residents within the emergency planning zone.

SECTION 3 STORAGE		
Section 3.11 Monitoring, Measurement and Verification (MMV) Plan and Revisions		
Description:	Provide a list of relevant data and information from the MMV plan. The MMV plan should address monitoring during the pre-injection and injection phases, as well as the post injection stages. An overview of revised MMV plan if required by the regulatory agency or by changes in project circumstances.	
Purpose:	Information on planned monitoring is relevant to stakeholders (NGOs, local communities) in building awareness of CO_2 storage and for R&D/industry to gain knowledge of planning monitoring programs.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Description of data collection mechanisms to verify that storage is contained. Identification and discussion of any changes to MMV plan.	MMV plan and revisions of plan Describe the assessment of monitoring techniques Lessons learned
Data Capture Frequency	N/A	

3.11.1 Quantitative

Enhance completed an updated MMV plan and submitted it to Alberta Energy in July 2019 that was approved in November 2019. Enhance views this as a "living document" to be updated as field data is captured and analyzed, and new monitoring techniques are developed.

Certain components of the measurement, monitoring and verification (MMV) work at the Clive were paused or deferred in 2020 to minimize having consultants travel to the area as a precautionary response to COVID-19. The full program was re-instated in 2021 and expanded in 2022 to collect baseline data for future CO_2-EOR and storage development (see Figures 16 and 17).

Beginning in 2021 and continuing in 2022, additional isotope analyses on methane, ethane and sulfur have been added to provide enhanced attribution regarding the source of various gases:

- *Groundwater Monitoring*
  - Three dedicating groundwater monitoring wells were successfully drilled and sampled in 2019.
  - One additional dedicated monitoring well was drilled in 2021 and an existing water supply well at the Clive battery was added to the sampling program.
  - A total of 69 summer and fall samples were successfully collected from the five dedicated and thirty-three landowner wells in 2022.
  - The 2022 samples indicate conditions consistent with previous years and that are within the normal ranges expected for natural systems.

- *Soil Gas Sampling*
  - A full program was undertaken in 2021 and the area expanded for baseline data collection as shown in Figure 16.

- A total of 82 samples were successfully obtained in the summer and fall 2022 program (includes 9 blind duplicate samples for laboratory quality control).
- None of these samples show evidence of loss of CO_2 containment.

- *Coal Bed Methane (CBM)*
  - Enhance continues to collect monthly samples for gas composition at the 10-34-39-24W4 header that collects CBM gas from and area overlying the current CO_2-EOR area. The 04-15-040-24W4 header was added to the sampling program in 2021 to collect baseline data over the north portion of the Leduc pool prior to expansion of the CO_2-EOR and storage area.
  - Annual isotopic analysis is also done on samples from both locations.
  - Monthly gas analysis is also done from the main CBM compressor located at the Clive battery that collects gas over a much larger area.

- *Nisku and Leduc Monitoring Wells*
  - Alberta Energy Regulatory (AER) Directive 065 Approval No. 12832L requires Enhance to obtain gas samples and static reservoir pressures from dedicated Leduc and Nisku monitoring wells at Clive.
  - Bottomhole pressure surveys have been obtained and are discussed in the Section 3.10.
  - No anomalous results have been recorded.

- *Source Gas*
  - Monthly gas compositions are taken at the Sturgeon Compressor, the RCRU and the delivery meter at Clive. Continuous CO_2 content is measured at Clive.

- *Surface Casing Vent Flow (SCVF) Testing*
  - Two surveys were completed within the MMV area in 2020.
  - Two additional surveys were completed in each of 2021 and 2022 bringing the total to seven (a baseline was done in 2019).
  - No SCVF or abnormal pressures were noted within the CO_2 EOR and storage area.

Results of the program are discussed in detail in Appendix v. There were no trigger events noted to suggest containment issues.

3.11.2 Qualitative

All risk assessments for the Project show wellbores to be the only possible source for CO_2 migration. The two SCVF surveys conducted in each of 2020, 2021 and 2022 showed no evidence of wellbore related issues within the CO_2 EOR and storage area. Results of these surveys have been reported to the AER.

Enhance will continue to incorporate learnings from operating the Project and MMV data collection and interpretation into the ongoing MMV program.

SECTION 3 STORAGE		
Section 3.12 Monitoring Results		
Description:	Specific data to be acquired will be described in MMV plan (see Section 3.11). This plan will be updated regularly throughout the operation phase, particularly during storage permit renewals.	
Purpose:	Information and data from monitoring is relevant to stakeholders (NGOs, local communities) in building awareness of CO_2 storage. This information also allows for industry and R&D competence-building within monitoring a geological storage site and increased access to data from monitoring.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual data from monitoring (techniques described in the MMV plan), may include the following: • seismic imaging (e.g., cross-hole tomography, 3D and 4D seismic surveys, VSPs) • chemical tracers • well logs • down hole fluid chemistry • surface gas fluxes (compare to baseline monitoring Section 3.6) • soil gas flux (compare to Section 3.6) • ecosystem surveys (compare to Section 3.6) • tilt meters or equivalent • groundwater (compare to Section 3.6) • atmospheric monitoring (compare to Section 3.6) • static geologic model as a starting model as well as its input data • from below (case-by-case) the injection unit to the surface • pressure, temperature, fluid saturations • aeromagnetics • passive seismic monitoring for induced seismicity	Report with assessment of monitoring results Lessons learned from monitoring
Data Capture Frequency:	Daily/monthly average, yearly (differ between monitoring techniques, as identified in the MMV plan)	

3.12.1 Quantitative

Results of the 2022 program are reported Appendix v.

As of year-end 2022, Enhance has collected over 2000 data points for the MMV program. This data confirms that CO_2 remains contained within the Leduc formation. Some highlights of the program are noted below.

Soil Gas:

- Two sample programs were undertaken in 2022; summer and fall. The summer program completed 34 of a planned 38 samples as well as four "blind duplicate" samples for laboratory quality assurance (QA). The fall program obtained 38 of 39 planned samples from permanent probes plus one sample from a temporary probe and 5 QA samples. Results from these samples generally indicate conditions consistent with previous years and are within the normal ranges expected for natural systems.
- However, two locations were noted where anomalous methane levels were detected in soil gases.

- Analysis of stable and radiogenic carbon isotope results from one of the sites showed gas originating from underlying coal formations.
- Analyses of gas from the second site shows a suspected connection with gas originating from the lower Mannville Group as opposed to deeper Devonian formation where the CO_2 is being injected.
- The soil gas results confirm that there is no migration of injected CO_2 to the biosphere.

The ability to detect and characterize the source of anomalous methane levels demonstrates the utility of the Clive EOR baseline soil gas sampling approach and its potential to identify and characterize soil gases during the CO_2 EOR and storage operation.

CBM Gas Composition:

- The presence of widespread CBM development in the area enabled monitoring for potential leakage over the entire MMV area.
- CBM gas composition has remained stable indicating that injected CO_2 is remaining in the Leduc. The 12-12 location was added in 2021.

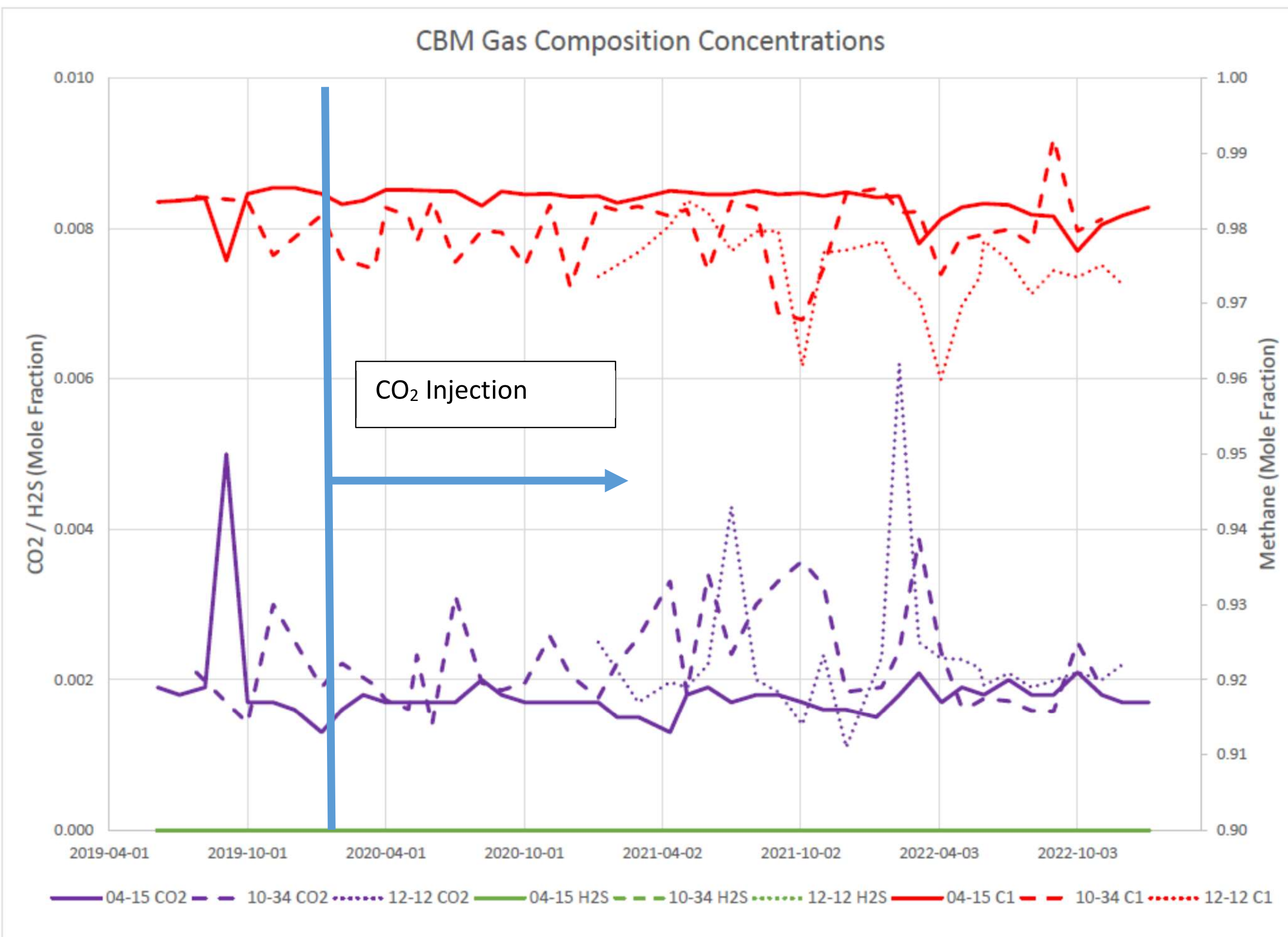


Figure 26 CBM Gas Composition

Carbon Isotope Analysis

- Stable carbon isotopes provide an opportunity to "fingerprint" source gas from the NWR and Nutrien facilities and differentiate it from native gas from the Nisku and Leduc (Devonian age) formations.

Groundwater Sampling

- Results from the water wells sampled in 2022 indicate conditions consistent with previous years and are within the normal ranges expected for natural systems.

3.12.2 Qualitative

Assessments and lessons learned are reported in Appendix v and will continue to evolve as Enhance continues ongoing analysis and continues to collect data in 2023.

SECTION 3	STORAGE		
Section 3.13	Well Design		
Description:	The provided data should identify potential risks as well as analysis for potential design improvement. This data should describe the existing and planned wells at the storage sites. **Purpose**: Information shared allows for industry and R&D competence–building, as well as increased access to data from CO_2 wells.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Operational experience	Design rationale Lessons learned	
Data Capture Frequency:	Annually and updated as necessary		

3.13.1 Quantitative

3.13.1.1 Type/Purpose of Well

One additional horizontal CO_2 injection well was drilled at the Clive field in 2022 to expand the flood area and increase overall injection capacity for fresh CO_2 and recycle gas volumes. This brings the total to nine. Additional injection wells will be drilled in the future as the EOR and storage project expands. UWIs for the current injection wells are given below:

- 00/01-34-039-24W4/0
- 00/01-03-040-24W4/0
- 00/01-27-039-24W4/0
- 02/11-36-039-24W4/0
- 02/06-01-040-24W4/0
- 03/16-02-040-24W4/0
- 02/02-22-039-24W4/0
- 00/11-25-039-24W4/0
- 02/16-10-040-24W4/0 (new well)

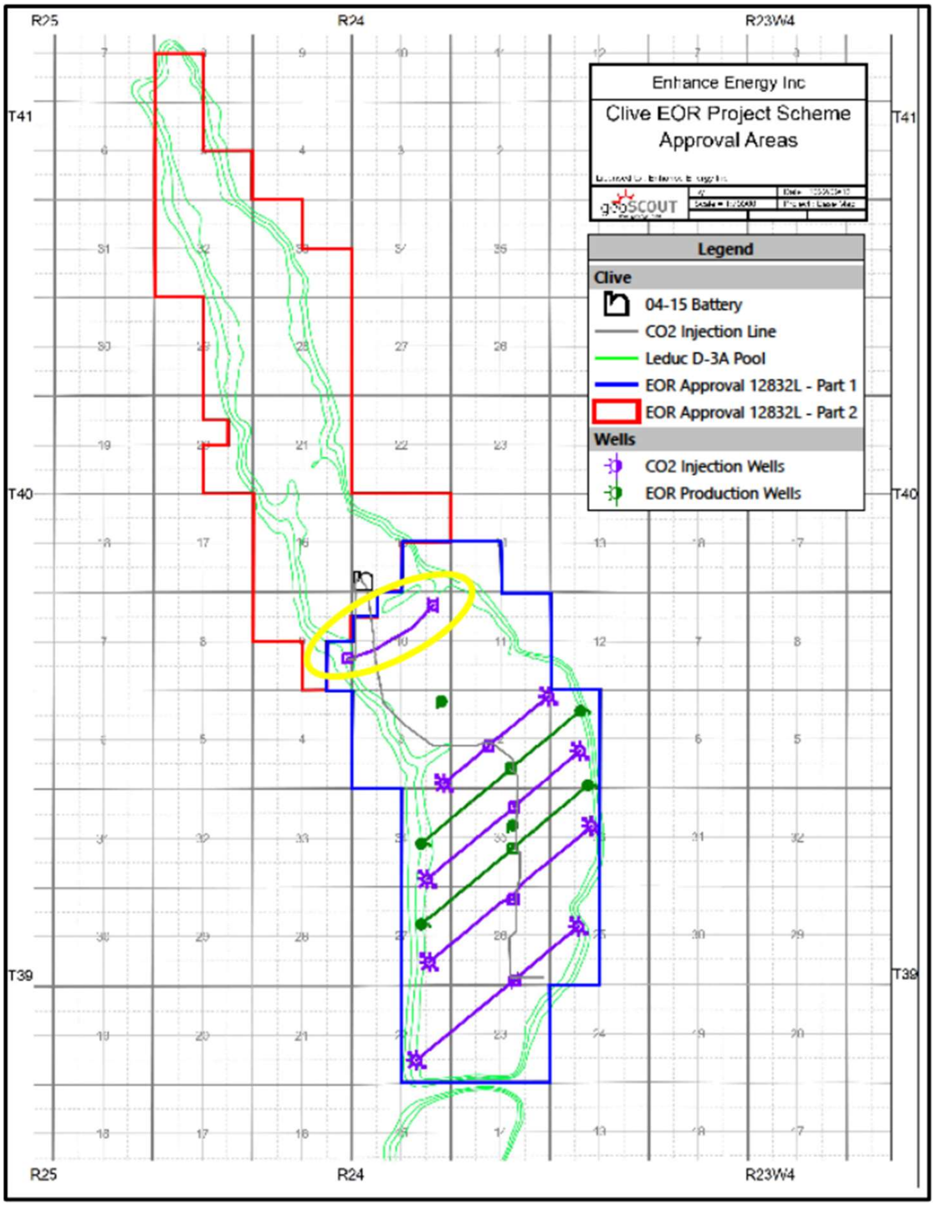


Figure 27 Clive Injectors and Producers and AER Approval Area

The AER Approval area is outlined in blue with the expansion area shown in red. Existing injectors are shown in purple with a down arrow at the toe. Producers are shown in green. The new injector is highlighted with a yellow oval.

Drilling and completion records and logs for the new injector have been filed with the AER. The drilling and completion reports for the new injection wells are included in Appendix viii.

3.13.1.2 Trajectory and Position

The current development strategy utilizes horizontal and vertical wells. Approximate locations of the wells are shown in Figure 27.

3.13.1.3 Completion Intervals –Leduc Horizon

The new injector is completed in the Leduc horizon. Copies of the AER DDS submissions and geoSCOUT well tickets that include additional well details are included in Appendix viii.

3.13.1.4 Casing and Cement Type and Dimensions

See Appendix viii for details.

SECTION 3	STORAGE		
Section 3.14	**CO_2 Injection for EOR Only**		
Description:	Additional information to that in 3.10, the following data/information is EOR specific.		
Purpose:	This information builds competence in industry and R&D on enhanced oil recovery with CO_2 injection and provides insights into a potential commercial driver for CCS projects.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**	
During Operations:	Actual data: • actual CO_2 injection rates and recycle rates • actual produced gas rates - actual water injection, if applicable - CO_2 injected per barrel of oil produced		
Data Capture Frequency	Monthly volume		

3.14.1 Quantitative

3.14.1.1 CO_2 Injection and Recycle Rates

Details of fresh and recycle injection rates are included in Appendix vi.

Plots of fresh and recycle rate and CO_2 content and total injection are shown in Section 3.8. Monthly data is tabulated in Table 16.

3.14.1.2 CO_2 Injected vs. Oil Produced

Figures 28-30 plot various CO_2 vs. oil production ratios for the project. These plots include production from two vertical wells within the EOR area that are being produced to assist with reservoir monitoring. Injection at the 02/16-10-40-24W4/0 well is excluded from these plots as this new well is located within the expanded EOR area. It is beginning CO_2 banking of an area to be developed with additional drilling.

Individual well production and injection plots are included in Appendix vii.

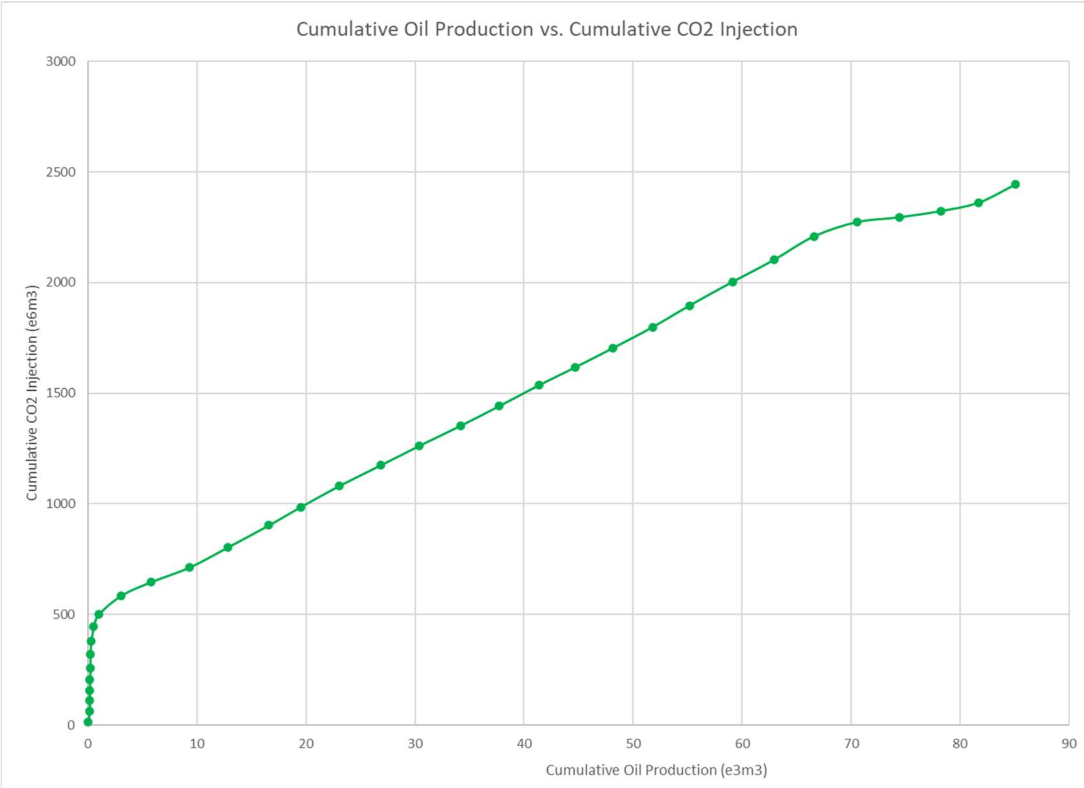


Figure 28 Cumulative Oil vs. Cumulative CO_2 Injection

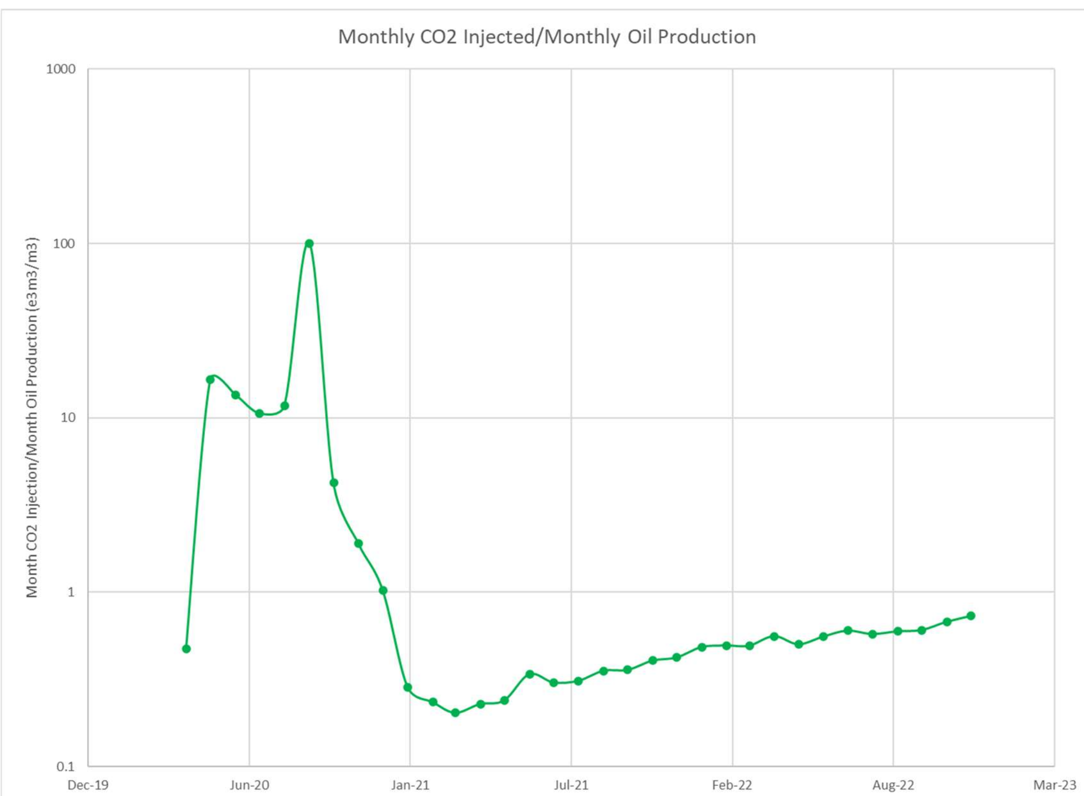


Figure 29 Monthly CO_2 Injected/Oil Produced

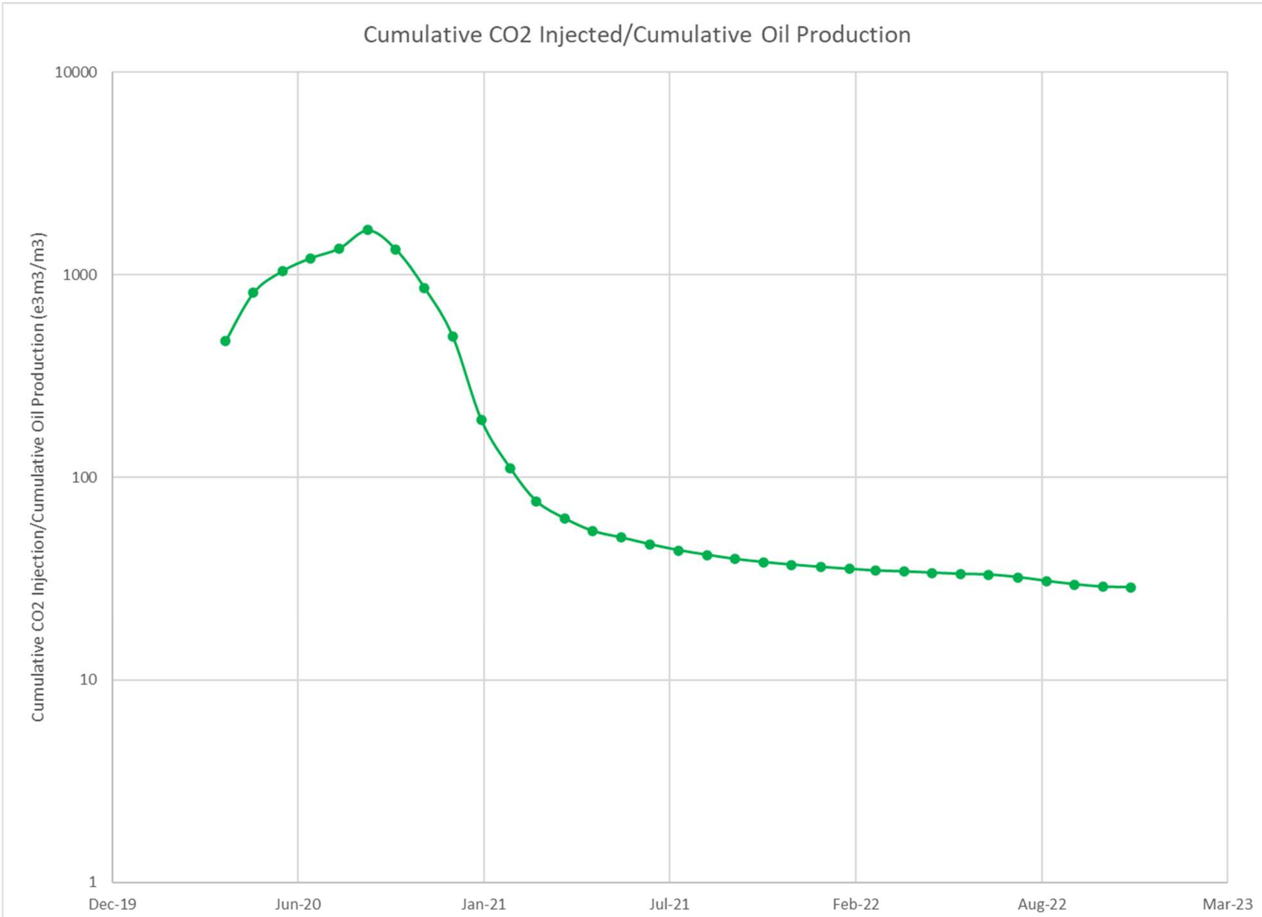


Figure 30 Cumulative CO_2 Injection/Cumulative Oil Production

Date	PRD Monthly OIL m3	PRD Monthly GAS e3m3	PRD Monthly WTR m3	PRD Monthly HRS hrs	INJ Monthly Gas e3m3	INJ Monthly Water m3	INJ Monthly Hours hrs	INJ Monthly Carbon Dioxide e3m3	PRD Monthly OIL Cum (e3m3)	INJ Monthly CO2 Cum (e6m3)	Monthly CO2 INJ/PRD OIL (e3m3/m3)	Cum CO2 INJ/Cum PRD OIL (e3m3/m3)
Mar-20	0	0	0	0	323.6	0	1547	15320.9	0	15		
Apr-20	130.4	142.2	697.9	473	662.9	0	2698	46293.6	0.1304	62	0.473	472.5
May-20	6.8	12	811.9	735	899.5	0	4464	50706.1	0.1372	112	16.518	818.7
Jun-20	11.5	9.1	563.9	720	762.5	0	4320	43364.4	0.1487	156	13.538	1047.0
Jul-20	19.2	17	656.9	744	1143.1	0	4464	47701.4	0.1679	203	10.593	1211.4
Aug-20	21.9	15.6	586.3	744	1314.6	0	4464	53501.6	0.1898	257	11.730	1353.5
Sep-20	3.2	5.7	215.5	312	515.9	0	4320	64089.8	0.193	321	100.306	1663.1
Oct-20	89.3	3.3	8751.8	728	597.4	0	4464	56769.1	0.2823	378	4.230	1338.1
Nov-20	235.2	13.3	24116	1310	766.3	0	4320	68613.8	0.5175	446	1.898	862.5
Dec-20	486.9	25.3	33902.8	2024	844.8	0	4464	55029	1.0044	501	1.030	499.2
Jan-21	2046	18137.3	46563.2	2805	2477.9	0	4464	83785.7	3.0504	585	0.286	191.8
Feb-21	2753.9	26965.9	49553.4	2604	3082.2	0	4032	61351.6	5.8043	647	0.235	111.4
Mar-21	3496.7	36077.6	55981.8	3327	4424.1	0	4464	65645.7	9.301	712	0.204	76.6
Apr-21	3514.8	34887.8	50852.3	3553	3594.7	0	5760	90714.2	12.8158	803	0.228	62.6
May-21	3768.8	35440.2	30213.1	3692	3648	0	5952	100084.1	16.5846	903	0.240	54.4
Jun-21	2908.1	28865.8	29796	3049	2909.5	31069.8	5040	81691.5	19.4927	985	0.339	50.5
Jul-21	3555.9	35318.7	38553.9	3270	3497.2	42883.4	5208	96169.1	23.0486	1081	0.304	46.9
Aug-21	3780.3	37912.5	41151.6	3967	3968.1	48342	5208	92962	26.8289	1174	0.311	43.8
Sep-21	3560	37043.8	37005.2	4122	4098.4	32847.2	5040	88299.1	30.3889	1262	0.355	41.5
Oct-21	3774.7	39511.5	38824.2	4452	4575.8	44826.1	5208	90820.8	34.1636	1353	0.358	39.6
Nov-21	3559.3	37766.9	35206.1	4263	4349.4	40048.9	5040	89235.6	37.7229	1442	0.405	38.2
Dec-21	3635.7	40276.1	32254.6	4149	4746.1	19744.2	5952	94166.2	41.3586	1536	0.423	37.1
Jan-22	3337.3	37384.5	23141.9	3790	4440.7	11543.7	5952	81413.9	44.6959	1618	0.485	36.2
Feb-22	3445.4	37789.4	19337.4	3901	4978.4	23520.3	5376	86463.3	48.1413	1704	0.495	35.4
Mar-22	3644.6	39030.8	16427	3851	4281.1	19876.3	5952	94830.3	51.7859	1799	0.494	34.7
Apr-22	3386.5	35299.3	13241.2	3743	4346.1	16206.4	5760	97333.9	55.1724	1896	0.560	34.4
May-22	3984.6	44515.6	13854.1	4364	5144.6	17404.7	5952	108182.2	59.157	2005	0.503	33.9
Jun-22	3782	43470.3	11750.4	4250	6747.6	15779.6	5760	98967.3	62.939	2104	0.556	33.4
Jul-22	3670.6	42250.8	9621.7	4100	6319.9	13935.1	5952	106273	66.6096	2210	0.602	33.2
Aug-22	3950.7	45631.4	15088	4294	6048.5	22339.8	5952	64614.2	70.5603	2274	0.576	32.2
Sep-22	3847.9	45062.4	28839.7	4306	2587.9	42836.7	4321	21601.7	74.4082	2296	0.597	30.9
Oct-22	3833.3	45380.8	34610.4	4241	3160	48895.7	5208	28401	78.2415	2324	0.606	29.7
Nov-22	3495.7	42025.8	32866.6	4166	3586.6	44395.7	5760	37788.1	81.7372	2362	0.676	28.9
Dec-22	3347.2	40619.4	33794.1	3674	4677.6	44291	5952	81389.8	85.0844	2444	0.730	28.7

Table 16 Production and Injection

3.14.1.3Water Injection

Produced water is either reinjected into a dedicated water disposal well or used for a water alternating gas (WAG) EOR scheme, under which some of the produced water will be injected into the CO_2 injectors to improve reservoir conformance. WAG operations began in June 2021 on the 00/01-34-039-24W4/0 well. Wells 00/01-34-039-24W4/0, 02/06-01-040-24W4/0 and 00/01-03-040-24W4/0 commenced WAG operations in 2022.

Individual well injection and production plots are included in Appendix vii.

SECTION 3 STORAGE		
Section 3.15 Injection Well Drilling and Completion		
Description: Describe the general methodology of injection well construction work: - drilling of wells - drilling work completion - discussion of pre-existing and new well needs (CO_2) - well workovers if existing wells are converted to either injection or monitoring wells **Purpose**: This description will allow industry and R&D competence-building when developing and operating a geological storage site.		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Updates as necessary	
Data Capture Frequency:	N/A	

3.15.1 Quantitative

3.15.1.1 Drilling Locations and Status of Injection

Drilling details for the 02/16-10-040-24W4/0 horizontal injection well drilled in 2022 are provided in Section 3.13 and Appendix viii.

AER Approval #12832L continues to require that some existing vertical wells be used as monitoring wells to collect fluid samples and monitor reservoir pressure. Results of the pressure surveys on these wells is shown in Figures 21-23.

SECTION 3	STORAGE		
Section 3.16	**Illustration Summarizing Site Geology and Modelling Work**		
Description:	Illustration of site geology and modelling work to highlight key parameters.		
Purpose:	Industry and R&D competence building within modeling and monitoring a geological storage site. Access to data/maps.		
Reporting Requirements:		**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:		Updates to illustrations/maps as necessary	
Data Capture Frequency		N/A	

3.16.1 Quantitative

Well tickets and AER DDS submissions for the horizontal injection well drilled in 2022 are included in Appendix viii. Due to the tight well control provided by existing vertical wells there have been no substantial changes to the site geological model described in Section 3.16 of the 2019 and previous detailed reports. There is extensive discussion of the Clive area geology included in the Measurement, Monitoring and Verification (MMV) Plan filed in conjunction with the 2019 knowledge sharing reports. See: Alberta Carbon Trunk Line project : knowledge sharing report, 2019 - Open Government. Directional surveys and logs of all project wells have been filed with the AER.

SECTION 4	CCS VALUE CHAIN	
Section 4.1	Project Schedule	
Description:	The project schedule gives information on the status of the project and on each building block (capture, transport and storage) and changes in the plan. The project's critical path and the related tasks need to be identified. Sharing schedules are relevant for other CCS projects for benchmarking purposes.	
Purpose:		
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Updates to the project schedule with explanations for each change in timing.	
Data Capture Frequency:	Annually and updated as necessary.	

4.1.1 Quantitative

4.1.1.1 NWR

The NWR schedule of project milestones is shown below in Table 17. CO_2 capture began in Q1 2020 with the startup of the gasifier operations and Milestone # 4 in Q2 with the declaration of commercial operation.

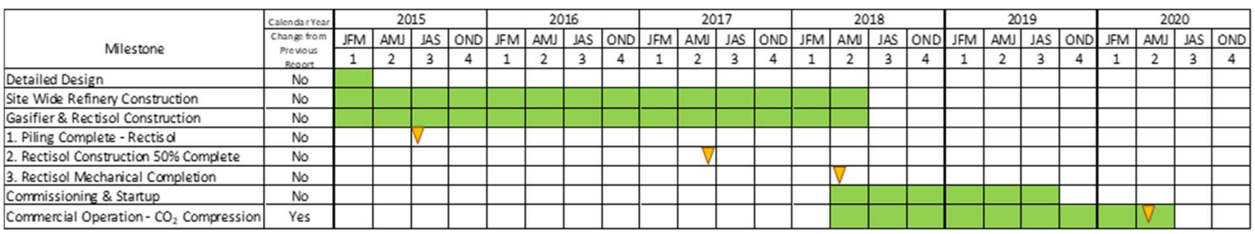


Table 17- Schedule of Project Milestones NWR

4.1.1.2 Enhance and Wolf Carbon Solutions

There were no changes to the Project Schedule for Enhance and WCS as reported in previous knowledge sharing documents. Please refer to Section 4.1 of the 2020 detailed report. All facilities completed their respective in-service dates in 2020.

SECTION 4	CCS VALUE CHAIN		
Section 4.2	Stakeholder Dialogue and Public Awareness		
Description:	Document the stakeholder dialogue and consultation process for CCS related activities.		
Purpose:	Sharing these experiences is highly relevant to other CCS projects and may help these projects develop a successful stakeholder engagement strategy and stakeholder engagement.		
Reporting Requirements:		**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:		Updates to the stakeholder consultation and ongoing discussions.	
Data Capture Frequency:		Annually and updated as necessary	

4.2.1 Quantitative

4.2.1.1 Enhance and WCS

There were no changes to the non-confidential list of stakeholders as reported in previous knowledge sharing documents. Please refer to Section 4.2 of the 2020 detailed report. Enhance's stakeholder communications focus in 2022 was on landowners directly impacted by construction and drilling activities, and the 2022 MMV program. A planned public open house in October was cancelled due to poor weather conditions making travel unsafe.

4.2.1.2 NWR

Details of past communications efforts can be found in Section 4.2 and of the 2020 and previous versions of this report.

Occasional public newsletters are posted to company websites providing general updated information, and general information related to Carbon Capture plans – note that newsletters are on the NWR website (https://nwrsturgeonrefinery.com).

NWR is also a participant in multi-stakeholder committees facilitated by Alberta Environment and Protected Areas (AEPA) related to Cumulative Effects Management in Alberta generally, and the Industrial Heartland area specifically. Most applicable is the Air Management Framework, which NWR has participated in since the framework committee's inception in 2007. Stakeholders who are represented include the federal, provincial, and municipal governments, with participation by their environmental staff experts, as well as NGO's such as Pembina Institute and Toxics Watch, and representatives of companies with facilities within the Industrial Heartland area. CCS is one of the topics discussed, along with emissions of NOx, SOx, ozone and PM2.5.

Non-Confidential List of Stakeholders

NWR continues to maintain and expand its contact list and is fully committed to continuing the existing program of stakeholder dialogue and public consultation.

NWR also participated and contributed significantly to the development of "The Water Management Framework for the Industrial Heartland and Capital Region" as part of a multi-stakeholder group including AESRD, local industry, municipalities and the North Saskatchewan Watershed Alliance. This group continues to work with AEPA on developing water criteria for the region.

Ongoing Consultation and Knowledge Sharing

Enhance, WCS and NWR have undertaken the following knowledge sharing activities in the 2022 calendar year.

Presentations to technical and general public audiences that speak to the ACTL Project and the carbon capture technology at NWR:

WCS:

Date	Event	Location
16-Mar-22	NACE Northern Chapter CCUS Technology	Virtual
17-March-2022	SPE Canadian Energy Technology Conference - Panel	Calgary
21-April-2022	Spartan Controls Pathway to Net Zero Panel	Virtual
26-April-2022	TD Securities Global Clean Technology and Energy Transition Virtual Conference	Virtual
27-April-2022	Canadian Hydrogen Convention –Panel CCUS in Clean Energy Transitions to Support Low Carbon Hydrogen Production	Virtual
28-April-2022	Alberta Government Strategic International Investment Forum	Virtual
10-May-2022	CSUR Technical Webinar	Virtual
06-June-2022	AIHA Petrochemical Conference Panel	Virtual
23-June-2022	Pipeline Industries Guild	Virtual
27-June-2022	Carbon Sequestration Leadership Forum Technical Group - Bergen Conference	Virtual
20-September-2022	Carbon Capture Canada Conference - Panel	Edmonton

Table 18- WCS Presentations

NWR: 2022 Schedule of Site Tours and Knowledge Sharing Presentations

Month	Activity	Audience
March	Canadian Fuels Association meeting and tour	Refining industry
May	Strathcona Library – virtual tour and presentation	Public
June	Strathcona County council tour	Government

September	Carbon Capture Canada conference – presentation	Public, industry
November	Grade 9 Students – tour	Community,
November	Hosted the world LC Finer forum	Industry
November	Hosted the APMC Board meeting and provided a tour	Government

Table 19- NWR Tours and Presentations

Enhance:

Date	Group	Estimated Audience Size	Location
13-Jan-2022	Lacombe County Council Presentation	8	Virtual
19-Jan-2022	Central Alberta Economic Partnership Community Engagement Session	55	Virtual
25-Jan-2022	Town of Didsbury Council Presentation	8	Virtual
31-Jan-2022	Inside Education Central Alberta Teachers' Professional Development Conference	10	Virtual
14-Feb-2022	CarbonTech – Technology Immersions Workshop: Avatar Innovations	200	Virtual
21-Feb-2022	Energy Jobs of the Future: Canada West Foundation Workshop	10	Virtual
24-Feb-2022	Cleantech – Engineering a Healthier Planet Webinar Series, Schulich Connects: University of Calgary	50	Virtual
24-Feb-2022	South-Western Alberta Teacher's Conference Association – Carbon Capture and Our Energy Transition	30	Virtual
25-Feb-2022	Central Alberta Teacher's Conference Association – Carbon Capture and Our Energy Transition	30	Virtual
2-Mar-2022	Transform Energy Summit - Net Zero Future: Calgary Chamber of Commerce	600	Calgary
3-Mar-2022	Tour: Industry Partners	5	Clive Field Tour
24-Mar-2022	Enhance-NWR-Wolf Annual ACTL Knowledge Sharing Presentation – Government of Alberta	25	Virtual
12-Apr-2022	Wolfcreek School Carbon Capture and Storage Presentation – Grade 7 – 12	15	Virtual
13-Apr-2022	Tour: Minister Rick Wilson, MLA Maskwacis-Wetaskiwin, Minister for Indigenous Relations	3	Clive Field Tour
27-Apr-2022	Canadian Hydrogen Convention: CCUS in Clean Energy Transitions to Support Low Carbon Hydrogen Production • Heather Campbell Executive Director, Clean Technology Alberta Innovates • Jeff Pearson President, Wolf Carbon Wolf Midstream • Geoffrey Bury President & CEO Northern	600	Edmonton

	Petrochemical Corporation • Candice Paton Executive Director, Regulatory Affairs & External Relations Enhance Energy Inc.		
3-May-2022	Tour: Central Alberta Economic Partnership and Red Deer Council	14	Clive Field Tour
9-May-2022	Tour: Maskwacis Cree Tribal Council	2	Clive Field Tour
12-May-2022	Tour: Alberta Energy Regulator	25	Clive Field Tour
19-May-2022	Tour: Alberta Energy Regulator	14	Clive Field Tour
2-Jun-2022	Tour: Central Alberta Economic Partnership Economic Development Officers	14	Clive Field Tour
7-Jun-2022	Global Energy Show Technical Conference: **Panel: CCUS Global Hubs and the Opportunity to Meet Net Zero Goals** • Marla Orenstein – Director, Natural Resources Centre, Canada West Foundation • Greg Maidment – Director of Operations and Applied Research, Carbon Management Canada • Anamika Mukherjee – Director, Innovation, Cenovus Energy • Candice Paton – Executive Director, Regulatory Affairs & External Relations, Enhance Energy Inc.	50	Calgary
8-Jun-2022	Global Energy Show Strategic Conference: **Panel: Zeroing Out: Is Net Zero by 2050 Possible?** • Deborah Yedlin – Chancellor, University of Calgary • Andrea Decore – Vice President Low Carbon Fuels & GHG Offsets, Suncor • Daniel Jurijew – Vice-President, Government Relations, Regulatory & Environmental Policy, Capital Power • Candice Paton – Executive Director, Regulatory Affairs & External Relations, Enhance Energy Inc. • Canon Bryan – CFO, Terrestrial Energy	500	Calgary
13-Jun-2022	St. Thomas Aquinas School, Red Deer Carbon Capture & Sequestration Presentation – Grade 9 Environmental Studies	28	Virtual
27-Jun-2022	Carbon Sequestration Leadership Forum, Bergen Norway. **Learnings from large scale projects and pilots -** ***panel discussion***	30	Virtual

	Global CCS Institute		
28-Jun-2022	Alberta Energy Regulator 2021 annual data and learnings session CO_2 EOR Approval 12832J.	25	Virtual
30-Jun-2022	Tour: Lacombe County Council	12	Clive Field Tour
13-Sep-2022	Education: University of Calgary ENCH 619 CCUS Course Guest Lecture	40	University of Calgary
20,21,22-Sep-2022	Carbon Capture Canada National Conference: Chair, Opening and Closing Remarks	500	Edmonton
20-Sep-2022	Carbon Capture Canada Conference: Supporting Canada's Carbon Opportunity • Katie Smith-Parent, Business Development, Industry Diversification and Executive Director Spartan Controls & Young Women in Energy (YWE) • Lisa Tebbutt, Director, Business Development Wolf Midstream • Candice Paton Executive Director, Regulatory Affairs & External Relations Enhance Energy • Heather Campbell, Executive Director, Clean Technology, Alberta Innovates	500	Edmonton
20-Sep-2022	Student World Café – Future Fit Skills	50	Edmonton
26-Sep-2022	City of Calgary, Calgary Chamber, Calgary Economic Development, Avatar, Edmonton Global, Canada West Foundation	12	Clive Field Tour
17-Oct-2022	10 Peaks High School Student Conference – Carbon Capture Utilization and Sequestration Presentation	25	Lacombe
18,19-Oct-2022	SPE Workshop: CCUS in Action – Accelerating to Meet Canada's 2030 Targets	100	Calgary
23-Nov-2022	Calgary Innovation Week: CCUS Innovation in Action (Platform Calgary)	50	Calgary

Table 20- Enhance Tours and Presentations

Copies of presentations will be made available upon request.

Committee Participation by NWR:

Canadian Fuels Association (CFA) – Environmental, Climate Change and Fuels Committees
Alberta Environment and Protected Areas - Air Management Framework Committee
Fort Air Partnership - Technical Working Group

Media Outreach for Public Education Purposes:
Enhance, WCS and NWR have worked with local, national and international journalists to educate them about the benefits of CCS. Copies of media stories will be made available upon request.

SECTION 4	CCS VALUE CHAIN
Section 4.3	Cost Per Tonnes of CO_2 Emissions Captured, Transported and Stored
Description:	Calculate the cost per tonne of CO_2 emissions captured, transported, and stored implementing **CCS**: • include full CCS value chain costs and CO_2 emissions captured, transported, and stored • exclude incremental oil produced by EOR with CO_2 injection Methodologies for calculating cost per tonne of CO_2 emissions have to be harmonized across the CCS projects being funded by the Province for comparison purposes. A capital cost allocation methodology per tonne of CO_2 will be provided by the Province.
Purpose:	This allows for benchmarking costs of the CCS project with the price of carbon and other measures reducing CO_2 emissions.

Reporting Requirements:	**Quantitative**	**Qualitative**
	Data/Information	**Knowledge**
During Operations:	Actual cost per tonne of CO_2 emissions captured, transported, and stored by implementing CCS.	
Data Capture Frequency:	Annually	

Input, forecast and reported values for the cost/tonne calculation have been completed using the methodology specified by the Province and are reported in the following pages. Estimates from 2021 have been replaced with actual costs with the exception of operating costs for the Rectisol unit.

Applicable Reported Costs for the Project - ACTL (current $ million)

	Funding Agreement																	
	Construction												Commercial Operations					
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020	2021	2022	2023	2024	2025
Actual or Estimated	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Actual	Estimated		
A. Capture																		
i) Activities - Design, Construction & Commissioning																		
a) Nutrien CO2 Recovery Facility																		
FEED and Detailed Engineering	$ 0.85	$ 0.99	$ 3.84	$ 0.58	$ 0.29	$ 0.15	$ -	$ -		$ 0.45	$ 0.02				$ 1.69	$ 0.30		
Equipment Procurement			$ 0.05	$ 0.05	$ 0.05		$ -	$ -		$ 6.48	$ 6.48				$ 2.49	$ 0.18		
Construction & Commissioning			$ 11.51	$ 3.21	$ 1.53		$ 11.00	$ -		$ 2.00	$ 18.51				$ 2.38	$ 1.15		
Sub-Total	$ 0.85	$ 0.99	$ 15.41	$ 3.85	$ 1.87	$ 0.15	$ 11.00	$ -	$ -	$ 8.93	$ 25.01	$ -	$ -	$ -	$ 6.56	$ 1.63	$ -	$ -
b) North West CO2 Compression Facility																		
FEED and Detailed Engineering	$ 0.06	$ 0.23	$ 0.22							$ 1.88								
Equipment Procurement						$ 0.33	$ 0.65	$ -	$ -	$ 38.70	$ 38.70							
Construction & Commissioning						$ 0.32	$ 1.20		$ 2.00	$ 2.43	$ 8.17							
Sub-Total	$ 0.06	$ 0.23	$ 0.22	$ -	$ -	$ 0.65	$ 1.85	$ -	$ 2.00	$ 43.00	$ 46.87	$ -	$ -	$ -	$ -	$ -	$ -	$ -
c) North West Rectisol® Unit 202103 Update																		
FEED and Detailed Engineering																		
Construction & Commissioning																		
Sub-Total	$ -	$ -	$ -	$ 9.52	$ 15.46	$ 17.27	$ 27.36	$ 36.54	$ 85.24	$ 14.61	$ 0.27	$ -	$ -	$ -	$ -	$ -	$ -	$ -
ii) Capture Facility Components																		
a) Nutrien CO2 Recovery Facility																		
Inlet line																		
Inlet Condenser																		
Compressor																		
Ariel Coolers																		
Dehydration System																		
Refrigeration System																		
Pumps																		
Equipment Ancillary																		
Total Collective Cost of Above													$ -	$ -	$ -	$ -	$ -	$ -
b) North West CO2 Compression Facility																		
Inlet line																		
Booster Compressor																		
Compressor																		
Dense Phase Pump																		
Cooling System																		
Equipment Ancillary																		
Total Collective Cost of Above													$ -	$ -	$ -	$ -	$ -	$ -
c) North West Rectisol® Unit																		
Inlet line																		
Inlet Condenser																		
Compressor																		
Ariel Coolers																		
Dehydration System																		
Refrigeration System																		
Pumps																		
Equipment Ancillary																		
Total Collective Cost of Above					$ 7.43	$ 30.32	$ 33.00	$ 24.34	$ 59.56	$ 21.44		$ -	$ -	$ -	$ -	$ -	$ -	$ -
iii) Operating Costs																		
a) Nutrien RCRU (including Water Well) and North West CO2 Compression Facility (Booster)																		
Energy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 5.54	$ 13.05	$ 15.68	$ 21.78		
Maintenance and Repair	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 1.16	$ 1.60	$ 1.61	$ 1.53		
Labour, Regulatory, Administration	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 0.56	$ 0.46	$ 0.49	$ 0.44		
Maintenance Capital and Turnaround													$ -	$ 0.12	$ 0.08	$ -		
Sub-Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 7.26	$ 15.24	$ 17.86	$ 23.75	$ -	$ -
b) Rectisol® Unit																		
Energy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 5.92	$ 6.15	$ 9.55	$ 14.37		
Maintenance and Repair	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 3.45	$ 1.93	$ 9.83	$ 2.13		
Labour, Regulatory, Administration	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 1.91	$ 3.40	$ 3.39	$ 3.53		
Sub-Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 11.28	$ 11.48	$ 22.77	$ 20.03	$ -	$ -
B. Transportation																		
i) Activities - Design, Construction & Commissioning																		
FEED and Detailed Engineering						$ 0.39				$ 0.97								
Equipment Procurement			$ 0.03	$ -			$ 0.25	$ 0.06	$ 35.00	$ 36.36	$ 36.36							
Construction & Commissioning					$ 1.16	$ 0.10		$ -	$ -	$ 100.00	$ 104.54	$ 3.00						
Land Procurement		$ 0.36	$ 3.88	$ 0.46	$ 0.55	$ 0.09	$ -	$ -		$ 2.86								
Sub-Total	$ -	$ 0.36	$ 3.91	$ 0.46	$ 1.71	$ 0.58	$ 0.25	$ 0.06	$ 35.00	$ 140.19	$ 140.90	$ 3.00	$ -	$ -	$ -	$ -	$ -	$ -
ii) Transportation Facility Components																		
12" Diameter Line Pipe																		
16" Diameter Line Pipe																		
Valve Stations																		
Equipment Ancillary																		
Total Collective Cost of Above													$ -	$ -	$ -	$ -	$ -	$ -
iii) Operating Costs (SCS and ACTL)																		
Energy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ 3.30	$ 7.71	$ 7.67	$ 10.51		
Maintenance and Repair	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -			$ 0.71	$ 2.21	$ 2.00	$ 1.67		
Labour, Regulatory, Administration	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -				$ 0.94	$ 1.26	$ 0.81	$ 2.71		
Maintenance Capital and Turnaround													$ -	$ -	$ 1.29	$ 1.20		
Sub-Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 4.94	$ 11.18	$ 11.77	$ 16.08	$ -	$ -
C. Storage																		
i) Activities - Design, Construction & Commissioning																		
FEED and Detailed Engineering	$ 0.31	$ 0.31	$ 0.31	$ 0.31	$ 0.31	$ 0.31			$ 0.08		$ 0.10		$ 0.02	$ -	$ -	$ -		
Equipment Procurement										$ 0.74	$ 15.48		$ 4.83	$ 1.05	$ 0.10	$ 4.22		
Construction & Commissioning											$ 4.87		$ 5.32	$ 0.56	$ 1.00	$ 4.73		
Drill and Complete Wells											$ 13.75		$ 0.06	$ 3.69	$ 3.93	$ 4.39		
Sub-Total	$ 0.31	$ 0.31	$ 0.31	$ 0.31	$ 0.31	$ 0.31	$ -	$ -	$ -	$ 0.74	$ 34.20		$ 10.23	$ 5.30	$ 5.04	$ 13.34	$ -	$ -
ii) Injection Facility Components																		
Injection wellbore equipment, wellheads & flowlines																		
CO_2 gathering system																		
Recycle CO_2 compression system & inlet separator																		
Equipment Ancillary																		
Total Collective Cost of Above								$ -					$ -	$ -	$ -	$ -	$ -	$ -
iii) Operating Costs																		
Energy	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 0.63	$ 3.70	$ 6.36	$ 6.64		
Maintenance and Repair	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 0.11	$ 1.76	$ 2.33	$ 2.43		
Labour, Regulatory, Administration	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -		$ 1.19	$ 2.53	$ 1.26	$ 1.31		
Monitoring, Measurement and Verification	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.44		$ 1.09	$ 1.13	$ 1.16	$ 2.24		
Sub-Total	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 1.44	$ -	$ 3.01	$ 9.11	$ 11.10	$ 12.62	$ -	$ -

Applicable Reported Annual CO_2 Volumes for the Project - ACTL (million tonnes)

	Construction												Commercial Operations					
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020	2021	2022	2023	2024	2025
A. CO_2 Captured																		
Sourced from Rectisol® Unit	-	-	-	-	-	-	-	-	-	-	-	-	0.79	1.11	0.89			
Sourced from Nutrien	-	-	-	-	-	-	-	-	-	-	-	-	0.15	0.14	0.16			
Total CO_2 Captured	0	0	0	0	0	0	0	0	0	0	0	0	0.941	1.244	1.045	0	0	0
B. CO_2 Avoided																		
Sourced from Rectisol® Unit	-	-	-	-	-	-	-	-	-	-	-	-	0.73	1.03	0.82			
Sourced from Nutrien	-	-	-	-	-	-	-	-	-	-	-	-	0.13	0.13	0.14			
Total CO_2 Avoided	0	0	0	0	0	0	0	0	0	0	0	0	0.865	1.151	0.967	0.000	0.000	0.000

Funding Efficiency inputs - ACTL (Current million $)

A. Government Funding

	Construction												Commercial Operations					
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2020	2021	2022	2023	2024	2025
NRCan Funding	$ -	$ 15.800	$ 25.600	$ 16.450	$ 5.350	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Government of Alberta Funding- NWR	$ -	$ -	$ -		$ -	$ -	$ 9.900	$ -	$ 19.800		$ 19.800	$ 24.750	$ -	$ 3.494	$ 3.814	$ -	$ -	$ -
Government of Alberta Funding- Enhance	$ -	$ -	$ -	$ 4.500	$ -					$ 54.900	$ 89.100	$ 74.250	$ -	$ 10.483	$ 14.497	$ -	$ -	$ -
Total	$ -	$ 15.800	$ 25.600	$ 20.950	$ 5.350	$ -	$ 9.900	$ -	$ 19.800	$ 54.900	$ 108.900	$ 99.000	$ -	$ 13.977	$ 18.311	$ -	$ -	$ -

Levelized Cost per Tonne - ACTL

User Defined - Inputs for Enhance		
Project life (T)	25.0	years
Nominal Discount Rate (r)	5.125%	
General Inflation Rate (e_{inf})	2.00%	
Real Annual Escalation Rate (e_r)	1.00%	
Estimated mass of CO_2 captured (million tonnes per year)	1.62	
Estimated mass of CO2 captured from Nutrien (million tonnes per year)	0.31	
Estimated mass of CO_2 avoided (million tonnes per year)	1.48	
Estimated mass of CO2 avoided from Nutrien (million tonnes per year)	0.28	
Calculations		
Fixed Charge Factor (FCF)	0.072	
A	13.919	
Apparent Escalation Rate (e_a)	3.0%	
k	0.980	
Opex Levelization Factor (l)	1.396	

User Defined - Inputs for Rectisol® Unit		
Project life (T)	25.0	years
Nominal Discount Rate (r)	5.125%	
General Inflation Rate (e_{inf})	2.00%	
Real Annual Escalation Rate (e_r)	1.00%	
Estimated mass of CO_2 captured (million tonnes per year)	1.31	
Estimated mass of CO_2 avoided (million tonnes per year)	1.20	
Calculations		
Fixed Charge Factor (FCF)	0.072	
A	13.919	
Apparent Escalation Rate (e_a)	3.0%	
k	0.980	
Opex Levelization Factor (l)	1.396	

Item	Annuity Cost ($ million)	Cost/Tonne Captured ($/tonne)	Cost/Tonne Avoided ($/tonne)
CAPEX			
A. Capture - CAPEX	**$45.39**	**$27.95**	**$30.69**
i) Activities - Design, Construction & Commissioning *	$30.83	$18.98	$20.84
a) Nutrien CO2 Recovery Facility	**$6.27**	**$20.22**	**$22.67**
FEED and Detailed Engineering	$0.80	$2.56	$2.87
Equipment Procurement	$1.23	$3.96	$4.44
Construction & Commissioning	$4.25	$13.70	$15.36
b) North West CO2 Compression Facility	**$7.48**	**$5.69**	**$6.22**
FEED and Detailed Engineering	$0.20	$0.15	$0.16
Equipment Procurement	$6.16	$4.69	$5.12
Construction & Commissioning	$1.12	$0.85	$0.93
c) North West Rectisol® Unit	**$17.08**	**$13.00**	**$14.21**
FEED and Detailed Engineering	$0.00	$0.00	$0.00
Construction & Commissioning	$0.00	$0.00	$0.00
ii) Capture Facility Components *	$14.56	$8.96	$9.84
a) Nutrien CO2 Recovery Facility	**$0.00**	**$0.00**	**$0.00**
b) North West CO2 Compression Facility	**$0.00**	**$0.00**	**$0.00**
c) North West Rectisol® Unit	**$14.56**	**$11.08**	**$12.11**
B. Transportation - CAPEX	**$25.80**	**$15.88**	**$17.44**
i) Activities - Design, Construction & Commissioning	$25.80	$15.88	$17.44
FEED and Detailed Engineering	$0.11	$0.07	$0.07
Equipment Procurement	$8.57	$5.28	$5.80
Construction & Commissioning	$16.40	$10.10	$11.09
Land Procurement	$0.71	$0.44	$0.48
ii) Transportation Facility Components	$0.00	$0.00	$0.00
C. Storage - CAPEX	**$5.51**	**$3.39**	**$3.73**
i) Activities - Design, Construction & Commissioning	$5.40	$3.32	$3.65
FEED and Detailed Engineering	$0.19	$0.11	$0.13
Equipment Procurement	$2.02	$1.24	$1.37
Construction & Commissioning	$1.24	$0.76	$0.84
Drill and Complete Wells	$1.95	$1.20	$1.32
ii) Injection Facility Components	$0.00	$0.00	$0.00
OPEX			
A. Capture-OPEX *	**$61.09**	**$37.61**	**$41.30**
Nutrien and North West CO2 Compression Facility	$33.14	$20.40	$22.41
Energy	$30.39	$18.71	$20.54
Maintenance and Repair	$2.14	$1.32	$1.45
Labour, Regulatory, Administration	$0.61	$0.38	$0.42
Rectisol® Unit	$27.95	$21.27	$23.24
Energy	$20.05	$15.26	$16.68
Maintenance and Repair	$2.97	$2.26	$2.47
Labour, Regulatory, Administration	$4.92	$3.75	$4.09
B. Transportation-OPEX	**$22.45**	**$13.82**	**$15.18**
Energy	$14.67	$9.03	$9.92
Maintenance and Repair	$2.33	$1.43	$1.57
Labour, Regulatory, Administration	$3.78	$2.32	$2.55
C. Storage-OPEX	**$17.61**	**$10.84**	**$11.90**
Energy	$9.26	$5.70	$6.26
Maintenance and Repair	$3.39	$2.09	$2.29
Labour, Regulatory, Administration	$1.83	$1.13	$1.24
Monitoring, Measurement and Verification	$3.13	$1.92	$2.11
Capture	$106.49	$65.56	$71.99
Transport	$48.24	$29.70	$32.61
Storage	$23.12	$14.23	$15.63
Total Cost/Tonne		**$109.49**	**$120.23**

Forecasted OPEX ($ million/year)

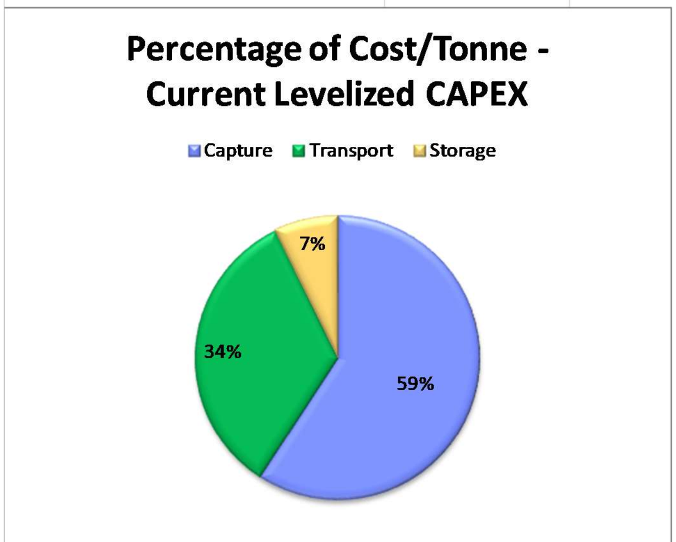
	Estimated (2023)	Levelized
Capture	**$ 43.78**	**$ 61.09**
Nutrien and North West CO2 Compression Facility	$ 23.75	$ 33.14
Energy	$ 21.78	$ 30.39
Maintenance and Repair	$ 1.53	$ 2.14
Labour, Regulatory, Administration	$ 0.44	$ 0.61
Rectisol® Unit	$ 20.03	$ 27.95
Energy	$ 14.37	$ 20.05
Maintenance and Repair	$ 2.13	$ 2.97
Labour, Regulatory, Administration	$ 3.53	$ 4.92
Transport	**$ 16.08**	**$ 22.45**
Energy	$ 10.51	$ 14.67
Maintenance and Repair	$ 1.67	$ 2.33
Labour, Regulatory, Administration	$ 2.71	$ 3.78
Storage	**$ 12.62**	**$ 17.61**
Energy	$ 6.64	$ 9.26
Maintenance and Repair	$ 2.43	$ 3.39
Labour, Regulatory, Administration	$ 1.31	$ 1.83
Monitoring, Measurement and Verification	$ 2.24	$ 3.13
Total	**$ 72.48**	**$ 101.15**

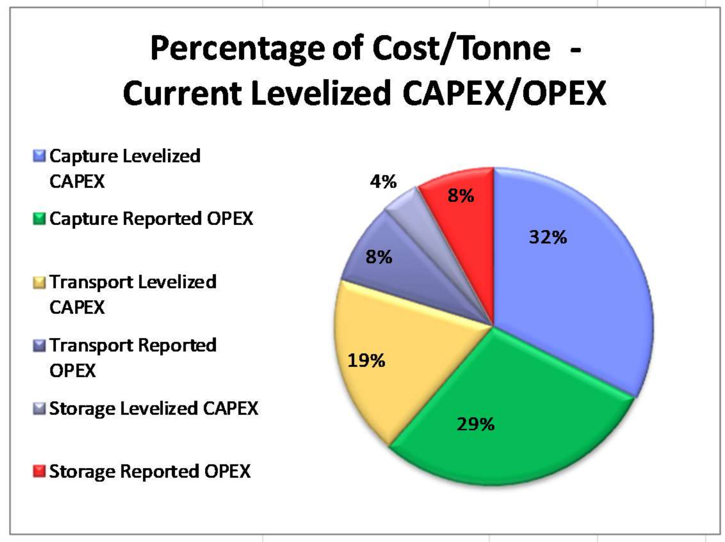
* As Nutrien CO2 recovery facility and the North West Rectisol & CO2 compression facilities work in parallel, the individual costs and percent of the total cost per tonne of these units do not add up to the total CAPEX capture activities, total CAPEX capture facility components, and the total OPEX capture.

Reported Cost per Tonne - ACTL

User Defined - Inputs

Levelized *CAPEX* capture for ACTL	45.39	$ million
Levelized *CAPEX* transport	25.80	$ million
Levelized *CAPEX* storage and MMV	5.51	$ million





Annual Reporting

			Funding Agreement					
			Commercial Operations					
			2020	2021	2022	2023	2024	2025
Capture	Levelized CAPEX capture for ACTL	C$ MM	45.39	45.39	45.39	45.39	45.39	45.39
	Reported CAPEX capture for ACTL*	C$ MM	22.72	38.21				
	OPEX (Reported) for ACTL	C$ MM	18.53	26.72	40.63			
	Total w/ Levelized CAPEX	C$ MM	63.93	72.11	86.03	45.39	45.39	45.39
	Total w/ Reported CAPEX	C$ MM	41.25	64.93	40.63	-	-	-
Transport	Levelized CAPEX for ACTL	C$ MM	25.80	25.80	25.80	25.80	25.80	25.80
	Reported CAPEX for ACTL	C$ MM	21.15	22.00				
	OPEX (Reported) for ACTL	C$ MM	4.94	11.18	11.77			
	Total w/ Levelized CAPEX	C$ MM	30.74	36.97	37.57	25.80	25.80	25.80
	Total w/ Reported CAPEX	C$ MM	26.09	33.18	11.77	-	-	-
Storage	Levelized CAPEX for ACTL	C$ MM	5.51	5.51	5.51	5.51	5.51	5.51
	Reported CAPEX for ACTL	C$ MM	3.87	2.56				
	OPEX (Reported) for ACTL	C$ MM	3.01	9.11	11.10			
	Total w/ Levelized CAPEX	C$ MM	8.52	14.62	16.61	5.51	5.51	5.51
	Total w/ Reported CAPEX	C$ MM	6.88	11.68	11.10	-	-	-
	Total Levelized CAPEX + OPEX	C$ MM	103.19	123.70	140.20	76.70	76.70	76.70
	Total Reported CAPEX + OPEX	C$ MM	74.23	109.78	63.51	-	-	-
	Total CO_2 Captured	MM tonne/year	0.94	1.24	1.05	-	-	-
	Total CO_2 Avoided	MM tonne/year	0.87	1.15	0.97	-	-	-
	Reported Cost/Tonne Captured (Levelized CAPEX)	C$/tonne	$ 109.66	$ 99.44	$ 134.17	$ -	$ -	$ -
	Reported Cost/Tonne Avoided (Levelized CAPEX)	C$/tonne	$ 119.29	$ 107.48	$ 144.99	$ -	$ -	$ -
	Reported Cost/Tonne Captured (Reported CAPEX)	C$/tonne	$ 78.88	$ 88.25	$ 60.77	$ -	$ -	$ -
	Reported Cost/Tonne Avoided (Reported CAPEX)	C$/tonne	$ 85.81	$ 95.38	$ 65.67	$ -	$ -	$ -

Avg. Total Reported Cost/Tonne Captured (Levelized CAPEX)	**114.42**
Avg. Total Reported Cost/Tonne Avoided (Levelized CAPEX)	**123.92**
Avg. Total Reported Cost/Tonne Captured (Reported CAPEX)	**75.97**
Avg. Total Reported Cost/Tonne Avoided (Reported CAPEX)	**80.53**

* "Reported CAPEX" refers to the Annualized CAPEX (now called "Levelized CAPEX" in this sheet) total that was reported in the CPT submitted during that year.

Cost per tonne is discussed in Section 10 of the 2022 summary report.

SECTION 4	CCS VALUE CHAIN	
Section 4.4	Governmental Funding	
Description:	Yearly governmental funding provided to the project- this is public information. **Purpose**: This information is relevant for industry players for benchmarking purposes	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual governmental funding: • actual annual and total governmental funding provided to the CCS project • governmental funding relative to the costs incurred to date (per cent) Governmental funding profile and forecast (federal and provincial). Calculation of a government funding efficiency metric based upon the methodology directed by the Province. (e.g., government funding per tonne of CO_2 stored)	
Data Capture Frequency:	Annually	

Government Funding	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023-2025	TOTAL
Federal ecoETI	$0	$15.80	$14.20	$2.90	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$33
Federal CEF	$0	$0	$11.40	$13.55	$5.35	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$30
Provincial ACTL CCS	$0	$0	$0	$4.50	$0	$0	$9.90	$0	$19.80	$54.90	$108.90	$99.00	$13.98	$15.26	$62.55	$389
Provincial SIEE	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$3.05	$0.08	$3.14
TOTAL	$0	$15.80	$25.60	$20.95	$5.35	$0	$9.90	$0	$19.80	$54.90	$108.90	$99.00	$13.98	$18.31	$62.63	$455

Notes: Funding amounts shown above are in $MM

Table 21- Government Funding Schedule

Funding to 2022 represents approximately 39% of forecast total Project costs. Government funding efficiency is reported below.

User Defined - Inputs		
Project Life (T)	25.0	years
Discount Rate (r)	5.125%	
General Inflation Rate (e_{inf})	2.00%	
Calculations		
Fixed Charge Factor (FCF)	0.072	

Total Current Funding	**$ 436.14**
Annualized CAPEX Funding	**$ 31.33**

Funding Efficiency Results - ACTL

Funding Year	**Avoided Volumes of CO_2 (million tonnes)**	**Yearly Injection Funding ($ millions)**	**Annualized Capital Funding ($ millions)**	**Funding Cost per Tonne ($/tonne)**	**Social Cost of Carbon ($/tonne)**	**Funding Efficiency (%)**
2020	0.87	$ -	$ 31.33	**$ 36.22**	**$ 71.38**	**197.05%**
2021	1.15	$ 13.98	$ 31.33	**$ 39.37**	**$ 74.19**	**188.46%**
2022	0.97	$ 18.31	$ 31.33	**$ 51.34**	**$ 77.09**	**150.16%**
2023	0.00	$ -	$ 31.33	N/A	$ 80.08	N/A
2024	0.00	$ -	$ 31.33	N/A	$ 83.15	N/A
2025	0.00	$ -	$ 31.33	N/A	$ 86.31	N/A

*Note: The social cost of carbon is a measure in dollars of the long-term damage done by a ton of carbon dioxide emissions in a given year as determined by the U.S EPA and has been pre-populated (see the following link). https://www.whitehouse.gov/wp-content/uploads/2021/02/TechnicalSupportDocument_SocialCostofCarbonMethaneNitrousOxide.pdf?source=email

Section 4.5 CO_2 Emissions Per Year

Description: Provide information on the CO_2 emitted from the capture facility, pipelines and storage. Include an overview of sources of fugitive emissions throughout the value chain. Downstream emissions associated with the produced oil in EOR projects are to be excluded, but additional actual onsite CO_2 emissions created to produce incremental oil should be included. Only the emissions associated with the Project are to be included.

Purpose: This documents the climate benefit of the CCS project.

Reporting Requirements:	**Quantitative**	**Qualitative**
	Data/Information	**Knowledge**
During Operations:	Actual yearly CO_2 emissions from the full value chain (aggregated from CO_2 source, capture, transport and storage). Downstream emissions associated with the produced oil in EOR projects to be excluded, but additional actual onsite CO_2 emissions created to produce incremental oil should be included.	
Data Capture Frequency:	Annually	

4.5.1 Total Project and Components

Breakdown of Total Project CO_2e Produced by Gas Type and Input								
Gas	**Natural Gas Use tCO_2e**	**Gasoline Use tCO_2e**	**Diesel Use tCO_2e**	**Power Use tCO_2e**	**Flaring tCO_2e**	**Fugitives tCO_2e**	**Misc- all to CO_2 tCO_2e**	**Total**
CO_2	1,017	60	0	92,241	782	0	0	94,099
CH4	56	7	0		137	0		199
N2O	8	0	0		4	0		12
TOTAL	1,081	66	0	92,241	922	0	0	94,310

Table 22- Total Project CO_2e Produced by Energy Source

Breakdown of RCRU CO_2e by Produced Gas Type and Input Use						
Gas Produced	**Natural Gas Use**	**Gasoline Use tCO_2e**	**Diesel Use tCO_2e**	**Power Use tCO_2e**	**Misc- all to CO_2 tCO_2e**	**Total**
CO_2	207.0			14,726		14,933
CH4	11.3					11.3
N2O	1.7					1.7
TOTAL	220.0	0.0	0.0	14,726	0.0	14,946

Table 23- RCRU CO_2e Produced by Energy Source

Breakdown of NWR CRU CO_2e Produced by Gas Type and Input (tonnes CO_{2e})						
Gas	**Natural Gas Use**	**Gasoline Use**	**Diesel Use**	**Power Use**	**Misc- all to CO_2**	**Total**
CO_2	5.1			34,675		34,680
CH_4	0.3					0.3
N_2O	0.0					0.0
TOTAL	5.4	0.0	0.0	34,675	0.0	34,680

Table 24- NWR CRU CO_2e Produced by Energy Source

Breakdown of Sturgeon Compressor Station CO_2e Produced by Gas Type and Input (tonnes CO_{2e})						
Gas	**Natural Gas Use**	**Gasoline Use**	**Diesel Use**	**Power Use**	**Misc- all to CO_2**	**Total**
CO_2	1.1			28,831		28,832
CH_4	0.1					0.1
N_2O	0.0					0.0
TOTAL	1.2	0.0	0.0	28,831	0.0	28,832

Table 25- SCS CO_2e Produced by Energy Source

Breakdown of ACTL Misc CO_2e Produced by Gas Type and Input (tonnes CO_{2e})						
Gas	**Natural Gas Use**	**Gasoline Use**	**Diesel Use**	**Power Use**	**Misc- all to**	**Total**
CO_2	0.0	59.6	0.0	21.7		81.3
CH_4	0.0	6.7	0.0			6.7
N_2O	0.0	0.2	0.0			0.2
TOTAL	0.0	66.4	0.0	21.7	0.0	88.2

Table 26- ACTL Misc. CO_2e Produced by Energy Source
** Gasoline use for fleet vehicles for WCS*

Breakdown of Clive CO_2e Produced by Gas Type and Input (tonnes CO_{2e})								
Gas	**Natural Gas Use**	**Gasoline Use**	**Diesel Use**	**Power Use**	**Flaring**	**Fugitive s**	**Misc- all to CO_2**	**Total**
CO_2	804.2			13,987	781.6	0.0		15,572
CH_4	43.9				136.5			180.4
N_2O	6.6				3.6			10.2
TOTAL	854.7	0.0	0.0	13,987	921.7	0.0	0.0	15,763

Table 27- Clive CO_2 EOR and Storage CO_2e Produced by Energy Source

Power use contributed to over 98% of Project total CO_{2e} emissions in 2022.

Monthly data for the Project components can be found in Appendix iii.

WCS's estimates full-year fugitive CO_{2e} emissions at its RCRU, SCS, and NWR CRU sites at 250 tonnes which is in line with previous estimates based on overall throughput during 2022. This amount is estimated based on operational facility losses and is not included in the tables above as the EOR protocol considers fugitives only at the storage site.

Enhance conducted extensive monitoring for fugitives at Clive in 2020 and concluded that there were none. All fittings on the injection system were checked for leaks during commissioning and again in August. Operations personnel also conduct ongoing visual (leaking high pressure CO_2 creates a frost coating at the leak point) and audible leak checks daily as they perform routine maintenance and inspections. A leak detection survey was performed at the Clive battery by TNT Electric and Controls on December 7, 2020, using a FLIR GF320 camera. The following areas were surveyed:

- Treater building
- Recycle Compressor
- Tank Farm
- FWKO Building
- QA Building
- VRU Compressor
- Water Injection Building
- Booster Compressor
- Inlet Header Area and pipe rack
- Line Heater

No leakage of any fresh injected or recycled CO_2 was detected.

TNT also performed leak checks at the three pads from which the horizontal injectors are drilled (06-02-040-24W4, 15-26-039-24W4 and 15-35-039-24W4). Wellheads, metering buildings and pipeline risers were inspected. No leaks were detected. Recycle gas is being blended into the injection stream as of October 2020; the H_2S content in this stream (which naturally occurs in the natural gas from the Leduc formation) will enhance leak detection on the injection system due to the strong odour from the H_2S.

Operational monitoring, using H_2S detectors located throughout the facility and olfactory detection by operations personnel, continued in 2022. No leaks were noted.

4.5.2 NWR Rectisol®

The calculated yearly CO_2 emissions from the NWR Rectisol® unit are shown in Table 28.

#	CO_2 Source	Kg/hr	Ton/Y
1	CO_2 in Rectisol® Raw Feed (based on normal capacity)	117,459	1,028,941
2	Planned CO_2 in Rectisol® Raw Feed	119,479	1,046,636
3	CO_2 emissions via Crude H_2 stream	-	-
4	CO_2 emissions via Acid Gas stream	3,833	33,579
5	CO_2 emissions via Sour Water stream	15	132
6	Total estimated CO_2 off gas available for capture	113,626	995,362

7	CO_2 emissions via CO_2 Offgas stream (based on downstream storage operating reliability)	4,041	35,396
8	Total estimated CO_2 emissions to atmosphere	7,889	69,107

Table 28- Calculated Annual CO_2 Emissions from Rectisol® Unit for 2022

Notes:

1. Based on 2022 environmental filing. This is sum of CO_2 to Wolf + venting via stack + CO_2 in Claus gas + CO_2 in sour water
2. This is based on prorating data from a month with minimal venting (July) and refinery at near full capacity. Deduction for 92.6% reliability and 55 days of 2022 TA is included. This is assumed to be better than using design data or budget data (budget provides only export target)
3. None per lab analysis
4. Based on actual flow and lab analysis
5. Actual sour water flow used, and previous years factor used, no analysis available
6. This is estimated as captured + vented CO_2 in Claus gas. CO_2 in Claus gas is not considered as available for capture
7. This is CO_2 vented via CO_2 stack
8. This is CO_2 vented via stack + CO_2 via Claus gas+ CO_2 venting via sour water

SECTION 4 CCS VALUE CHAIN		
Section 4.6 CO_2 Emissions Avoided		
Description:	Provide information on the CO_2 that would have been emitted if CCS had not been implemented vs. CO_2 emitted after CCS implementation. Include capture facility, pipelines and storage. Downstream emissions associated with the produced oil in EOR projects are to be excluded, but additional actual onsite CO_2 emissions created to produce incremental oil should be included.	
Purpose:	This documents the climate benefit of the CCS project.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Updated estimates of emissions avoided based on project experience and actual data. Downstream emissions associated with the produced oil in EOR projects to be excluded, but additional actual onsite CO_2 emissions created to produce incremental oil should be included.	Rationale for estimates
Data Capture Frequency:	Annually	

4.6.1 Quantitative

CO_2 avoided for each component of the Project is noted below. ACTL pipeline emissions totaling 90 tonnes in 2022 have been allocated to the CRU's and SCS based on throughput. The baseline emissions avoided in the individual tables are not additive and are based on CO_2 captured (per the EOR Protocol) but a project total is also included. The project total uses tonnes of CO_2 injected at Clive which does not equal the sum of throughput at the CRUs due to storage in the ACTL.

4.6.1.1 RCRU

The CO_2 emissions avoided at the Nutrien site are summarized in the table below. Project emissions are those directly associated with the RCRU plus allocated ACTL emissions.

Scenario	Estimated CO_2 (t/y)
Baseline emissions (CCS not implemented)	158,624
Project emissions (CCS implemented)	14,959
Avoided Emissions	143,664

Table 29- Emissions Avoided at Nutrien

4.6.1.2 NWR CRU-SCS

The estimated NWR CRU-SCS avoided CO_2 emissions described in Section 4.5 are shown in the table below. Project emissions are those directly associated with the NWR CRU and SCS plus allocated ACTL emissions.

Scenario	Estimated CO_2 (t/y)
Baseline emissions (CCS not implemented)	886,290
Project emissions (CCS implemented)	63,588
Avoided Emissions	822,702

Table 30- Emissions Avoided at NWR

4.6.1.3 Clive EOR and Storage

Baseline emissions are the mass injected at Clive in 2022 and do not match the sum of RCRU and NWR CRU-SCS baseline emissions due to storage in the ACTL. Project emissions are those directly associated with Clive storage operations.

Scenario	**Estimated CO_2 (t/y)**
Baseline emissions (CCS not implemented)	1,034,722
Project emissions (CCS implemented)	15,751
Avoided Emissions	1,018,971

Table 31- Emissions Avoided at Clive

4.6.1.4 ACTL Project

The total estimated avoided CO_2 emissions described in Section 4.5 are shown in the table below. Project emissions include direct emissions at RCRU, NWR CRU and SCS, Clive and ACTL miscellaneous.

Scenario	**Estimated CO_2 (t/y)**
Baseline emissions (CCS not implemented)	1,034,722
Project emissions (CCS implemented)	94,310
Avoided Emissions	940,412

Table 32- Total Emissions Avoided for the ACTL Project

4.6.2 Qualitative

4.6.2.1 Nutrien

The rationale for determining avoided CO_2 emissions is comparison between the project scenario, which includes carbon capture, and the baseline scenario, which does not include carbon capture and where CO_2 emissions are vented to the atmosphere.

4.6.2.2 NWR

The rationale for determining avoided CO_2 emissions is comparison between the project scenario, which includes carbon capture, and the baseline scenario, which does not include carbon capture and where CO_2 emissions are vented to the atmosphere.

Section 5.1 List of Standards and Rules Relevant for the Construction of the Project

Description:	List and describe relevant requirements and standards required in the construction of the project and identify any gaps.	
Purpose:	An overview of laws and regulations, standards and rules will be valuable for other CCS projects in Alberta and reduce project lead times. It will also help other stakeholders (NGOs, local communities); transparency is important for public engagement.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Updates as required	
Data Capture Frequency:	N/A	

A list of applicable laws, regulations, standards and rules for the construction phases of the project can be found in Section 5.1 of the 2020 detailed knowledge sharing report.

The project partners will continue to follow such laws, regulations, standards and rules (or as they are amended) for any further development. Such activity will be primarily related to expansion of the CO_2 EOR and storage project at Clive.

SECTION 5 REGULATORY APPROVALS - CAPTURE, TRANSPORTATION, STORAGE & CCS VALUE CHAIN		
Section 5.2 List of Consents/Permits Relevant for the Construction and Operation of the Project		
Description:	List regulatory requirements that have been granted or are needed to be obtained for the construction and operation of the project.	
Purpose:	An overview of consents/permits and approvals will be valuable for other CCS projects in Alberta and reduce project lead times. It will also help other stakeholders (NGOs, local communities); transparency is important for public engagement.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Updates as required	
Data Capture Frequency:	N/A	

No unusual hurdles were encountered throughout the application and approval process for the overall project.

NWR:

BODY/ACT/ REGULATION	APPROVAL/PERMIT/ DESCRIPTION	UPDATE/NOTES
Oil and Gas Conservation Act	Upgrader Approval No. 10994 dated September 6, 2007 / For construction and Operation of an oil sands bitumen upgrader, no expiry	All Approvals are held by North West Redwater Partnership Holdings Corp.
Environmental Protection and Enhancement Act	Approval No. 217118-00-00 dated September 20, 2007 to construct, operate and reclaim the facility, as amended occasionally to date. Approval expires September 1, 2017. Application for renewal was submitted September 1, 2016, with renewal commitment prior to Sept 1, 2017	The renewal was approved in 2017.
Water Act (Water Licence)	Approval No. 00227771-00-00 as amended occasionally to divert of water from site Precipitation and North Sask River for process. Approval expires September 1, 2017. Application for renewal was submitted September 1, 2016, with renewal commitment prior to Sept 1, 2017	The renewal was approved in 2017
Sturgeon County/Land Use Bylaw 819/96	Development and Building Permits 305-07-D0347 305-07-D0399 305-07-D0609 305-07-D0610 305-08-D0001 305-07-D0611 305-07-D0631	All Development Permits have been initiated and remain valid through to completion of Phase 1
Sturgeon County/The Inspections Group Inc/Safety Codes Act and Codes	Various Safety Codes Permits as required for gas fitting, plumbing, electrical per associate Codes, both for temporary and permanent	NWR applied for and is approved by the Safety Codes Council to administer Safety Codes Act approvals required

	facilities within the Refinery site. Hundreds of such permits are issued for various buildings and tasks throughout the site, and are considered routine	for the Project as at May 2013
Alberta Transportation Highways Development and Protection Act	Alberta Transportation/Highways Development and Protection Act Roadside Development Permit 2511/049/10 and RDP 2511/310/13	RDP 2511/049/10 and RDP 2511/310/13 have been issued in respect of the complete construction and operation of Phase 1 of the Project
Alberta Sustainable Resource Development/Public Lands Act	Temporary Field Authorizations for water course realignment TFA 126500 as issued November 19, 2012	Work under this TFA has been completed
Alberta Community Development/ Historical Resources Act	Clearance Letter (note that his resulted in the AER Public Interest Determination) Release Date: February 1, 2006 Release Date: November 29, 2006	Work under this clearance has been completed
Industry Canada/Radio Communication Act and Regulations	Mobile radio license for use by construction and Operations workforce	No Change
Alberta Energy Regulator – Pipeline Act	Pipeline licenses for lines across North Saskatchewan River as per recent Bennett Jones assistance re applications. Have been issued to NWU	All required Pipeline Licenses have been received and all off-site pipelines installed but not yet operational
Oil and Gas Conservation Act	Upgrader Approval No. 10994 dated September 6, 2007 / For construction and Operation of an oil sands bitumen upgrader, no expiry	All Approvals are held by North West Redwater Partnership Holdings Corp

Enhance/WCS:

Consent/Permit	General Timeline of Approval Receipt	Additional Hurdles Encountered
Canadian Environmental Assessment Agency ("CEAA")	Submitted: January 2010 Approved: September 7th, 2010	None
Development Permit (County Level)	Sturgeon County has confirmed that a development permit is not required.	None
Alberta Historical Resources Foundation ("AHRF")	Submitted: May 13th, 2009 Approved: August 17th, 2012 Approved: July 2, 2015 for routing amendments	On-going routing changes delayed application process
AER Directive 56 Pipeline Installation Approval **(includes Alberta Environment approval)**	Public consultation process: October 2008 – March 2009 Applied: March 20, 2009 Approved: April 26, 2011	On-going consultation required after approval

	License Number: 53252	
Conservation Reclamation Plan (Alberta Environment)	Submitted: March 18th, 2009 Approved: April 17th, 2013	None
Alberta Energy Regulator ("AER") (D-65 EOR Scheme)	Draft Application submitted in December 2013, reviewed by AER. Formal application submitted in December 2017. Approval No. 12832 received in December 2018 and amended to 12832B in October 2019. A number of amendments were made in 2020, 2021, and 2022, Approval No. 12832L issued in August being the last one in the year.	None
Alberta Energy Regulator ("AER")	Minor amendments to transmission and gathering line accepted September 2014; License #53252	None
Alberta Energy Regulator ("AER")	Minor compressor station (Nutrien Capture Facilities) amendments accepted October 2014; License #53252	None
Alberta Energy Regulator ("AER")	North Saskatchewan River spare pipeline approved November 2014; License #56775	None
Alberta Energy Regulator ("AER")	Above ground wastewater pipeline License #56821 Approval extended to December 4, 2018	None
Alberta Energy Regulator ("AER")	Minor amendments to transmission and gathering line accepted September 2014; Licence #53252	None
Alberta Energy Regulator ("AER")	Minor compressor station (Nutrien Capture Facilities) amendments accepted October 2014; Licence #53252	None
Alberta Energy Regulator ("AER")	Above ground low pressure CO_2 source pipeline License	None

	#56943 Approval extended to January 9, 2019	
Alberta Energy Regulator ("AER")	Spare pipeline under North Saskatchewan River License #56775 Approval extended to November 21, 2018	None
AER Directive 56 Pipeline Installation Approval	Public consultation process: April – June 2019 Applied: June 11, 2019 Approved: June 24, 2019 License Number: 61061	None
AER Directive 56 Pipeline Installation Approval	Public consultation process: April – June 2019 Applied: June 11, 2019 Approved: June 24, 2019 License Number: 61062	None
AER Directive 56 Pipeline Installation Approval	Public consultation process: April – June 2019 Applied: June 11, 2019 Approved: June 24, 2019 License Number: 61063	None
Environmental Enhancement and Protection Act (EPEA)	Applied: April 5, 2019. Approved: April 9, 2019. Approval no. 253976-00-00 extended to April 17, 2020. Approval 253976-00-00 was renewed by the Alberta Energy Regulator as Approval 253976-01-00, which carries a new expiry date of January 31, 2025.	None
Alberta Energy Regulator ("AER")	Minor amendments to transmission and gathering line accepted September 2014; Licence #53252	None
AER Directive 56 Pipeline Installation Approval	Public consultation process: April – June 2019 Applied: June 14, 2019 Approved: June 27, 2019 License Number: 61067	None

AER Directive 56 Pipeline Installation Approval	Public consultation process: April – June 2019 Applied: June 14, 2019 Approved: July 11, 2019 Amended for system expansion: May 10, 2022 License Number: 61114	None
AER Directive 56 Pipeline Installation Approval	Public consultation process: April – June 2019 Applied: June 14, 2019 Approved: July 11, 2019 Amended for system expansion: December 2, 2020 License Number: 61115	None
AER Directive 56 Pipeline Installation Approval	Public consultation process: April – May 2019 Applied: June 17, 2019 Approved: June 25, 2019 License Number: F8154	None
Environmental Enhancement and Protection Act (EPEA)	Applied: April 5, 2019. Approved: April 9, 2019. Approval no. 253976-00-00 extended to April 17, 2020	Amended to Approval No. 00253976-01-00 and extended to Jan 31, 2025
Measurement, Monitoring and Verification (MMV) Plan as required by CCS Funding Agreement – The Alberta Carbon Trunk Line, September 24, 2010 and subsequent amendments	Applied May 2018 and July 2019. Approved November 2019. Updated plan approved by Alberta Energy April 2021.	Original plan required updates to geomechanical studies which were completed and approved. Updated plan covers flood area expansion; no issues.

The project partners will continue to re-apply for any required consents/permits that may expire and for any consents/permits required for expansions (primarily related to expansion of the CO_2 EOR and storage project at Clive).

Section 6 .1 CAPEX and OPEX

Description: Full CCS value chain investment should be reflected.

Capital and operational cost estimates on CO_2 capture, with consistent methodology for all projects, should be provided. Break down of cost structure: capture technology and utility systems (technology building blocks).

Estimates on the total capital cost and total yearly operational cost of the pipeline are required. The interfaces between capture and pipeline, and between pipeline and storage, have to be clearly defined. Estimates on the total capital cost and total yearly operational costs of storage sites including surface facilities and injection wells are required.

Purpose: It is important to get real cost data available in the public domain. This is relevant for benchmarking different technologies in other CCS projects and for informing the public of the cost of capturing CO_2. It is also relevant for benchmarking different technologies and project costs. This information will also inform stakeholders, industry, and R&D of the total cost of a full CCS project.

Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Actual Capex and Opex (same breakdown as for before operation reporting). Actual Capex and Opex spending profile and Canadian content of investment (in per cent of total Capex and Opex). Estimated Opex for next operational year. Actual cost of full capture facility, pipeline, and storage {e.g., [(Total Annual Capital Cost + Total Annual Operating Cost) / Total mass of CO_2 (tonnes) used for CCS operation]	Rationales for the financial estimates of the capture facility, and the full value chain Explain impacts upon base facility Report lessons learned Impact of foreign exchange on hedging activities
Data Capture Frequency:	Annually	

6.1.1 Enhance-WCS

6.1.1.1 Operating Cost

Actual operating costs for 2022 have been provided in the below tables. The major cost for the compression facilities is the required power for compression of the CO_2 from very low pressure to ACTL line pressure.

Project Component	2022 Operating Cost Actual ($mm)	2023 Operating Cost Estimated ($mm)
RCRU (including disposal well) and NWR CRU		
Energy	$15.68	$21.78
Maintenance and Repair	$1.61	$1.53
Labour, Regulatory, Administration	$0.49	$0.44
Maintenance Capital and Turnaround	$0.08	$-
Sub-Total	$17.86	$23.75
SCS and ACTL		
Energy	$7.67	$10.51
Maintenance and Repair	$2.00	$1.67
Labour, Regulatory, Administration	$0.81	$2.71
Maintenance Capital and Turnaround	$1.29	$1.2
Sub-Total	$11.77	$16.08
Storage (Clive)		
Energy	$6.36	$6.64
Maintenance and Repair	$2.33	$2.43
Labour, Regulatory, Administration	$1.26	$1.31
Monitoring, Measurement and Verification	$1.16	$2.24
Sub-Total	$11.11	$12.62
TOTAL	$40.74	$52.45

Table 33- Enhance/WCS 2022 and 2023 Operating Costs

6.1.1.2 Capital Costs

CAPEX

Capital Cost Estimates	Total ($MM)	Spend to Date ($MM)	Forecast to Complete ($MM)
Plant #1 Tie-In	$8.2	$6.6	$1.6
RCRU	$68	$68	$0
SCS and NWR CRU	$95	$95	$0
Pipeline	$326	$326	$0
Clive CO_2 Injection	$108	$57	$51
Total	$605.2	$552.6	$52.6

Table 34 - Enhance/WCS Capital Costs

Costs spent on the system through the end of 2022 are shown above. The existing CRU's, SCS and pipeline are complete; no further CAPEX is expected. Work is underway to tie-in the Nutrien Plant #1 CO_2 supply to the RCRU as contemplated in the original Project Funding Proposal. This project entails installation of an electrically driven blower and associated inlet and outlet piping to move CO_2 rich off-gas from Plant #1 to the existing RCRU. Currently installed dehydration and compression equipment at the RCRU does not require modification based on expected output from the existing Nutrien supply and the added Plant #1 volumes. The project is scheduled to be completed in 2023. Costs for this work are shown as a separate line item.

Plot plans, process flow diagrams, heat and material balance and project schedule are included in Appendix ix.

Additional CAPEX will be spent at Clive as the CO_2 EOR and storage area expands with future development.

Canadian Content
Significant amount of capital was sourced from Canada. See Section 6 of the 2020 detailed report for more specifics. Parties continue to utilize local resources whenever possible for operations and maintenance.

6.1.1.3 NWR Rectisol®

NWR Rectisol® Unit

The Rectisol® unit co-produces H_2, CO_2 and H_2S product streams as part of a highly integrated design complex in an industrial greenfield setting. While the CAPEX and OPEX cost estimates for the Rectisol® unit are useful for informational purposes, it would be inappropriate for use in benchmarking or direct comparison against other carbon capture technologies with unrelated objectives or in brownfield applications.

CAPEX

The Rectisol® cost at YE 2022 is shown in Table 35.

$ Millions	
DBM/EDS Engineering	$6.1
Detailed Engineering	$65.8
Equipment & Material	$176.1
Construction, Commissioning & Startup	$134.4
Total	**$382.4**

Table 35 Rectisol® CAPEX at YE 2020

Canadian Content
The Rectisol unit was built in modules which were imported to Canada and transported to site. The construction, commissioning, and startup elements of the capital cost breakdown above were all awarded to local Canadian companies including its primary contractor in these areas (PCL) although many other local contractors contributed to this activity.

OPEX

The operating cost of the Rectisol® unit is provided for informational purposes and should not be used for comparing or benchmarking against other CCS projects.

OPEX
Actual OPEX for 2022 is shown in Table 36 following.

Project Component	2022 Operating Cost Actual ($mm)	2023 Operating Cost Estimated ($mm)
Rectisol® Unit		
Energy	$9.55	$14.37
Maintenance and Repair	$9.83	$2.13
Labour, Regulatory, Administration	$3.39	$3.53
Total	**$22.77**	**$20.03**

Table 36- 2022 and 2023 Rectisol OPEX

SECTION 6	ECONOMICS – CAPTURE, TRANSPORTATION, STORAGE & CCS VALUE CHAIN	
Section 6.2	Revenues for Capture, Transportation and Storage	
Description:	Provide revenues generated from capture operations, pipeline transport, and storing CO_2. The information should include the CCS revenue that each tonne of captured, transported, and injected/stored CO_2 would generate. Revenue will be presented in terms of industry benchmarks so that confidential commercial information is not divulged. Revenues from base plant operations are not required (*e.g.*, power plant, upgrader or industry process is not included).	
Purpose:	This information is relevant for understanding the financial drivers in CCS projects. It also informs stakeholders, industry, and R&D of the potential incomes of a full CCS project.	
Reporting Requirements:	**Quantitative Data/Information**	**Qualitative Knowledge**
During Operations:	Full CCS project revenues (same breakdown as before operation reporting). Revenue profile. Full CCS project revenues (same breakdown as before operation reporting). Revenue profile.	Rationales for the financial estimates of the capture facility Lessons learned
Data Capture Frequency:	Annually and updated as necessary	

No industry benchmarks are available, as the CCS industry is still in its preliminary stages and commercial agreements for capture, transport and storage are considered commercially confidential. Therefore, revenue cannot be presented in terms of industry benchmarks at this time. It is not possible to predict when or if an open commercial market will develop that would allow benchmarking.

Enhance and NWR have received $63mm of Federal funding through the ecoETI and CEF programs to date. NWR and Enhance have received $326mm of Provincial funding under the ACTL CCS agreement to YE 2022. A total of $169mm remains to be disbursed to NWR and Enhance as annual payments under the Remaining Collective Funding provisions of the Provincial funding agreement. Payments are calculated based on net CO2 stored in the preceding year. NWR received $3.81 mm and Enhance received $11.44 mm in 2022 based on net CO2 stored from the start of Commercial Operations in 2020. The Project also received $3.05 mm funding in 2022 through the Provincial Sector-specific Industrial Energy Efficiency (SIEE) Program to partially offset costs of the Nutrien Plant #1 tie-in.

At present, the only other potential revenue source is CO_2 storage credits available through the Alberta Emission Offset System (https://www.alberta.ca/alberta-emission-offset-system.aspx). Revenue generated through the offset credits from the Project are commercial confidential.

Approximately 937,000 tonnes of CO_2 credits have been serialized for the period January 1, 2022, through December 31, 2022.

APPENDIX I- ACTL Project Gas Analyses **Submitted on March 31, 2023**

Clive CO2 Injection Well

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

07000560A	EE140705621W4MFIT0210G		000189030	22ER974233A	22ER974582A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						1240	1500	9	22
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Dec 30, 2022 8:40	Jan 04, 2023	Jan 13, 2023	Jan 13, 2023	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUBE = 0PPM; CC:22CLV001; CO2 CONTENT = 91.82%

COMPOSITION

Component	Mole Fraction		Liquid Volume mL / m³	Mole Fraction of Previous Analysis
	Air Free As Received	Air & Acid Gas Free As Received		
H_2	0.00732	0.84658		0.00673
He	0.00000	0.00000		0.00000
N_2	0.00052	0.06062		0.00051
CO_2	0.99135	0.00000		0.99210
H_2S	0.00000	0.00000		0.00000
C_1	0.00073	0.08392		0.00050
C_2	0.00002	0.00233	0.1	0.00003
C_3	0.00001	0.00073	TRACE	0.00001
iC_4	0.00001	0.00148	0.1	0.00002
nC_4	0.00001	0.00149	0.1	0.00001
iC_5	0.00001	0.00107	TRACE	0.00001
nC_5	0.00002	0.00177	0.1	0.00001
C_6	0.00000	0.00000	0.0	0.00001
C_7+	0.00000	0.00000	0.0	0.00006
TOTAL	1.00000	1.00000	0.3	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.13	14.39	**0.11**	12.44
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.508	0.181	0.0	1.847
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7328.27	301.98	1740.18	55.29
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
0				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.67	0.00
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

129.13
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

07000560A	EE140705621W4MFIT		000189030	22ER974233A	22ER974582A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

11001463A	EE140705621W4MFIT0210G		000189030	22ER915639A	22ER974233A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						1225	1200	9	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Nov 28, 2022 10:45	Nov 29, 2022	Dec 05, 2022	Dec 05, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00673	0.85307		0.00744
He	0.00000	0.00000		0.00000
N_2	0.00051	0.06428		0.00045
CO_2	0.99210	0.00000		0.99137
H_2S	0.00000	0.00000		0.00000
C_1	0.00050	0.06359		0.00074
C_2	0.00003	0.00399	0.1	0.00000
C_3	0.00001	0.00143	TRACE	0.00000
iC_4	0.00002	0.00267	0.1	0.00000
nC_4	0.00001	0.00106	TRACE	0.00000
iC_5	0.00001	0.00094	TRACE	0.00000
nC_5	0.00001	0.00095	TRACE	0.00000
C_6	0.00001	0.00112	TRACE	0.00000
C_7+	0.00006	0.00690	0.3	0.00000
TOTAL	1.00000	1.00000	0.7	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.12	15.31	**0.11**	13.43

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.509	0.201	762.8	1.849

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7332.19	302.18	1697.62	57.15

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.71	95.15

Calculated Vapour Pressure

40.76
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

PROPERTIES OF C6+ FRACTION

Version: 1

11001463A	EE140705621W4MFIT		000189030	22ER915639A	22ER974233A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00007	0.00802	0.3344
68.9+	C_7+	Heptanes+	0.00006	0.00690	0.2861
98.6+	C_8+	Octanes+	0.00003	0.00366	0.1480
125.8+	C_9+	Nonanes+	0.00000	0.00016	0.0065
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00003	0.00324	0.1381
98.6 - 125.8	C_8	Octanes	0.00003	0.00350	0.1415
125.8 - 150.9	C_9	Nonanes	0.00000	0.00016	0.0065
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00008	0.0030
68.73	C_6	n-Hexane	0.00001	0.00105	0.0453
71.83	C_6	Methylcyclopentane	0.00001	0.00092	0.0391
80.06	C_6	Benzene	0.00000	0.00032	0.0093
80.78	C_6	Cyclohexane	0.00001	0.00109	0.0452
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00002	0.00256	0.1084
110.61	C_7	Toluene	0.00001	0.00094	0.0330
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00011	0.0046
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

04000687A	EE140705621W4MFIT0210G		000189030	22ER911802B	22ER915639A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Pressure (kPa) Received	Temperature (°C) Source	Temperature (°C) Received
						1240	1350	21	23

Jul 22, 2022 9:00	Jul 25, 2022	Jul 29, 2022	Jul 29, 2022	Grande Prairie - Yonghui Sun - Laboratory
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : CC: 22CLV001

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00744	0.86209		0.00509
He	0.00000	0.00000		0.00000
N_2	0.00045	0.05230		0.00043
CO_2	0.99137	0.00000		0.99361
H_2S	0.00000	0.00000		0.00000
C_1	0.00074	0.08561		0.00070
C_2	0.00000	0.00000	0.0	0.00004
C_3	0.00000	0.00000	0.0	0.00001
iC_4	0.00000	0.00000	0.0	0.00001
nC_4	0.00000	0.00000	0.0	0.00001
iC_5	0.00000	0.00000	0.0	0.00001
nC_5	0.00000	0.00000	0.0	0.00001
C_6	0.00000	0.00000	0.0	0.00002
C_7+	0.00000	0.00000	0.0	0.00006
TOTAL	1.00000	1.00000	0.0	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.12	13.63	**0.10**	11.73

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.508	0.158	0.0	1.847

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7328.02	301.95	1704.99	51.54

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.67	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

04000687A	EE140705621W4MFIT		000189030	22ER911802B	22ER915639A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

13000554B	EE140705621W4MFIT0210G		000189030	22ER893697A	22ER911802B
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	Sampling Point	Unique Well Identifier

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	Well License	Well Status	Well Fluid Status	LSD

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						1240	1200	19	21
From :	To:	Test Type	Test No.	KB	GRD	Source	Received	Source	Received

Jun 23, 2022 13:25	Jun 27, 2022	Jun 29, 2022	Jun 29, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00509	0.79454		0.00606
He	0.00000	0.00000		0.00000
N_2	0.00043	0.06725		0.00044
CO_2	0.99361	0.00000		0.99299
H_2S	0.00000	0.00000		0.00000
C_1	0.00070	0.10875		0.00048
C_2	0.00004	0.00581	0.1	0.00000
C_3	0.00001	0.00226	0.1	0.00000
iC_4	0.00001	0.00230	0.1	0.00003
nC_4	0.00001	0.00178	TRACE	0.00000
iC_5	0.00001	0.00134	TRACE	0.00000
nC_5	0.00001	0.00198	0.1	0.00000
C_6	0.00002	0.00362	0.1	0.00000
C_7+	0.00006	0.01039	0.4	0.00000
TOTAL	1.00000	1.00000	0.9	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.12	17.95	**0.10**	15.85

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.512	0.252	732.0	1.852

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7341.73	302.62	1876.81	68.99

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.77	98.25

Calculated Vapour Pressure

43.41
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

13000554B	EE140705621W4MFIT		000189030	22ER893697A	22ER911802B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00008	0.01401	0.5014
68.9+	C_7+	Heptanes+	0.00006	0.01039	0.3768
98.6+	C_8+	Octanes+	0.00002	0.00423	0.1560
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00004	0.00616	0.2207
98.6 - 125.8	C_8	Octanes	0.00002	0.00423	0.1560
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00065	0.0204
68.73	C_6	n-Hexane	0.00001	0.00214	0.0755
71.83	C_6	Methylcyclopentane	0.00001	0.00147	0.0508
80.06	C_6	Benzene	0.00000	0.00040	0.0097
80.78	C_6	Cyclohexane	0.00001	0.00144	0.0484
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00053	0.0238
100.94	C_7	Methylcyclohexane	0.00001	0.00172	0.0592
110.61	C_7	Toluene	0.00001	0.00089	0.0255
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

EXTENDED GAS ANALYSIS

AGAT Laboratories

Version: 1

04000486A	EE140705621W4MFIT0210G		000189030	22ER886123B	22ER893697A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						1235	1200	18	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

May 24, 2022 9:30	May 25, 2022	May 30, 2022	May 30, 2022	Calgary - Svetlana Nikolic - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00606	0.86426		0.00698
He	0.00000	0.00000		0.00000
N_2	0.00044	0.06286		0.00131
CO_2	0.99299	0.00000		0.99097
H_2S	0.00000	0.00000		0.00000
C_1	0.00048	0.06865		0.00072
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00003	0.00423	0.1	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00001
C_6	0.00000	0.00000	0.0	0.00001
C_7+	0.00000	0.00000	0.0	0.00000
TOTAL	1.00000	1.00000	0.1	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.10	13.53	**0.08**	11.65

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.510	0.167	0.0	1.850

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7337.05	302.36	1681.05	51.43

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
			0	0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.74	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number
04000486A	EE140705621W4MFIT		000189030	22ER886123B	22ER893697A

Operator Name	Sampling Point	Unique Well Identifier
ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4

Well Name	Well License	Well Status	Well Fluid Status	LSD
SCS14-7 CO2 METER -091-FIT-0210				

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

00012326B	EE140705621W4MFIT0210G		000189030	22ER869991E	22ER886123B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						1230	1300	12	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Apr 21, 2022 8:10	Apr 22, 2022	Apr 27, 2022	Apr 27, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUBE = 0ppm; CO2 CONTENT = 99.10% (FREE AIR)

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00698	0.77293		0.00751
He	0.00000	0.00000		0.00000
N_2	0.00131	0.14539		0.00013
CO_2	0.99097	0.00000		0.99027
H_2S	0.00000	0.00000		0.00000
C_1	0.00072	0.07969		0.00085
C_2	0.00000	0.00000	0.0	0.00003
C_3	0.00000	0.00000	0.0	0.00002
iC_4	0.00000	0.00000	0.0	0.00002
nC_4	0.00000	0.00000	0.0	0.00002
iC_5	0.00000	0.00055	TRACE	0.00002
nC_5	0.00001	0.00079	TRACE	0.00002
C_6	0.00001	0.00066	TRACE	0.00020
C_7+	0.00000	0.00000	0.0	0.00091
TOTAL	1.00000	1.00000	0.1	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: N2, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.12	12.65	**0.10**	10.90

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.508	0.244	0.0	1.847

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7327.36	301.93	1883.12	60.15

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight

(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.68	0.00

Calculated Vapour Pressure

99.59
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

00012326B	EE140705621W4MFIT		000189030	22ER869991E	22ER886123B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00001	0.00066	0.0325
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00001	0.00066	0.0325
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

Container Identification	13000601E
Sample Point Code	EE140705621W4MFIT0210G
Meter Code	
AGAT WDMS Number	000189030
Previous Number	22ER867166A
Laboratory Number	22ER869991E
Operator Name	ENHANCE ENERGY INC
Sampling Point	METER 091-FIT- 0210
Unique Well Identifier	14-07-056-21W4
Well Name	SCS14-7 CO2 METER -091-FIT-0210
Well License	
Well Status	
Well Fluid Status	
LSD	
Field or Area	REDWATER
Pool or Zone	NOT APPLICABLE
Sampler's Company	AGAT RED DEER
Name of Sampler	BA
Test Interval (mKB) From : / To:	
Test Type	
Test No.	
Elevation (m) KB / GRD	
Pressure (kPa) Source / Received	1230 / 1250
Temperature (°C) Source / Received	8 / 22
Date/Time Sampled	Mar 11, 2022 9:45
Date Received	Mar 14, 2022
Date Analyzed	Mar 17, 2022
Date Reported	Mar 17, 2022
Location - Approved By - Title	Calgary - Bernie Diep - Supervisor

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00751	0.76978		0.00766
He	0.00000	0.00000		0.00000
N_2	0.00013	0.01380		0.00018
CO_2	0.99027	0.00000		0.99132
H_2S	0.00000	0.00000		0.00000
C_1	0.00085	0.08696		0.00080
C_2	0.00003	0.00350	0.1	0.00004
C_3	0.00002	0.00184	0.1	0.00000
iC_4	0.00002	0.00232	0.1	0.00000
nC_4	0.00002	0.00256	0.1	0.00000
iC_5	0.00002	0.00178	0.1	0.00000
nC_5	0.00002	0.00207	0.1	0.00000
C_6	0.00020	0.02087	1.1	0.00000
C_7+	0.00091	0.09452	5.3	0.00000
TOTAL	1.00000	1.00000	7.0	1.00000

WDMS Data Verification Check

Exceeded compare limits: C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

	Air Free as Received	Moisture & Acid Gas Free
Gross	**0.36**	37.21
Net	**0.33**	33.70

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.510	0.539	754.7	1.850

Calculated Pseudo Critical Properties

	pPc (kPa)	pTc (K)
As Sampled	7322.98	302.27
Acid Gas Free	1840.12	113.92

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.73	103.13

Calculated Vapour Pressure

20.14
C_5+(kPa)

Gas Compressibility

0.9942
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

13000601E	EE140705621W4MFIT		000189030	22ER867166A	22ER869991E
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00111	0.11538	6.4286
68.9+	C_7+	Heptanes+	0.00091	0.09452	5.3183
98.6+	C_8+	Octanes+	0.00055	0.05708	3.2962
125.8+	C_9+	Nonanes+	0.00019	0.02075	1.3158
150.9+	C_{10}+	Decanes+	0.00005	0.00571	0.4013
174.3+	C_{11}+	Undecanes+	0.00000	0.00053	0.0432
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00036	0.03743	2.0221
98.6 - 125.8	C_8	Octanes	0.00036	0.03634	1.9804
125.8 - 150.9	C_9	Nonanes	0.00014	0.01504	0.9145
150.9 - 174.3	C_{10}	Decanes	0.00005	0.00504	0.3502
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00053	0.0432
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00001	0.00103	0.0488
68.73	C_6	n-Hexane	0.00012	0.01259	0.6745
71.83	C_6	Methylcyclopentane	0.00005	0.00528	0.2776
80.06	C_6	Benzene	0.00004	0.00433	0.1577
80.78	C_6	Cyclohexane	0.00009	0.00898	0.4595
99.24	C_8	2,2,4-Trimethylpentane	0.00001	0.00130	0.0879
100.94	C_7	Methylcyclohexane	0.00013	0.01324	0.6933
110.61	C_7	Toluene	0.00011	0.01098	0.4790
136.16	C_8	Ethylbenzene	0.00001	0.00090	0.0452
138.33 ; 139.09	C_8	m&p-Xylene	0.00004	0.00390	0.1972
144.42	C_8	o-Xylene	0.00001	0.00131	0.0647
169.34	C_9	1,2,4-Trimethylbenzene	0.00001	0.00067	0.0437

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number
05003731A	EE140705621W4MFIT0210G		000189030	22ER856651A	22ER867166A

Operator Name	Sampling Point	Unique Well Identifier
ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4

Well Name	Well License	Well Status	Well Fluid Status	LSD
SCS14-7 CO2 METER -091-FIT-0210				

Field or Area	Pool or Zone	Sampler's Company	Name of Sampler
REDWATER	NOT APPLICABLE	AGAT RED DEER	BA/BB

Test Interval (mKB) From :	Test Interval (mKB) To:	Test Type	Test No.	Elevation (m) KB	Elevation (m) GRD	Pressure (kPa) Source	Pressure (kPa) Received	Temperature (°C) Source	Temperature (°C) Received
						1230	1350	9	21

Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Feb 25, 2022 8:50	Feb 28, 2022	Mar 04, 2022	Mar 04, 2022	Calgary - Gerry Ecker - Reporter

Other Information : O2 = 138 ppm

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00766	0.88164		0.00649
He	0.00000	0.00000		0.00000
N_2	0.00018	0.02126		0.00077
CO_2	0.99132	0.00000		0.98760
H_2S	0.00000	0.00000		0.00000
C_1	0.00080	0.09160		0.00061
C_2	0.00004	0.00494	0.2	0.00008
C_3	0.00000	0.00056	TRACE	0.00002
iC_4	0.00000	0.00000	0.0	0.00006
nC_4	0.00000	0.00000	0.0	0.00028
iC_5	0.00000	0.00000	0.0	0.00072
nC_5	0.00000	0.00000	0.0	0.00096
C_6	0.00000	0.00000	0.0	0.00093
$C_{7}+$	0.00000	0.00000	0.0	0.00148
TOTAL	1.00000	1.00000	0.2	1.00000

WDMS Data Verification Check

Exceeded compare limits: IC5, NC5, C6, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.13	14.47	**0.11**	12.48

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.508	0.139	0.0	1.847

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7327.52	301.93	1679.27	51.12

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.66	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

05003731A	EE140705621W4MFIT		000189030	22ER856651A	22ER867166A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05003080A	EE140705621W4MFIT0210G		000189030	21ER848629A	22ER856651A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						1240	1260	10	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Jan 26, 2022 9:10	Jan 28, 2022	Feb 03, 2022	Feb 03, 2022	Calgary - Svetlana Nikolic - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : LAB CO2 BY GC = 93.21%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00649	0.52384		0.00709
He	0.00000	0.00000		0.00000
N_2	0.00077	0.06231		0.00243
CO_2	0.98760	0.00000		0.98955
H_2S	0.00000	0.00000		0.00000
C_1	0.00061	0.04933		0.00068
C_2	0.00008	0.00633	0.3	0.00000
C_3	0.00002	0.00127	0.1	0.00001
iC_4	0.00006	0.00487	0.3	0.00008
nC_4	0.00028	0.02283	1.2	0.00004
iC_5	0.00072	0.05848	3.5	0.00000
nC_5	0.00096	0.07720	4.6	0.00000
C_6	0.00093	0.07623	5.1	0.00001
C_{7+}	0.00148	0.11730	8.2	0.00011
TOTAL	1.00000	1.00000	23.3	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: IC5, NC5, C6, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.86	69.44	**0.80**	64.26
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.515	1.151	733.6	1.856
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_{7}+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7313.76	303.03	2274.48	215.44
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
			0	0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.88	98.58
Total Sample	*C_{7}+ Fraction*

Calculated Vapour Pressure

68.97
C_5+(kPa)

Gas Compressibility

0.9940
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

05003080A	EE140705621W4MFIT		000189030	21ER848629A	22ER856651A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 091-FIT- 0210	14-07-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

SCS14-7 CO2 METER -091-FIT-0210				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00241	0.19354	13.3624
68.9+	C_7+	Heptanes+	0.00148	0.11730	8.2396
98.6+	C_8+	Octanes+	0.00059	0.04700	3.3434
125.8+	C_9+	Nonanes+	0.00005	0.00352	0.2689
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00089	0.07030	4.8963
98.6 - 125.8	C_8	Octanes	0.00054	0.04348	3.0744
125.8 - 150.9	C_9	Nonanes	0.00005	0.00352	0.2689
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00009	0.00766	0.4625
68.73	C_6	n-Hexane	0.00042	0.03422	2.3279
71.83	C_6	Methylcyclopentane	0.00016	0.01279	0.8536
80.06	C_6	Benzene	0.00008	0.00625	0.2894
80.78	C_6	Cyclohexane	0.00016	0.01277	0.8305
99.24	C_8	2,2,4-Trimethylpentane	0.00005	0.00376	0.3232
100.94	C_7	Methylcyclohexane	0.00025	0.01991	1.3242
110.61	C_7	Toluene	0.00010	0.00834	0.4621
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00002	0.00126	0.0812
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

13000553B	EE041705621W4MFIT4116G		000201859	22ER945731A	22ER974233B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				*Elevation (m)*		*Pressure (kPa)*		*Temperature (°C)*	
						4200	11500	-10	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Nov 28, 2022 11:10	Nov 29, 2022	Dec 05, 2022	Dec 05, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00419	0.74690		0.00866
He	0.00000	0.00000		0.00000
N_2	0.00124	0.22063		0.00168
CO_2	0.99439	0.00000		0.98953
H_2S	0.00000	0.00000		0.00000
C_1	0.00016	0.02851		0.00013
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00001	0.00193	TRACE	0.00000
iC_4	0.00001	0.00143	TRACE	0.00000
nC_4	0.00000	0.00060	TRACE	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00000	0.00000	0.0	0.00000
TOTAL	1.00000	1.00000	0.1	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.06	10.52	**0.05**	9.00
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.513	0.288	0.0	1.853
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7346.14	302.76	1878.23	59.62
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
0				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.81	0.00
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

13000553B	EE041705621W4MFIT		000201859	22ER945731A	22ER974233B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05003372A	EE041705621W4MFIT4116G		000201859	22ER937524A	22ER945731A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						4100	6500	-10	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Sep 21, 2022 9:45	Sep 22, 2022	Sep 27, 2022	Sep 27, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00866	0.82705		0.00796
He	0.00000	0.00000		0.00000
N_2	0.00168	0.16046		0.00171
CO_2	0.98953	0.00000		0.99019
H_2S	0.00000	0.00000		0.00000
C_1	0.00013	0.01249		0.00014
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00000	0.00000	0.0	0.00000
TOTAL	1.00000	1.00000	0.0	1.00000

WDMS Data Verification Check ✔

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.11	10.45	**0.09**	8.88

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.506	0.220	0.0	1.845

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7317.46	301.47	1689.93	50.09

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.62	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

05003372A	EE041705621W4MFIT		000201859	22ER937524A	22ER945731A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

13001172A	EE041705621W4MFIT4116G		000201859	22ER915639B	22ER937524A
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	Sampling Point	Unique Well Identifier

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	Well License	Well Status	Well Fluid Status	LSD

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						4100	5100	-10	21
From :	To:	Test Type	Test No.	KB	GRD	Source	Received	Source	Received

Aug 30, 2022 9:55	Sep 01, 2022	Sep 07, 2022	Sep 07, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information : CC: 22CLV001

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00796	0.81126		0.00917
He	0.00000	0.00000		0.00000
N_2	0.00171	0.17481		0.00209
CO_2	0.99019	0.00000		0.98626
H_2S	0.00000	0.00000		0.00000
C_1	0.00014	0.01393		0.00013
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00000	0.00000	0.0	0.00235
TOTAL	1.00000	1.00000	0.0	1.00000

WDMS Data Verification Check

Exceeded compare limits: C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.10	10.32	**0.09**	8.77

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.507	0.233	0.0	1.846

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7321.56	301.65	1724.52	51.65

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.64	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

13001172A	EE041705621W4MFIT		000201859	22ER915639B	22ER937524A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

04000832B	EE041705621W4MFIT4116G		000201859	22ER911802A	22ER915639B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Received	Temperature (°C) Source	Received
						4050	7000	-10	23

Jul 22, 2022 9:30	Jul 25, 2022	Jul 29, 2022	Jul 29, 2022	Grande Prairie - Yonghui Sun - Laboratory
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : CC: 22CLV001

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00917	0.66690		0.01686
He	0.00000	0.00000		0.00000
N_2	0.00209	0.15169		0.00292
CO_2	0.98626	0.00000		0.97900
H_2S	0.00000	0.00000		0.00000
C_1	0.00013	0.00977		0.00022
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00235	0.17164	13.5	0.00100
TOTAL	1.00000	1.00000	13.5	1.00000

WDMS Data Verification Check

Exceeded compare limits: C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.61	44.32	**0.55**	39.83

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.510	0.844	807.1	1.850

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7303.21	301.96	2010.59	146.41

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.74	108.87

Calculated Vapour Pressure

4.47
C_5+(kPa)

Gas Compressibility

0.9940
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

04000832B	EE041705621W4MFIT		000201859	22ER911802A	22ER915639B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00235	0.17164	13.4624
68.9+	C_7+	Heptanes+	0.00235	0.17164	13.4624
98.6+	C_8+	Octanes+	0.00235	0.17164	13.4624
125.8+	C_9+	Nonanes+	0.00120	0.08796	7.9565
150.9+	C_{10}+	Decanes+	0.00032	0.02349	2.3731
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00115	0.08368	5.5059
125.8 - 150.9	C_9	Nonanes	0.00088	0.06448	5.5834
150.9 - 174.3	C_{10}	Decanes	0.00032	0.02349	2.3731
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00100	0.07256	4.4612
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00029	0.02106	1.5000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05002786A	EE041705621W4MFIT4116G		000201859	22ER893697B	22ER911802A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						4050	6100	-10	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Jun 23, 2022 13:45	Jun 27, 2022	Jun 29, 2022	Jun 29, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.01686	0.80248		0.01484
He	0.00000	0.00000		0.00000
N_2	0.00292	0.13890		0.00280
CO_2	0.97900	0.00000		0.98220
H_2S	0.00000	0.00000		0.00000
C_1	0.00022	0.01057		0.00016
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00100	0.04805	5.8	0.00000
TOTAL	1.00000	1.00000	5.8	1.00000

WDMS Data Verification Check

Exceeded compare limits: C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.43	20.14	**0.37**	17.72

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.496	0.377	803.9	1.832

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7258.41	299.32	1732.91	75.06

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.31	109.26

Calculated Vapour Pressure

4.08
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

05002786A	EE041705621W4MFIT		000201859	22ER893697B	22ER911802A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00100	0.04805	5.8037
68.9+	C_7+	Heptanes+	0.00100	0.04805	5.8037
98.6+	C_8+	Octanes+	0.00100	0.04805	5.8037
125.8+	C_9+	Nonanes+	0.00054	0.02583	3.3032
150.9+	C_{10}+	Decanes+	0.00008	0.00386	0.5886
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00046	0.02222	2.5004
125.8 - 150.9	C_9	Nonanes	0.00046	0.02198	2.7147
150.9 - 174.3	C_{10}	Decanes	0.00008	0.00386	0.5886
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00029	0.01391	1.3070
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00025	0.01197	1.3031
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

13000961B	EE041705621W4MFIT4116G		000201859	22ER886123A	22ER893697B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						4200	5300	-10	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

May 24, 2022 10:25	May 25, 2022	May 30, 2022	May 30, 2022	Calgary - Svetlana Nikolic - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.01484	0.83365		0.00825
He	0.00000	0.00000		0.00000
N_2	0.00280	0.15725		0.00177
CO_2	0.98220	0.00000		0.98984
H_2S	0.00000	0.00000		0.00000
C_1	0.00016	0.00910		0.00014
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00000	0.00000	0.0	0.00000
TOTAL	1.00000	1.00000	0.0	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.19	10.40	**0.16**	8.84

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.497	0.215	0.0	1.833

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7275.43	299.59	1672.11	49.25

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
			0	0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.34	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

13000961B	EE041705621W4MFIT		000201859	22ER886123A	22ER893697B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

04000880A	EE041705621W4MFIT4116G		000201859	22ER869991F	22ER886123A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

REDWATER	NOT APPLICABLE	AGAT RED DEER	BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						4200	10000	4	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Apr 21, 2022 8:45	Apr 22, 2022	Apr 27, 2022	Apr 27, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY UBE = 0ppm; CO2 CONTENT = 98.98% (AIR FREE)

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00825	0.81206		0.00868
He	0.00000	0.00000		0.00000
N_2	0.00177	0.17414		0.00187
CO_2	0.98984	0.00000		0.98706
H_2S	0.00000	0.00000		0.00000
C_1	0.00014	0.01380		0.00014
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00000
C_7+	0.00000	0.00000	0.0	0.00225
TOTAL	1.00000	1.00000	0.0	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.11	10.32	**0.09**	8.78

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.507	0.233	0.0	1.846

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7319.57	301.56	1722.70	51.56

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.63	0.00

Calculated Vapour Pressure

0.00
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

PROPERTIES OF C6+ FRACTION

Version: 1

04000880A	EE041705621W4MFIT		000201859	22ER869991F	22ER886123A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05005037F	EE041705621W4MFIT4116G		000201859	21ER835717B	22ER869991F
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	Sampling Point	Unique Well Identifier

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	Well License	Well Status	Well Fluid Status	LSD

REDWATER	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Received	Temperature (°C) Source	Received
						4100	8200	-10	22

Mar 11, 2022 10:30	Mar 14, 2022	Mar 17, 2022	Mar 17, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information :

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00868	0.67051		0.00753
He	0.00000	0.00000		0.00000
N_2	0.00187	0.14476		0.00194
CO_2	0.98706	0.00000		0.99030
H_2S	0.00000	0.00000		0.00000
C_1	0.00014	0.01065		0.00011
C_2	0.00000	0.00000	0.0	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00000	0.00000	0.0	0.00002
C_7+	0.00225	0.17408	13.4	0.00010
TOTAL	1.00000	1.00000	13.4	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.60	46.33	**0.52**	40.36

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.511	0.864	794.2	1.851

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7306.25	302.10	1913.74	147.20

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.76	111.66

Calculated Vapour Pressure

4.71
C_5+(kPa)

Gas Compressibility

0.9940
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

05005037F	EE041705621W4MFIT		000201859	21ER835717B	22ER869991F
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER FIT-4116	04-17-056-21W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

RCRF 4-17 CO2 METER-FIT-4116				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00225	0.17408	13.3958
68.9+	C_7+	Heptanes+	0.00225	0.17408	13.3958
98.6+	C_8+	Octanes+	0.00210	0.16227	12.4538
125.8+	C_9+	Nonanes+	0.00130	0.10127	8.2443
150.9+	C_{10}+	Decanes+	0.00045	0.03513	3.2542
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00015	0.01181	0.9420
98.6 - 125.8	C_8	Octanes	0.00080	0.06100	4.2095
125.8 - 150.9	C_9	Nonanes	0.00085	0.06614	4.9901
150.9 - 174.3	C_{10}	Decanes	0.00045	0.03513	3.2542
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00024	0.01841	1.2794
110.61	C_7	Toluene	0.00036	0.02744	1.5892
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00032	0.02487	1.6681
144.42	C_8	o-Xylene	0.00014	0.01062	0.6983
169.34	C_9	1,2,4-Trimethylbenzene	0.00013	0.01041	0.9021

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number
13001557A	EE041504024W4MFIT100G			22GR965979A	22GR974584A

Operator Name	Sampling Point	Unique Well Identifier
ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4

Well Name	Well License	Well Status	Well Fluid Status	LSD
ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				

Field or Area	Pool or Zone	Sampler's Company	Name of Sampler
CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Received	Temperature (°C) Source	Received
						20	38	5	21

Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Dec 01, 2022 10:25	Dec 02, 2022	Dec 08, 2022	Dec 08, 2022	Calgary - Gerry Ecker - Reporter

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0064	0.8000		0.0069
He	0.0000	0.0000		0.0000
N_2	0.0002	0.0250		0.0017
CO_2	0.9920	0.0000		0.9894
H_2S	0.0000	0.0000		0.0000
C_1	0.0010	0.1250		0.0002
C_2	0.0002	0.0250	0.7	0.0001
C_3	0.0001	0.0125	0.4	0.0001
iC_4	TRACE	TRACE	0.0	0.0004
nC_4	0.0001	0.0125	0.4	0.0008
iC_5	TRACE	TRACE	0.0	0.0001
nC_5	TRACE	TRACE	0.0	0.0001
C_6	TRACE	TRACE	0.0	0.0001
C_7+	TRACE	TRACE	0.0	0.0001
TOTAL	1.0000	1.0000	1.5	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: N2, C1, NC4

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.15	18.59	0.00	**0.13**	16.42

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.509	0.219	3.702	697.8	1.848

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7333.3	302.2	1919.8	71.1

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
43.7	107.2

Calculated Vapour Pressure

0.00
C_5+ (kPa)

Gas Compressibility

0.9993
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

11002395A	EE041504024W4MFIT100G			22GR949120A	22GR965979A
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	Sampling Point	Unique Well Identifier

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	Well License	Well Status	Well Fluid Status	LSD

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						62	78	2	21
From :	To:	Test Type	Test No.	KB	GRD	Source	Received	Source	Received

Nov 04, 2022 11:25	Nov 07, 2022	Nov 11, 2022	Nov 11, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0069	0.6511		0.0071
He	0.0000	0.0000		0.0000
N_2	0.0017	0.1604		0.0058
CO_2	0.9894	0.0000		0.9849
H_2S	0.0000	0.0000		0.0000
C_1	0.0002	0.0189		0.0004
C_2	0.0001	0.0094	0.4	0.0001
C_3	0.0001	0.0094	0.4	0.0001
iC_4	0.0004	0.0377	1.7	0.0001
nC_4	0.0008	0.0755	3.4	0.0002
iC_5	0.0001	0.0094	0.5	0.0002
nC_5	0.0001	0.0094	0.5	0.0002
C_6	0.0001	0.0094	0.5	0.0003
C_7+	0.0001	0.0094	0.7	0.0006
TOTAL	1.0000	1.0000	8.1	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: NC4

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.33	30.40	0.02	**0.29**	27.57

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.509	0.574	3.944	706.7	1.849

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7321.1	302.1	2100.4	118.1

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
43.7	114.2

Calculated Vapour Pressure

71.56
C_5+ (kPa)

Gas Compressibility

0.9922
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual
View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

11000673A	EE041504024W4MFIT100G		000188887	22GR937849A	22GR949120A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						80	100	10	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Oct 03, 2022 9:20	Oct 04, 2022	Oct 06, 2022	Oct 06, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : PLANT

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0071	0.4704		0.0061
He	0.0000	0.0000		0.0000
N_2	0.0058	0.3841		0.0022
CO_2	0.9849	0.0000		0.9907
H_2S	0.0000	0.0000		0.0000
C_1	0.0004	0.0265		0.0009
C_2	0.0001	0.0066	0.4	TRACE
C_3	0.0001	0.0066	0.4	TRACE
iC_4	0.0001	0.0066	0.4	TRACE
nC_4	0.0002	0.0132	0.8	TRACE
iC_5	0.0002	0.0132	1.0	TRACE
nC_5	0.0002	0.0132	1.0	TRACE
C_6	0.0003	0.0199	1.6	TRACE
C_7+	0.0006	0.0397	4.0	0.0001
TOTAL	1.0000	1.0000	9.6	1.0000

WDMS Data Verification Check ⚠

Exceeds normal limits: CO2, H2

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.40	26.45	0.13	**0.36**	24.07

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.508	0.751	3.782	700.8	1.847

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7302.2	301.4	2422.0	126.5

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
43.7	109.6

Calculated Vapour Pressure

49.34
C_5+ (kPa)

Gas Compressibility

0.9836
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

13000842A	EE041504024W4MFIT100G		000188887	22GR926850A	22GR937849A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						170	160	11	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Sep 01, 2022 11:05	Sep 06, 2022	Sep 12, 2022	Sep 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0061	0.6558		0.0059
He	0.0000	0.0000		0.0000
N_2	0.0022	0.2366		0.0047
CO_2	0.9907	0.0000		0.9873
H_2S	0.0000	0.0000		0.0000
C_1	0.0009	0.0968		0.0010
C_2	TRACE	TRACE	0.0	0.0001
C_3	TRACE	TRACE	0.0	0.0002
iC_4	TRACE	TRACE	0.0	TRACE
nC_4	TRACE	TRACE	0.0	0.0001
iC_5	TRACE	TRACE	0.0	0.0001
nC_5	TRACE	TRACE	0.0	0.0001
C_6	TRACE	TRACE	0.0	0.0001
C_7+	0.0001	0.0108	0.7	0.0004
TOTAL	1.0000	1.0000	0.7	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross			Net	
0.13	14.01	0.02	**0.11**	12.33
Air Free as Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative			Absolute	
1.509	0.371	3.944	706.7	1.848
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7328.2	302.0	2126.1	76.2
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
0				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

43.7	114.2
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

3.73

C_5+ (kPa)

Gas Compressibility

0.9978

@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

05002549A	EE041504024W4MFIT100G		000188887		22GR926850A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				*Elevation (m)*		*Pressure (kPa)*		*Temperature (°C)*	
						140	120	7	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Aug 03, 2022 10:50	Aug 05, 2022	Aug 10, 2022	Aug 10, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0059	0.4645		
He	0.0000	0.0000		
N_2	0.0047	0.3701		
CO_2	0.9873	0.0000		
H_2S	0.0000	0.0000		
C_1	0.0010	0.0787		
C_2	0.0001	0.0079	0.4	
C_3	0.0002	0.0157	0.7	
iC_4	TRACE	TRACE	0.0	
nC_4	0.0001	0.0079	0.4	
iC_5	0.0001	0.0079	0.5	
nC_5	0.0001	0.0079	0.5	
C_6	0.0001	0.0079	0.5	
C_7+	0.0004	0.0315	2.8	
TOTAL	1.0000	1.0000	5.8	

WDMS Data Verification Check

Exceeds normal limits: CO2, H2

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.29	22.57	0.09	**0.26**	20.45

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.509	0.669	3.944	706.6	1.848

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7315.2	301.7	2512.3	118.0

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
				0.00

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
43.7	114.2

Calculated Vapour Pressure

43.20
C_5+ (kPa)

Gas Compressibility

0.9853
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

08000150A	EE041504024W4MFIT100G		000188887	22ER901621A	22ER915638A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Received	Temperature (°C) Source	Received
						180	190	10	21

Jul 04, 2022 9:15	Jul 06, 2022	Jul 12, 2022	Jul 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : METER 090-FIT-100(ENH0202)

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00842	0.50005		0.00731
He	0.00000	0.00000		0.00000
N_2	0.00743	0.44125		0.00091
CO_2	0.98318	0.00000		0.99034
H_2S	0.00000	0.00000		0.00000
C_1	0.00081	0.04784		0.00099
C_2	0.00000	0.00000	0.0	0.00011
C_3	0.00001	0.00060	TRACE	0.00016
iC_4	0.00002	0.00095	0.1	0.00005
nC_4	0.00001	0.00080	0.1	0.00010
iC_5	0.00001	0.00057	TRACE	0.00001
nC_5	0.00001	0.00084	0.1	0.00001
C_6	0.00001	0.00125	0.1	0.00000
C_7+	0.00009	0.00584	0.6	0.00001
TOTAL	1.00000	1.00000	1.0	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: N2

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.16	9.71	**0.14**	8.50

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.503	0.520	750.0	1.841

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7293.41	300.47	2410.34	86.94

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight

(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.52	101.24

Calculated Vapour Pressure

35.67
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

08000150A	EE041504024W4MFIT		000188887	22ER901621A	22ER915638A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00010	0.00709	0.6745
68.9+	C_7+	Heptanes+	0.00009	0.00584	0.5607
98.6+	C_8+	Octanes+	0.00004	0.00338	0.3285
125.8+	C_9+	Nonanes+	0.00001	0.00082	0.0842
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00005	0.00246	0.2322
98.6 - 125.8	C_8	Octanes	0.00003	0.00256	0.2443
125.8 - 150.9	C_9	Nonanes	0.00001	0.00082	0.0842
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00011	0.0090
68.73	C_6	n-Hexane	0.00001	0.00086	0.0791
71.83	C_6	Methylcyclopentane	0.00001	0.00031	0.0279
80.06	C_6	Benzene	0.00001	0.00031	0.0196
80.78	C_6	Cyclohexane	0.00001	0.00035	0.0310
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00011	0.0130
100.94	C_7	Methylcyclohexane	0.00001	0.00072	0.0647
110.61	C_7	Toluene	0.00001	0.00084	0.0629
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00001	0.00039	0.0337
144.42	C_8	o-Xylene	0.00000	0.00010	0.0084
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

EXTENDED GAS ANALYSIS

AGAT Laboratories

Version: 1

07001396C	EE041504024W4MFIT100G		000188887	22ER889541A	22ER889542C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						200	130	2	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

May 13, 2022 8:50	May 16, 2022	May 24, 2022	May 24, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00412	0.64171		0.00517
He	0.00000	0.00000		0.00000
N_2	0.00101	0.15773		0.00230
CO_2	0.99357	0.00000		0.99134
H_2S	0.00000	0.00000		0.00000
C_1	0.00075	0.11613		0.00062
C_2	0.00003	0.00494	0.1	0.00004
C_3	0.00001	0.00095	TRACE	0.00002
iC_4	0.00002	0.00316	0.1	0.00020
nC_4	0.00001	0.00100	TRACE	0.00000
iC_5	0.00000	0.00071	TRACE	0.00000
nC_5	0.00001	0.00155	TRACE	0.00000
C_6	0.00005	0.00731	0.3	0.00000
C_7+	0.00042	0.06481	2.5	0.00031
TOTAL	1.00000	1.00000	3.1	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.18	28.19	**0.16**	25.21
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.513	0.537	736.2	1.854
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7343.56	302.87	2164.77	108.29
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
0				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.83	104.31
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

16.64
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

PROPERTIES OF C6+ FRACTION

Version: 1

07001396C	EE041504024W4MFIT		000188887	22ER889541A	22ER889542C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00047	0.07212	2.7463
68.9+	C_7+	Heptanes+	0.00042	0.06481	2.4889
98.6+	C_8+	Octanes+	0.00027	0.04009	1.5758
125.8+	C_9+	Nonanes+	0.00006	0.00973	0.4340
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00015	0.02472	0.9131
98.6 - 125.8	C_8	Octanes	0.00021	0.03036	1.1418
125.8 - 150.9	C_9	Nonanes	0.00006	0.00973	0.4340
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00003	0.00457	0.1611
71.83	C_6	Methylcyclopentane	0.00002	0.00266	0.0920
80.06	C_6	Benzene	0.00001	0.00185	0.0444
80.78	C_6	Cyclohexane	0.00002	0.00324	0.1090
99.24	C_8	2,2,4-Trimethylpentane	0.00001	0.00124	0.0552
100.94	C_7	Methylcyclohexane	0.00004	0.00606	0.2087
110.61	C_7	Toluene	0.00006	0.00858	0.2462
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00001	0.00187	0.0621
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

EXTENDED GAS ANALYSIS

AGAT Laboratories

Version: 1

08001800A	EE041504024W4MFIT100G		000188887	22ER879418A	22ER889541A
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Received	Temperature (°C) Source	Received
						140	180	10	21

May 03, 2022 8:20	May 05, 2022	May 12, 2022	May 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : CC: 22CLV001

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00517	0.59530		0.00795
He	0.00000	0.00000		0.00000
N_2	0.00230	0.26473		0.00097
CO_2	0.99134	0.00000		0.99038
H_2S	0.00000	0.00000		0.00000
C_1	0.00062	0.07141		0.00065
C_2	0.00004	0.00440	0.1	0.00003
C_3	0.00002	0.00272	0.1	0.00000
iC_4	0.00020	0.02353	0.9	0.00001
nC_4	0.00000	0.00046	TRACE	0.00000
iC_5	0.00000	0.00031	TRACE	0.00000
nC_5	0.00000	0.00032	TRACE	0.00000
C_6	0.00000	0.00033	TRACE	0.00001
C_7+	0.00031	0.03649	1.8	0.00000
TOTAL	1.00000	1.00000	2.9	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.18	20.91	**0.16**	18.79

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.511	0.530	804.7	1.851

Calculated Pseudo Critical Properties

As Sampled pPc (kPa)	As Sampled pTc (K)	Acid Gas Free pPc (kPa)	Acid Gas Free pTc (K)
7332.44	302.37	2250.19	101.11

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.76	105.67

Calculated Vapour Pressure

8.31
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

08001800A	EE041504024W4MFIT		000188887	22ER879418A	22ER889541A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m^3)
36.2+	C_6+	Hexanes+	0.00031	0.03681	1.7761
68.9+	C_7+	Heptanes+	0.00031	0.03649	1.7605
98.6+	C_8+	Octanes+	0.00029	0.03420	1.6580
125.8+	C_9+	Nonanes+	0.00015	0.01682	0.8821
150.9+	C_{10}+	Decanes+	0.00001	0.00254	0.1489
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m^3)
68.9 - 98.6	C_7	Heptanes	0.00002	0.00228	0.1024
98.6 - 125.8	C_8	Octanes	0.00014	0.01739	0.7760
125.8 - 150.9	C_9	Nonanes	0.00014	0.01427	0.7332
150.9 - 174.3	C_{10}	Decanes	0.00001	0.00254	0.1489
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m^3)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00033	0.0157
71.83	C_6	Methylcyclopentane	0.00000	0.00027	0.0126
80.06	C_6	Benzene	0.00001	0.00072	0.0235
80.78	C_6	Cyclohexane	0.00000	0.00033	0.0151
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00002	0.00234	0.1090
110.61	C_7	Toluene	0.00010	0.01106	0.4299
136.16	C_8	Ethylbenzene	0.00001	0.00099	0.0441
138.33 ; 139.09	C_8	m&p-Xylene	0.00005	0.00521	0.2346
144.42	C_8	o-Xylene	0.00001	0.00111	0.0488
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00049	0.0283

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

11000319A	EE041504024W4MFIT100G		000188887	22ER869985A	22ER879418A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						160	190	10	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Apr 05, 2022 10:40	Apr 07, 2022	Apr 12, 2022	Apr 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00795	0.82536		0.00639
He	0.00000	0.00000		0.00000
N_2	0.00097	0.10114		0.00034
CO_2	0.99038	0.00000		0.99235
H_2S	0.00000	0.00000		0.00000
C_1	0.00065	0.06725		0.00079
C_2	0.00003	0.00335	0.1	0.00005
C_3	0.00000	0.00000	0.0	0.00003
iC_4	0.00001	0.00088	TRACE	0.00001
nC_4	0.00000	0.00038	TRACE	0.00002
iC_5	0.00000	0.00035	TRACE	0.00001
nC_5	0.00000	0.00041	TRACE	0.00001
C_6	0.00001	0.00090	TRACE	0.00000
C_7+	0.00000	0.00000	0.0	0.00000
TOTAL	1.00000	1.00000	0.2	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.13	13.14	**0.11**	11.32
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.507	0.203	0.0	1.846
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7322.91	301.73	1764.26	55.33
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
0				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.64	0.00
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

80.52
C_5+(kPa)

Gas Compressibility

0.9944
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

11000319A	EE041504024W4MFIT		000188887	22ER869985A	22ER879418A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00001	0.00090	0.0475
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00001	0.00090	0.0475
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

08001541A	EE041504024W4MFIT100G		000188887	22ER860667A	22ER869985A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						70	100	10	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Mar 07, 2022 8:50	Mar 08, 2022	Mar 11, 2022	Mar 11, 2022	Calgary - Svetlana Nikolic - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information :

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00639	0.83507		0.00620
He	0.00000	0.00000		0.00000
N_2	0.00034	0.04505		0.00133
CO_2	0.99235	0.00000		0.99123
H_2S	0.00000	0.00000		0.00000
C_1	0.00079	0.10375		0.00073
C_2	0.00005	0.00631	0.2	0.00005
C_3	0.00003	0.00343	0.1	0.00003
iC_4	0.00001	0.00172	0.1	0.00005
nC_4	0.00002	0.00230	0.1	0.00001
iC_5	0.00001	0.00138	0.1	0.00001
nC_5	0.00001	0.00100	TRACE	0.00001
C_6	0.00000	0.00000	0.0	0.00018
C_7+	0.00000	0.00000	0.0	0.00017
TOTAL	1.00000	1.00000	0.5	1.00000

WDMS Data Verification Check ✓

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.12	15.57	**0.10**	13.52
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.510	0.185	0.0	1.849
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7334.31	302.26	1796.54	59.16
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.71	0.00
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

136.40
C_5+(kPa)

Gas Compressibility

0.9943
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

PROPERTIES OF C6+ FRACTION

Version: 1

08001541A	EE041504024W4MFIT		000188887	22ER860667A	22ER869985A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00000	0.00000	0.0000
68.9+	C_7+	Heptanes+	0.00000	0.00000	0.0000
98.6+	C_8+	Octanes+	0.00000	0.00000	0.0000
125.8+	C_9+	Nonanes+	0.00000	0.00000	0.0000
150.9+	C_{10}+	Decanes+	0.00000	0.00000	0.0000
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00000	0.00000	0.0000
98.6 - 125.8	C_8	Octanes	0.00000	0.00000	0.0000
125.8 - 150.9	C_9	Nonanes	0.00000	0.00000	0.0000
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00000	0.0000
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00000	0.00000	0.0000
68.73	C_6	n-Hexane	0.00000	0.00000	0.0000
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00000	0.00000	0.0000
80.78	C_6	Cyclohexane	0.00000	0.00000	0.0000
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00000	0.0000
100.94	C_7	Methylcyclohexane	0.00000	0.00000	0.0000
110.61	C_7	Toluene	0.00000	0.00000	0.0000
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00000	0.0000
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number
07000322A	EE041504024W4MFIT100G		000188887	22ER850589A	22ER860667A

Operator Name	Sampling Point	Unique Well Identifier
ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4

Well Name	Well License	Well Status	Well Fluid Status	LSD
ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				

Field or Area	Pool or Zone	Sampler's Company	Name of Sampler
CLIVE	NOT APPLICABLE	AGAT RED DEER	BA

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Received	Temperature (°C) Source	Received
						120	150	10	21

Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title
Feb 09, 2022 8:45	Feb 11, 2022	Feb 17, 2022	Feb 17, 2022	Calgary - Gerry Ecker - Reporter

Other Information : METER 090-FIT-100(ENH0202)

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00620	0.70620		0.01231
He	0.00000	0.00000		0.00000
N_2	0.00133	0.15140		0.00707
CO_2	0.99123	0.00000		0.97616
H_2S	0.00000	0.00000		0.00000
C_1	0.00073	0.08257		0.00222
C_2	0.00005	0.00607	0.2	0.00005
C_3	0.00003	0.00338	0.1	0.00000
iC_4	0.00005	0.00512	0.2	0.00000
nC_4	0.00001	0.00162	0.1	0.00000
iC_5	0.00001	0.00116	TRACE	0.00000
nC_5	0.00001	0.00135	0.1	0.00000
C_6	0.00018	0.02053	1.0	0.00027
C_7+	0.00017	0.02059	1.1	0.00192
TOTAL	1.00000	1.00000	2.7	1.00000

WDMS Data Verification Check

Exceeded compare limits: C1, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
0.19	21.34	**0.17**	19.09

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.510	0.405	725.2	1.850

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7329.96	302.22	2022.87	87.08

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
0				0.00

Calculated Molecular Weight

(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
43.73	100.32

Calculated Vapour Pressure

33.91

C_5+(kPa)

Gas Compressibility

0.9943

@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

PROPERTIES OF C6+ FRACTION

Version: 1

07000322A	EE041504024W4MFIT		000188887	22ER850589A	22ER860667A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00035	0.04112	2.0381
68.9+	C_7+	Heptanes+	0.00017	0.02059	1.0546
98.6+	C_8+	Octanes+	0.00004	0.00570	0.3103
125.8+	C_9+	Nonanes+	0.00001	0.00231	0.1399
150.9+	C_{10}+	Decanes+	0.00000	0.00084	0.0550
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00013	0.01489	0.7443
98.6 - 125.8	C_8	Octanes	0.00003	0.00339	0.1704
125.8 - 150.9	C_9	Nonanes	0.00001	0.00148	0.0849
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00084	0.0550
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00001	0.00103	0.0442
68.73	C_6	n-Hexane	0.00010	0.01143	0.5513
71.83	C_6	Methylcyclopentane	0.00004	0.00486	0.2298
80.06	C_6	Benzene	0.00001	0.00073	0.0238
80.78	C_6	Cyclohexane	0.00001	0.00139	0.0641
99.24	C_8	2,2,4-Trimethylpentane	0.00000	0.00054	0.0329
100.94	C_7	Methylcyclohexane	0.00001	0.00096	0.0450
110.61	C_7	Toluene	0.00001	0.00103	0.0406
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00050	0.0227
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00040	0.0234

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

11001151A	EE041504024W4MFIT100G		000188887	21ER836857A	22ER850589A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER
Well Name | *Well License* | *Well Status* | *Well Fluid Status* | *LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						130	150	5	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Jan 10, 2022 8:55	Jan 11, 2022	Jan 13, 2022	Jan 13, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : METER 090-FIT-100(ENH0202)

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.01231	0.51662		0.00745
He	0.00000	0.00000		0.00000
N_2	0.00707	0.29660		0.00055
CO_2	0.97616	0.00000		0.99153
H_2S	0.00000	0.00000		0.00000
C_1	0.00222	0.09320		0.00047
C_2	0.00005	0.00201	0.2	0.00000
C_3	0.00000	0.00000	0.0	0.00000
iC_4	0.00000	0.00000	0.0	0.00000
nC_4	0.00000	0.00000	0.0	0.00000
iC_5	0.00000	0.00000	0.0	0.00000
nC_5	0.00000	0.00000	0.0	0.00000
C_6	0.00027	0.01105	1.4	0.00000
C_7+	0.00192	0.08052	11.2	0.00000
TOTAL	1.00000	1.00000	12.8	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: N2, C1, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
0.68	28.54	**0.61**	25.72
Air Free as Received	*Moisture & Acid Gas Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative		Absolute	
1.500	0.702	761.6	1.838
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7258.12	299.86	2388.95	125.07
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
0				0.00
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

43.45	105.50
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

12.76
C_5+(kPa)

Gas Compressibility

0.9941
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

PROPERTIES OF C6+ FRACTION

Version: 1

11001151A	EE041504024W4MFIT		000188887	21ER836857A	22ER850589A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	METER 090-FIT-100(ENH 0202)	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 CO2 ACTL 20 CO2 ANALYZER				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00219	0.09157	12.6268
68.9+	C_7+	Heptanes+	0.00192	0.08052	11.2364
98.6+	C_8+	Octanes+	0.00145	0.06073	8.5777
125.8+	C_9+	Nonanes+	0.00054	0.02283	3.3744
150.9+	C_{10}+	Decanes+	0.00007	0.00274	0.4487
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00047	0.01979	2.6587
98.6 - 125.8	C_8	Octanes	0.00091	0.03790	5.2033
125.8 - 150.9	C_9	Nonanes	0.00047	0.02009	2.9257
150.9 - 174.3	C_{10}	Decanes	0.00007	0.00274	0.4487
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00009	0.00364	0.4222
68.73	C_6	n-Hexane	0.00014	0.00566	0.7412
71.83	C_6	Methylcyclopentane	0.00000	0.00000	0.0000
80.06	C_6	Benzene	0.00007	0.00310	0.2757
80.78	C_6	Cyclohexane	0.00007	0.00274	0.3429
99.24	C_8	2,2,4-Trimethylpentane	0.00002	0.00090	0.1492
100.94	C_7	Methylcyclohexane	0.00020	0.00828	1.0599
110.61	C_7	Toluene	0.00029	0.01212	1.2918
136.16	C_8	Ethylbenzene	0.00003	0.00132	0.1624
138.33 ; 139.09	C_8	m&p-Xylene	0.00016	0.00690	0.8524
144.42	C_8	o-Xylene	0.00004	0.00168	0.2038
169.34	C_9	1,2,4-Trimethylbenzene	0.00002	0.00076	0.1205

AGAT Laboratories

GAS ANALYSIS

Version: 1

08000199C	EE041504024W4DRYOUTLET		000188788	22GR965975A	22GR974580C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3780	4900	24	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Dec 01, 2022 11:30	Dec 02, 2022	Dec 08, 2022	Dec 08, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 2.42%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0061	0.0738		0.0063
He	TRACE	TRACE		0.0001
N_2	0.0059	0.0714		0.0060
CO_2	0.8932	0.0000		0.8737
H_2S	0.0242	0.0000		0.0187
C_1	0.0520	0.6296		0.0714
C_2	0.0068	0.0823	24.2	0.0086
C_3	0.0056	0.0678	20.6	0.0068
iC_4	0.0009	0.0109	3.9	0.0015
nC_4	0.0027	0.0327	11.4	0.0033
iC_5	0.0007	0.0085	3.4	0.0009
nC_5	0.0008	0.0097	3.9	0.0011
C_6	0.0005	0.0061	2.7	0.0007
C_7+	0.0006	0.0072	3.9	0.0009
TOTAL	1.0000	1.0000	74.0	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: H2S, C1, C2, C3, IC4, NC4

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
4.49	47.01	0.13	**4.07**	42.81

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.451	0.789	3.621	694.7	1.777

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7152.6	298.5	4185.5	215.5

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	24200			34.81

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
42.0	104.9

Calculated Vapour Pressure

79.57
C_5+ (kPa)

Gas Compressibility

0.9925
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

GAS ANALYSIS

Version: 1

05003747A	EE041504024W4DRYOUTLET		000188788	22GR949110B	22GR965975A
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	Sampling Point	Unique Well Identifier

ENHANCE CLIVE 4-15 BATTERY				
Well Name	Well License	Well Status	Well Fluid Status	LSD

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB) From :	Test Interval (mKB) To:	Test Type	Test No.	Elevation (m) KB	Elevation (m) GRD	Pressure (kPa) Source	Pressure (kPa) Received	Temperature (°C) Source	Temperature (°C) Received
						3790	4200	12	23

Nov 04, 2022 11:45	Nov 07, 2022	Nov 11, 2022	Nov 11, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information : FIELD H2S BY TUT = 1.874%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0063	0.0586		0.0061
He	0.0001	0.0009		0.0001
N_2	0.0060	0.0558		0.0065
CO_2	0.8737	0.0000		0.8970
H_2S	0.0187	0.0000		0.0182
C_1	0.0714	0.6635		0.0540
C_2	0.0086	0.0800	30.6	0.0071
C_3	0.0068	0.0632	25.0	0.0055
iC_4	0.0015	0.0139	6.5	0.0010
nC_4	0.0033	0.0307	13.9	0.0026
iC_5	0.0009	0.0084	4.4	0.0006
nC_5	0.0011	0.0102	5.3	0.0007
C_6	0.0007	0.0065	3.8	0.0003
C_7+	0.0009	0.0083	5.8	0.0003
TOTAL	1.0000	1.0000	95.3	1.0000

WDMS Data Verification Check ⚠

Exceeds normal limits: CO2, H2
Exceeded compare limits: C1, C2, C3, NC4, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa (MJ/m³)

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
5.66	48.04	0.20	**5.12**	43.75

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.435	0.791	3.675	696.8	1.757

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7070.5	296.2	4246.7	218.5

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	18740			26.90

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
41.6	106.4

Calculated Vapour Pressure

76.67
C_5+ (kPa)

Gas Compressibility

0.9922
@15 °C & 101.325 kPa

AGAT Laboratories

GAS ANALYSIS

Version: 1

07000983B	EE041504024W4DRYOUTLET		000188788	22GR937859A	22GR949110B
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	Sampling Point	Unique Well Identifier

ENHANCE CLIVE 4-15 BATTERY				
Well Name	Well License	Well Status	Well Fluid Status	LSD

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB) From :	To:	Test Type	Test No.	Elevation (m) KB	GRD	Pressure (kPa) Source	Pressure (kPa) Received	Temperature (°C) Source	Temperature (°C) Received
						3800	3500	10	23

Oct 03, 2022 9:50	Oct 04, 2022	Oct 07, 2022	Oct 07, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information : FIELD H2S BY TUT = 1.82%

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0061	0.0719		0.0059
He	0.0001	0.0012		0.0001
N_2	0.0065	0.0767		0.0063
CO_2	0.8970	0.0000		0.8759
H_2S	0.0182	0.0000		0.0189
C_1	0.0540	0.6366		0.0586
C_2	0.0071	0.0837	25.2	0.0081
C_3	0.0055	0.0649	20.2	0.0077
iC_4	0.0010	0.0118	4.4	0.0015
nC_4	0.0026	0.0307	10.9	0.0049
iC_5	0.0006	0.0071	2.9	0.0021
nC_5	0.0007	0.0083	3.4	0.0030
C_6	0.0003	0.0035	1.6	0.0028
C_7+	0.0003	0.0036	1.9	0.0042
TOTAL	1.0000	1.0000	70.5	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: C1, C2, C3, NC4, C6, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
4.30	45.27	0.06	**3.89**	41.21

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.449	0.765	3.621	694.7	1.775

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7136.9	297.5	4196.8	211.7

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	18200			26.18

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
42.0	104.9

Calculated Vapour Pressure

90.85
C_5+ (kPa)

Gas Compressibility

0.9936
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

00019151A	EE041504024W4DRYOUTLET		000188788	22GR926845B	22GR937859A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				*Elevation (m)*		*Pressure (kPa)*		*Temperature (°C)*	
						3800	3300	11	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Sep 01, 2022 11:35	Sep 06, 2022	Sep 09, 2022	Sep 09, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.89%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0059	0.0561		0.0061
He	0.0001	0.0010		0.0001
N_2	0.0063	0.0599		0.0070
CO_2	0.8759	0.0000		0.8657
H_2S	0.0189	0.0000		0.0188
C_1	0.0586	0.5568		0.0761
C_2	0.0081	0.0770	28.8	0.0085
C_3	0.0077	0.0732	28.3	0.0076
iC_4	0.0015	0.0143	6.5	0.0014
nC_4	0.0049	0.0466	20.6	0.0040
iC_5	0.0021	0.0200	10.3	0.0010
nC_5	0.0030	0.0285	14.5	0.0013
C_6	0.0028	0.0266	15.4	0.0009
C_7+	0.0042	0.0400	26.9	0.0015
TOTAL	1.0000	1.0000	151.3	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: C1, NC4, C6, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross			Net	
6.97	61.68	0.90	**6.34**	56.36
Air Free as Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative			Absolute	
1.461	1.029	3.632	695.1	1.790
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7063.2	299.7	4101.9	249.9
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
	18900			27.19
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

42.3	105.2
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

61.96
C_5+ (kPa)

Gas Compressibility

0.9828
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

11001108B	EE041504024W4DRYOUTLET		000188788	22GR915637B	22GR926845B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3750	3700	8	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Aug 03, 2022 12:05	Aug 05, 2022	Aug 12, 2022	Aug 12, 2022	Calgary - Svetlana Nikolic - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.882%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0061	0.0528		0.0063
He	0.0001	0.0009		0.0001
N_2	0.0070	0.0606		0.0066
CO_2	0.8657	0.0000		0.8783
H_2S	0.0188	0.0000		0.0172
C_1	0.0761	0.6588		0.0705
C_2	0.0085	0.0736	30.2	0.0086
C_3	0.0076	0.0658	27.9	0.0060
iC_4	0.0014	0.0121	6.1	0.0011
nC_4	0.0040	0.0346	16.8	0.0026
iC_5	0.0010	0.0087	4.9	0.0008
nC_5	0.0013	0.0113	6.3	0.0010
C_6	0.0009	0.0078	4.9	0.0005
C_7+	0.0015	0.0130	9.7	0.0004
TOTAL	1.0000	1.0000	106.8	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: C1, C3, NC4, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross			Net	
6.19	49.36	0.33	**5.60**	44.97
Air Free as Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative			Absolute	
1.432	0.819	3.686	697.2	1.754
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7045.6	295.9	4242.9	221.9
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
	18820			27.05
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

41.5	106.7
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

68.80
C_5+ (kPa)

Gas Compressibility

0.9904
@15 °C & 101.325 kPa

Disclaimer: The result in this report has been confirmed by a duplicate run.

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

13001496D	EE041504024W4WETINLET		000189182	22GR901610C	22GR915637D
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3770	3400	11	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Jul 04, 2022 10:50	Jul 06, 2022	Jul 08, 2022	Jul 08, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT: 1.72%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0062	0.0590		0.0065
He	0.0001	0.0010		0.0001
N_2	0.0067	0.0637		0.0067
CO_2	0.8777	0.0000		0.8833
H_2S	0.0172	0.0000		0.0151
C_1	0.0706	0.6716		0.0660
C_2	0.0085	0.0809	30.2	0.0081
C_3	0.0060	0.0571	22.0	0.0067
iC_4	0.0012	0.0114	5.2	0.0011
nC_4	0.0030	0.0285	12.6	0.0031
iC_5	0.0009	0.0086	4.4	0.0008
nC_5	0.0010	0.0095	4.8	0.0010
C_6	0.0005	0.0048	2.7	0.0006
C_7+	0.0004	0.0039	2.5	0.0009
TOTAL	1.0000	1.0000	84.4	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: H2S, C1, C3

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross			Net	
5.27	45.90	0.08	**4.76**	41.77
Air Free as Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative			Absolute	
1.434	0.762	3.581	693.0	1.756
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7076.7	295.8	4254.2	213.6
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
	17200			24.74
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

41.5	103.7
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

91.10
C_5+ (kPa)

Gas Compressibility

0.9935
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

GAS ANALYSIS

Version: 1

05002576B	EE041504024W4DRYOUTLET		000188788	22GR901610D	22GR915637B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3700	3400	11	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Jul 04, 2022 10:40	Jul 06, 2022	Jul 08, 2022	Jul 08, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT: 1.72%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0063	0.0603		0.0061
He	0.0001	0.0010		0.0001
N_2	0.0066	0.0632		0.0068
CO_2	0.8783	0.0000		0.8726
H_2S	0.0172	0.0000		0.0160
C_1	0.0705	0.6744		0.0738
C_2	0.0086	0.0823	30.6	0.0085
C_3	0.0060	0.0574	22.0	0.0074
iC_4	0.0011	0.0105	4.8	0.0012
nC_4	0.0026	0.0249	10.9	0.0038
iC_5	0.0008	0.0077	3.9	0.0010
nC_5	0.0010	0.0096	4.8	0.0012
C_6	0.0005	0.0048	2.7	0.0007
C_7+	0.0004	0.0039	2.5	0.0008
TOTAL	1.0000	1.0000	82.2	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: C1, C3, NC4

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
5.20	45.47	0.08	**4.70**	41.37

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.434	0.754	3.581	693.0	1.756

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7078.8	295.7	4255.5	212.3

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	17200			24.74

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
41.5	103.7

Calculated Vapour Pressure

89.25
C_5+ (kPa)

Gas Compressibility

0.9937
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

11002163D	EE041504024W4DRYOUTLET		000188788	22GR889530B	22GR901610D
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB) From :	Test Interval (mKB) To:	Test Type	Test No.	Elevation (m) KB	Elevation (m) GRD	Pressure (kPa) Source	Pressure (kPa) Received	Temperature (°C) Source	Temperature (°C) Received
						3785	3350	11	21

Jun 01, 2022 12:00	Jun 02, 2022	Jun 08, 2022	Jun 08, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.08%/LAB = 1.60%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0061	0.0548		0.0063
He	0.0001	0.0009		0.0001
N_2	0.0068	0.0610		0.0070
CO_2	0.8726	0.0000		0.8613
H_2S	0.0160	0.0000		0.0227
C_1	0.0738	0.6624		0.0790
C_2	0.0085	0.0763	30.2	0.0086
C_3	0.0074	0.0664	27.2	0.0072
iC_4	0.0012	0.0108	5.2	0.0012
nC_4	0.0038	0.0341	16.0	0.0033
iC_5	0.0010	0.0090	4.9	0.0008
nC_5	0.0012	0.0108	5.8	0.0010
C_6	0.0007	0.0063	3.8	0.0006
C_7+	0.0008	0.0072	5.2	0.0009
TOTAL	1.0000	1.0000	98.3	1.0000

WDMS Data Verification Check ⚠

Exceeds normal limits: CO2, H2
Exceeded compare limits: H2S, C1

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Gross: C_7+ Moisture Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
5.76	47.94	0.17	**5.21**	43.65

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.433	0.795	3.641	695.5	1.755

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7054.9	295.7	4252.3	218.9

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
			16000	23.02

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
41.5	105.5

Calculated Vapour Pressure

81.20
C_5+ (kPa)

Gas Compressibility

0.9923
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

Container Identification	11005778C
Sample Point Code	EE041504024W4WETINLET
Meter Code	
AGAT WDMS Number	000189182
Previous Number	22GR889530C
Laboratory Number	22GR901610C
Operator Name	ENHANCE ENERGY INC
Sampling Point	DEXPRO WET INLET GAS
Unique Well Identifier	04-15-040-24W4
Well Name	ENHANCE CLIVE 4-15 BATTERY
Well License	
Well Status	
Well Fluid Status	
LSD	
Field or Area	CLIVE
Pool or Zone	NOT APPLICABLE
Sampler's Company	AGAT RED DEER
Name of Sampler	BB/BA
Test Interval (mKB) From: / To:	
Test Type	
Test No.	
Elevation (m) KB / GRD	
Pressure (kPa) Source	3800
Pressure (kPa) Received	3300
Temperature (°C) Source	11
Temperature (°C) Received	21
Date/Time Sampled	Jun 01, 2022 11:45
Date Received	Jun 02, 2022
Date Analyzed	Jun 08, 2022
Date Reported	Jun 08, 2022
Location - Approved By - Title	Calgary - Gerry Ecker - Reporter

Other Information : FIELD H2S BY TUT = 1.08%/LAB = 1.51%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0065	0.0640		0.0064
He	0.0001	0.0010		0.0001
N_2	0.0067	0.0659		0.0172
CO_2	0.8833	0.0000		0.8507
H_2S	0.0151	0.0000		0.0227
C_1	0.0660	0.6497		0.0781
C_2	0.0081	0.0797	28.8	0.0085
C_3	0.0067	0.0659	24.6	0.0069
iC_4	0.0011	0.0108	4.8	0.0011
nC_4	0.0031	0.0305	13.0	0.0032
iC_5	0.0008	0.0079	3.9	0.0008
nC_5	0.0010	0.0098	4.8	0.0011
C_6	0.0006	0.0059	3.3	0.0009
C_7+	0.0009	0.0089	6.0	0.0023
TOTAL	1.0000	1.0000	89.2	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: H2S, C1, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

	Air Free as Received	Moisture & Acid Gas Free	C_7+ Moisture Free
Gross	**5.21**	47.33	0.20
Net	**4.71**	43.10	

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Relative: C_7+ Moisture Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.440	0.789	3.729	698.8	1.764

Calculated Pseudo Critical Properties

	pPc (kPa)	pTc (K)
As Sampled	7080.7	296.2
Acid Gas Free	4219.1	216.5

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
			15100	21.72

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

Total Sample	C_7+ Fraction
41.7	108.0

Calculated Vapour Pressure

75.00
C_5+ (kPa)

Gas Compressibility

0.9915
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

00011535C	EE041504024W4WETINLET		000189182	21GR766371D	22GR889530C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3810	3500	11	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

May 03, 2022 9:35	May 05, 2022	May 12, 2022	May 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 2.27%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0064	0.0506		0.0066
He	0.0001	0.0008		TRACE
N_2	0.0172	0.1359		0.0056
CO_2	0.8507	0.0000		0.8967
H_2S	0.0227	0.0000		0.0156
C_1	0.0781	0.6168		0.0536
C_2	0.0085	0.0671	30.2	0.0073
C_3	0.0069	0.0545	25.4	0.0063
iC_4	0.0011	0.0087	4.8	0.0010
nC_4	0.0032	0.0253	13.5	0.0031
iC_5	0.0008	0.0063	3.9	0.0009
nC_5	0.0011	0.0087	5.3	0.0012
C_6	0.0009	0.0071	4.9	0.0009
C_7+	0.0023	0.0182	15.5	0.0012
TOTAL	1.0000	1.0000	103.5	1.0000

WDMS Data Verification Check

Exceeds normal limits: CO2, H2
Exceeded compare limits: H2S, C1, C2, C3, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross			Net	
6.30	45.14	0.52	**5.70**	41.12
Air Free as Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative			Absolute	
1.424	0.826	3.839	702.8	1.744
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7007.7	294.0	4168.6	212.1
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
	22700			32.66
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

41.2	111.2
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

54.24
C_5+ (kPa)

Gas Compressibility

0.9886
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

GAS ANALYSIS

Version: 1

04001421B	EE041504024W4DRYOUTLET		000188788	21G780895A	22GR889530B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3780	3300	11	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

May 03, 2022 9:45	May 05, 2022	May 12, 2022	May 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 2.27%

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.0063	0.0543		0.0063
He	0.0001	0.0009		TRACE
N_2	0.0070	0.0603		0.0053
CO_2	0.8613	0.0000		0.9133
H_2S	0.0227	0.0000		0.0175
C_1	0.0790	0.6811		0.0388
C_2	0.0086	0.0741	30.6	0.0057
C_3	0.0072	0.0621	26.5	0.0051
iC_4	0.0012	0.0103	5.2	0.0010
nC_4	0.0033	0.0284	13.9	0.0030
iC_5	0.0008	0.0069	3.9	0.0009
nC_5	0.0010	0.0086	4.8	0.0012
C_6	0.0006	0.0052	3.3	0.0008
C_7+	0.0009	0.0078	6.0	0.0011
TOTAL	1.0000	1.0000	94.2	1.0000

WDMS Data Verification Check ⚠

Exceeds normal limits: CO2, H2
Exceeded compare limits: H2S, C1, C2, C3

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross			Net	
6.00	46.66	0.20	**5.42**	42.47
Air Free as Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*Air Free as Received*	*Moisture & Acid Gas Free*

Calculated Density

Relative			Absolute	
1.425	0.772	3.729	698.8	1.745
Moisture Free As Received	*Moisture & Acid Gas Free*	*C_7+ Moisture Free*	*C_7+ Density (kg/m³)*	*Total Sample Density (kg/m³)*

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7053.0	295.4	4266.2	215.3
pPc (kPa)	*pTc (K)*	*pPc (kPa)*	*pTc (K)*

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
	22700			32.66
Stain Tube (GPA 2377)	*Tutweiler (GPA C1)*	*Other*	*GC-SCD (ASTM D5504)*	

Calculated Molecular Weight (Moisture Free as Received) (g/mol)

41.3	108.0
Total Sample	*C_7+ Fraction*

Calculated Vapour Pressure

75.00
C_5+ (kPa)

Gas Compressibility

0.9921
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05002651B	EE041504024W4WETINLET		000189182	22ER869990A	22ER879427B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3770	3500	12	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Apr 05, 2022 11:50	Apr 07, 2022	Apr 12, 2022	Apr 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 2.27%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00708	0.06152		0.00666
He	0.00007	0.00061		0.00004
N_2	0.00843	0.07325		0.00601
CO_2	0.86224	0.00000		0.89608
H_2S	0.02270	0.00000		0.01910
C_1	0.07265	0.63158		0.05229
C_2	0.00858	0.07457	30.5	0.00693
C_3	0.00694	0.06029	25.5	0.00585
iC_4	0.00112	0.00973	4.9	0.00097
nC_4	0.00323	0.02810	13.6	0.00279
iC_5	0.00093	0.00810	4.6	0.00074
nC_5	0.00122	0.01063	5.9	0.00090
C_6	0.00122	0.01052	6.6	0.00059
C_7+	0.00359	0.03109	21.8	0.00105
TOTAL	1.00000	1.00000	113.3	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: H2S, C1, C2, C3, C6, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
6.44	51.26	**5.82**	46.28

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.436	0.862	737.0	1.759

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7045.74	296.52	4177.13	224.31

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	22700			32.66

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
41.59	106.45

Calculated Vapour Pressure

53.32
C_5+(kPa)

Gas Compressibility

0.9936
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number
05002651B	EE041504024W4WETI		000189182	22ER869990A	22ER879427B

Operator Name	Sampling Point	Unique Well Identifier
ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4

Well Name	Well License	Well Status	Well Fluid Status	LSD
ENHANCE CLIVE 4-15 BATTERY				

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00481	0.04161	28.3805
68.9+	C_7+	Heptanes+	0.00359	0.03109	21.8133
98.6+	C_8+	Octanes+	0.00222	0.01906	14.0565
125.8+	C_9+	Nonanes+	0.00087	0.00729	5.6294
150.9+	C_{10}+	Decanes+	0.00023	0.00183	1.4698
174.3+	C_{11}+	Undecanes+	0.00001	0.00009	0.0790
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00137	0.01203	7.7567
98.6 - 125.8	C_8	Octanes	0.00135	0.01177	8.4271
125.8 - 150.9	C_9	Nonanes	0.00064	0.00546	4.1596
150.9 - 174.3	C_{10}	Decanes	0.00021	0.00168	1.3544
174.3 - 196.0	C_{11}	Undecanes	0.00001	0.00009	0.0790
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00012	0.00101	0.5634
68.73	C_6	n-Hexane	0.00055	0.00479	3.0278
71.83	C_6	Methylcyclopentane	0.00028	0.00244	1.5138
80.06	C_6	Benzene	0.00016	0.00138	0.5939
80.78	C_6	Cyclohexane	0.00015	0.00134	0.8082
99.24	C_8	2,2,4-Trimethylpentane	0.00015	0.00130	1.0371
100.94	C_7	Methylcyclohexane	0.00027	0.00238	1.4679
110.61	C_7	Toluene	0.00018	0.00156	0.8042
136.16	C_8	Ethylbenzene	0.00004	0.00033	0.1977
138.33 ; 139.09	C_8	m&p-Xylene	0.00010	0.00083	0.4930
144.42	C_8	o-Xylene	0.00004	0.00031	0.1817
169.34	C_9	1,2,4-Trimethylbenzene	0.00003	0.00022	0.1705

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05002582A	EE041504024W4DRYOUTLET		000188788	22ER869990B	22ER879427A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3670	3500	10	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Apr 05, 2022 12:05	Apr 07, 2022	Apr 12, 2022	Apr 12, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 2.40%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00716	0.06173		0.00665
He	0.00008	0.00066		0.00004
N_2	0.00861	0.07417		0.00573
CO_2	0.85994	0.00000		0.89591
H_2S	0.02400	0.00000		0.01910
C_1	0.07671	0.66106		0.05298
C_2	0.00883	0.07608	31.4	0.00696
C_3	0.00693	0.05970	25.4	0.00594
iC_4	0.00108	0.00928	4.7	0.00098
nC_4	0.00305	0.02627	12.8	0.00284
iC_5	0.00077	0.00663	3.8	0.00075
nC_5	0.00094	0.00810	4.5	0.00092
C_6	0.00065	0.00555	3.5	0.00060
C_7+	0.00125	0.01078	7.4	0.00060
TOTAL	1.00000	1.00000	93.6	1.00000

WDMS Data Verification Check

Exceeded compare limits: H2S, C1, C2, C3, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
5.94	46.22	**5.38**	41.82

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.425	0.775	739.3	1.746

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7050.61	295.27	4228.44	213.39

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	24000			34.53

Calculated Molecular Weight

(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
41.27	104.17

Calculated Vapour Pressure

74.10

C_5+(kPa)

Gas Compressibility

0.9940

@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.

Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

05002582A	EE041504024W4DRY		000188788	22ER869990B	22ER879427A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00190	0.01633	10.9229
68.9+	C_7+	Heptanes+	0.00125	0.01078	7.4387
98.6+	C_8+	Octanes+	0.00069	0.00590	4.3124
125.8+	C_9+	Nonanes+	0.00026	0.00218	1.6516
150.9+	C_{10}+	Decanes+	0.00007	0.00055	0.4262
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0000
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00056	0.00488	3.1263
98.6 - 125.8	C_8	Octanes	0.00043	0.00373	2.6607
125.8 - 150.9	C_9	Nonanes	0.00019	0.00163	1.2254
150.9 - 174.3	C_{10}	Decanes	0.00007	0.00055	0.4262
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0000
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00007	0.00062	0.3521
68.73	C_6	n-Hexane	0.00027	0.00233	1.4844
71.83	C_6	Methylcyclopentane	0.00013	0.00116	0.7239
80.06	C_6	Benzene	0.00008	0.00065	0.2805
80.78	C_6	Cyclohexane	0.00007	0.00061	0.3717
99.24	C_8	2,2,4-Trimethylpentane	0.00006	0.00050	0.4004
100.94	C_7	Methylcyclohexane	0.00011	0.00091	0.5669
110.61	C_7	Toluene	0.00006	0.00051	0.2631
136.16	C_8	Ethylbenzene	0.00001	0.00009	0.0551
138.33 ; 139.09	C_8	m&p-Xylene	0.00004	0.00031	0.1860
144.42	C_8	o-Xylene	0.00001	0.00009	0.0527
169.34	C_9	1,2,4-Trimethylbenzene	0.00001	0.00007	0.0540

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05002726B	EE041504024W4DRYOUTLET		000188788	22ER858920E	22ER869990B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3375	3200	8	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Mar 07, 2022 10:15	Mar 08, 2022	Mar 11, 2022	Mar 11, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.91%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00665	0.07826		0.00731
He	0.00004	0.00053		0.00005
N_2	0.00573	0.06735		0.00654
CO_2	0.89591	0.00000		0.89108
H_2S	0.01910	0.00000		0.01520
C_1	0.05298	0.62323		0.05937
C_2	0.00696	0.08184	24.7	0.00747
C_3	0.00594	0.06983	21.8	0.00615
iC_4	0.00098	0.01158	4.3	0.00100
nC_4	0.00284	0.03344	12.0	0.00290
iC_5	0.00075	0.00886	3.7	0.00077
nC_5	0.00092	0.01085	4.5	0.00094
C_6	0.00060	0.00716	3.3	0.00060
C_7+	0.00060	0.00708	3.4	0.00062
TOTAL	1.00000	1.00000	77.6	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: H2S, C1

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
4.51	47.66	**4.09**	43.24

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.451	0.792	730.7	1.778

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7135.55	297.99	4172.10	216.29

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	19100			27.48

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
42.03	97.58

Calculated Vapour Pressure

88.84
C_5+(kPa)

Gas Compressibility

0.9941
@15 °C & 101.325 kPa

PROPERTIES OF C6+ FRACTION

Version: 1

05002726B	EE041504024W4DRY		000188788	22ER858920E	22ER869990B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00120	0.01424	6.6791
68.9+	C_7+	Heptanes+	0.00060	0.00708	3.3858
98.6+	C_8+	Octanes+	0.00018	0.00218	1.1196
125.8+	C_9+	Nonanes+	0.00000	0.00013	0.0709
150.9+	C_{10}+	Decanes+	0.00000	0.00004	0.0252
174.3+	C_{11}+	Undecanes+	0.00000	0.00002	0.0129
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00042	0.00490	2.2662
98.6 - 125.8	C_8	Octanes	0.00018	0.00206	1.0487
125.8 - 150.9	C_9	Nonanes	0.00000	0.00009	0.0457
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00002	0.0123
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00002	0.0129
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00007	0.00087	0.3595
68.73	C_6	n-Hexane	0.00025	0.00292	1.3615
71.83	C_6	Methylcyclopentane	0.00012	0.00140	0.6392
80.06	C_6	Benzene	0.00006	0.00072	0.2299
80.78	C_6	Cyclohexane	0.00005	0.00064	0.2871
99.24	C_8	2,2,4-Trimethylpentane	0.00004	0.00047	0.2768
100.94	C_7	Methylcyclohexane	0.00006	0.00066	0.2989
110.61	C_7	Toluene	0.00003	0.00033	0.1255
136.16	C_8	Ethylbenzene	0.00000	0.00000	0.0000
138.33 ; 139.09	C_8	m&p-Xylene	0.00000	0.00004	0.0194
144.42	C_8	o-Xylene	0.00000	0.00000	0.0000
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00000	0.0000

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

05003011A	EE041504024W4WETINLET		000189182	22ER858920C	22ER869990A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BB/BA
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				*Elevation (m)*		*Pressure (kPa)*		*Temperature (°C)*	
						3400	3300	9	23
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Mar 07, 2022 10:30	Mar 08, 2022	Mar 11, 2022	Mar 11, 2022	Calgary - Bernie Diep - Supervisor
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.91%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00666	0.07856		0.00770
He	0.00004	0.00051		0.00005
N_2	0.00601	0.07084		0.00649
CO_2	0.89608	0.00000		0.88443
H_2S	0.01910	0.00000		0.01500
C_1	0.05229	0.61657		0.06264
C_2	0.00693	0.08168	24.6	0.00769
C_3	0.00585	0.06896	21.5	0.00638
iC_4	0.00097	0.01138	4.2	0.00106
nC_4	0.00279	0.03290	11.7	0.00311
iC_5	0.00074	0.00873	3.6	0.00089
nC_5	0.00090	0.01058	4.3	0.00112
C_6	0.00059	0.00701	3.2	0.00094
C_7+	0.00105	0.01229	6.5	0.00250
TOTAL	1.00000	1.00000	79.7	1.00000

WDMS Data Verification Check

Exceeded compare limits: H2S, C1, C2, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
4.57	48.50	**4.13**	43.76

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.453	0.810	746.2	1.780

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7134.97	298.13	4157.79	217.72

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	19100			27.48

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
42.08	110.61

Calculated Vapour Pressure

76.87
C_5+(kPa)

Gas Compressibility

0.9940
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

PROPERTIES OF C6+ FRACTION

Version: 1

05003011A	EE041504024W4WETI		000189182	22ER858920C	22ER869990A
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00164	0.01930	9.7338
68.9+	C_7+	Heptanes+	0.00105	0.01229	6.5187
98.6+	C_8+	Octanes+	0.00063	0.00730	4.2024
125.8+	C_9+	Nonanes+	0.00041	0.00469	2.8586
150.9+	C_{10}+	Decanes+	0.00024	0.00278	1.7235
174.3+	C_{11}+	Undecanes+	0.00002	0.00031	0.2148
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00042	0.00499	2.3163
98.6 - 125.8	C_8	Octanes	0.00022	0.00261	1.3438
125.8 - 150.9	C_9	Nonanes	0.00017	0.00191	1.1351
150.9 - 174.3	C_{10}	Decanes	0.00021	0.00237	1.4633
174.3 - 196.0	C_{11}	Undecanes	0.00002	0.00031	0.2148
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00007	0.00085	0.3497
68.73	C_6	n-Hexane	0.00024	0.00287	1.3356
71.83	C_6	Methylcyclopentane	0.00012	0.00138	0.6290
80.06	C_6	Benzene	0.00006	0.00070	0.2228
80.78	C_6	Cyclohexane	0.00005	0.00064	0.2868
99.24	C_8	2,2,4-Trimethylpentane	0.00004	0.00049	0.2879
100.94	C_7	Methylcyclohexane	0.00006	0.00072	0.3265
110.61	C_7	Toluene	0.00003	0.00039	0.1497
136.16	C_8	Ethylbenzene	0.00001	0.00008	0.0338
138.33 ; 139.09	C_8	m&p-Xylene	0.00001	0.00015	0.0669
144.42	C_8	o-Xylene	0.00001	0.00009	0.0405
169.34	C_9	1,2,4-Trimethylbenzene	0.00003	0.00032	0.1825

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

11005457C	EE041504024W4WETINLET		000189182	22ER850584B	22ER858920C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/MJ
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB) From :	Test Interval (mKB) To:	Test Type	Test No.	Elevation (m) KB	Elevation (m) GRD	Pressure (kPa) Source	Pressure (kPa) Received	Temperature (°C) Source	Temperature (°C) Received
						3400	3500	13	21

Feb 09, 2022 10:45	Feb 11, 2022	Feb 18, 2022	Feb 18, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.40%/LAB = 1.50%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00770	0.07656		0.00714
He	0.00005	0.00052		0.00005
N_2	0.00649	0.06457		0.02573
CO_2	0.88443	0.00000		0.87378
H_2S	0.01500	0.00000		0.01900
C_1	0.06264	0.62285		0.05418
C_2	0.00769	0.07650	27.3	0.00714
C_3	0.00638	0.06345	23.4	0.00590
iC_4	0.00106	0.01057	4.6	0.00100
nC_4	0.00311	0.03094	13.1	0.00289
iC_5	0.00089	0.00883	4.3	0.00077
nC_5	0.00112	0.01116	5.4	0.00098
C_6	0.00094	0.00936	5.1	0.00069
C_7+	0.00250	0.02467	15.3	0.00075
TOTAL	1.00000	1.00000	98.7	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: H2S, C1, C7

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
5.46	50.68	**4.93**	45.70

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.446	0.842	740.1	1.772

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7076.54	296.89	4147.25	221.81

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	14000		15000	21.58

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
41.89	108.28

Calculated Vapour Pressure

60.47
C_5+(kPa)

Gas Compressibility

0.9938
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

11005457C	EE041504024W4WETI		000189182	22ER850584B	22ER858920C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00344	0.03404	20.4281
68.9+	C_7+	Heptanes+	0.00250	0.02467	15.3268
98.6+	C_8+	Octanes+	0.00159	0.01561	10.2710
125.8+	C_9+	Nonanes+	0.00074	0.00716	5.0290
150.9+	C_{10}+	Decanes+	0.00027	0.00257	1.9363
174.3+	C_{11}+	Undecanes+	0.00005	0.00046	0.4022
196.0+	C_{12}+	Dodecanes+	0.00000	0.00003	0.0269
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00091	0.00906	5.0558
98.6 - 125.8	C_8	Octanes	0.00085	0.00845	5.2420
125.8 - 150.9	C_9	Nonanes	0.00047	0.00459	3.0927
150.9 - 174.3	C_{10}	Decanes	0.00021	0.00202	1.4873
174.3 - 196.0	C_{11}	Undecanes	0.00005	0.00044	0.3753
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00003	0.0269
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00010	0.00101	0.4964
68.73	C_6	n-Hexane	0.00041	0.00408	2.2540
71.83	C_6	Methylcyclopentane	0.00021	0.00206	1.1137
80.06	C_6	Benzene	0.00012	0.00117	0.4407
80.78	C_6	Cyclohexane	0.00011	0.00108	0.5674
99.24	C_8	2,2,4-Trimethylpentane	0.00010	0.00095	0.6624
100.94	C_7	Methylcyclohexane	0.00017	0.00169	0.9110
110.61	C_7	Toluene	0.00014	0.00135	0.6088
136.16	C_8	Ethylbenzene	0.00003	0.00028	0.1443
138.33 ; 139.09	C_8	m&p-Xylene	0.00006	0.00057	0.2960
144.42	C_8	o-Xylene	0.00003	0.00026	0.1307
169.34	C_9	1,2,4-Trimethylbenzene	0.00002	0.00022	0.1481

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

04001177E	EE041504024W4DRYOUTLET		000188788	22ER850584C	22ER858920E
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/MJ
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB): From: To: — *Test Type*: — *Test No.*: — *Elevation (m)*: KB: GRD:

Pressure (kPa): 3400 Source, 3600 Received — *Temperature (°C)*: 11 Source, 21 Received

Feb 09, 2022 10:55	Feb 11, 2022	Feb 18, 2022	Feb 18, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.52%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00731	0.07794		0.00700
He	0.00005	0.00054		0.00004
N_2	0.00654	0.06979		0.01545
CO_2	0.89108	0.00000		0.88469
H_2S	0.01520	0.00000		0.01780
C_1	0.05937	0.63336		0.05397
C_2	0.00747	0.07965	26.5	0.00711
C_3	0.00615	0.06562	22.6	0.00605
iC_4	0.00100	0.01069	4.4	0.00107
nC_4	0.00290	0.03089	12.2	0.00318
iC_5	0.00077	0.00822	3.8	0.00089
nC_5	0.00094	0.01001	4.5	0.00111
C_6	0.00060	0.00645	3.3	0.00072
C_7+	0.00062	0.00684	3.7	0.00092
TOTAL	1.00000	1.00000	80.9	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: H2S, C1

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
4.75	46.72	**4.30**	42.34

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.445	0.778	742.7	1.770

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7101.73	296.71	4177.44	213.74

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	15200			21.87

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
41.85	100.93

Calculated Vapour Pressure

88.02 — *C_5+(kPa)*

Gas Compressibility

0.9941 — *@15 °C & 101.325 kPa*

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

04001177E	EE041504024W4DRY		000188788	22ER850584C	22ER858920E
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00122	0.01329	6.9439
68.9+	C_7+	Heptanes+	0.00062	0.00684	3.6737
98.6+	C_8+	Octanes+	0.00024	0.00271	1.5784
125.8+	C_9+	Nonanes+	0.00006	0.00095	0.5856
150.9+	C_{10}+	Decanes+	0.00004	0.00050	0.3375
174.3+	C_{11}+	Undecanes+	0.00001	0.00013	0.1018
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00038	0.00413	2.0953
98.6 - 125.8	C_8	Octanes	0.00018	0.00177	0.9928
125.8 - 150.9	C_9	Nonanes	0.00002	0.00044	0.2480
150.9 - 174.3	C_{10}	Decanes	0.00003	0.00037	0.2358
174.3 - 196.0	C_{11}	Undecanes	0.00001	0.00013	0.1018
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00007	0.00075	0.3432
68.73	C_6	n-Hexane	0.00024	0.00260	1.3395
71.83	C_6	Methylcyclopentane	0.00011	0.00122	0.6147
80.06	C_6	Benzene	0.00006	0.00065	0.2278
80.78	C_6	Cyclohexane	0.00005	0.00054	0.2644
99.24	C_8	2,2,4-Trimethylpentane	0.00004	0.00038	0.2451
100.94	C_7	Methylcyclohexane	0.00005	0.00049	0.2473
110.61	C_7	Toluene	0.00003	0.00033	0.1388
136.16	C_8	Ethylbenzene	0.00000	0.00004	0.0207
138.33 ; 139.09	C_8	m&p-Xylene	0.00001	0.00013	0.0608
144.42	C_8	o-Xylene	0.00000	0.00005	0.0242
169.34	C_9	1,2,4-Trimethylbenzene	0.00001	0.00010	0.0617

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

11000448C	EE041504024W4DRYOUTLET		000188788	21ER836788C	22ER850584C
Container Identification	Sample Point Code	Meter Code	AGAT WDMS Number	Previous Number	Laboratory Number

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	Sampling Point	Unique Well Identifier

ENHANCE CLIVE 4-15 BATTERY				
Well Name	Well License	Well Status	Well Fluid Status	LSD

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	Pool or Zone	Sampler's Company	Name of Sampler

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3540	3700	13	21
From :	To:	Test Type	Test No.	KB	GRD	Source	Received	Source	Received

Jan 10, 2022 10:15	Jan 12, 2022	Jan 18, 2022	Jan 18, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	Date Received	Date Analyzed	Date Reported	Location - Approved By - Title

Other Information : FIELD H2S BY TUT = 1.78%

COMPOSITION

Component	Mole Fraction Air Free As Received	Mole Fraction Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00700	0.07173		0.00717
He	0.00004	0.00045		0.00004
N_2	0.01545	0.15836		0.00580
CO_2	0.88469	0.00000		0.89249
H_2S	0.01780	0.00000		0.02150
C_1	0.05397	0.55323		0.05327
C_2	0.00711	0.07293	25.3	0.00700
C_3	0.00605	0.06200	22.2	0.00586
iC_4	0.00107	0.01102	4.7	0.00094
nC_4	0.00318	0.03261	13.4	0.00280
iC_5	0.00089	0.00914	4.4	0.00078
nC_5	0.00111	0.01142	5.4	0.00096
C_6	0.00072	0.00737	3.9	0.00069
C_7+	0.00092	0.00975	5.6	0.00070
TOTAL	1.00000	1.00000	84.8	1.00000

WDMS Data Verification Check

Exceeded compare limits: H2S, C1

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross		Net	
4.74	44.18	**4.29**	40.09
Air Free as Received	Moisture & Acid Gas Free	Air Free as Received	Moisture & Acid Gas Free

Calculated Density

Relative		Absolute	
1.446	0.829	729.0	1.772
Moisture Free As Received	Moisture & Acid Gas Free	C_7+ Density (kg/m³)	Total Sample Density (kg/m³)

Calculated Pseudo Critical Properties

As Sampled		Acid Gas Free	
7084.17	296.19	4079.18	210.05
pPc (kPa)	pTc (K)	pPc (kPa)	pTc (K)

Hydrogen Sulfide (H_2S) (ppm)

Field Value		Laboratory Value		g/m³
	17800			25.61
Stain Tube (GPA 2377)	Tutweiler (GPA C1)	Other	GC-SCD (ASTM D5504)	

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

41.88	101.09
Total Sample	C_7+ Fraction

Calculated Vapour Pressure

83.69
C_5+(kPa)

Gas Compressibility

0.9940
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

PROPERTIES OF C6+ FRACTION

AGAT Laboratories

Version: 1

11000448C	EE041504024W4DRY		000188788	21ER836788C	22ER850584C
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO DRY OUTLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00164	0.01711	9.4496
68.9+	C_7+	Heptanes+	0.00092	0.00975	5.5637
98.6+	C_8+	Octanes+	0.00038	0.00418	2.5631
125.8+	C_9+	Nonanes+	0.00006	0.00079	0.5186
150.9+	C_{10}+	Decanes+	0.00000	0.00010	0.0704
174.3+	C_{11}+	Undecanes+	0.00000	0.00000	0.0018
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00054	0.00557	3.0006
98.6 - 125.8	C_8	Octanes	0.00032	0.00339	2.0445
125.8 - 150.9	C_9	Nonanes	0.00006	0.00069	0.4482
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00010	0.0686
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00000	0.0018
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00009	0.00090	0.4288
68.73	C_6	n-Hexane	0.00029	0.00301	1.6121
71.83	C_6	Methylcyclopentane	0.00014	0.00145	0.7601
80.06	C_6	Benzene	0.00007	0.00071	0.2603
80.78	C_6	Cyclohexane	0.00007	0.00068	0.3482
99.24	C_8	2,2,4-Trimethylpentane	0.00005	0.00056	0.3762
100.94	C_7	Methylcyclohexane	0.00008	0.00081	0.4220
110.61	C_7	Toluene	0.00004	0.00044	0.1934
136.16	C_8	Ethylbenzene	0.00000	0.00005	0.0247
138.33 ; 139.09	C_8	m&p-Xylene	0.00001	0.00010	0.0484
144.42	C_8	o-Xylene	0.00000	0.00003	0.0159
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00001	0.0063

AGAT Laboratories

EXTENDED GAS ANALYSIS

Version: 1

11005224B	EE041504024W4WETINLET		000189182	21ER836788B	22ER850584B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

CLIVE	NOT APPLICABLE	AGAT RED DEER	BA/BB
Field or Area	*Pool or Zone*	*Sampler's Company*	*Name of Sampler*

Test Interval (mKB)				Elevation (m)		Pressure (kPa)		Temperature (°C)	
						3570	3700	16	21
From :	*To:*	*Test Type*	*Test No.*	*KB*	*GRD*	*Source*	*Received*	*Source*	*Received*

Jan 10, 2022 10:05	Jan 12, 2022	Jan 18, 2022	Jan 18, 2022	Calgary - Gerry Ecker - Reporter
Date/Time Sampled	*Date Received*	*Date Analyzed*	*Date Reported*	*Location - Approved By - Title*

Other Information : FIELD H2S BY TUT = 1.90%

COMPOSITION

Component	Mole Fraction: Air Free As Received	Mole Fraction: Air & Acid Gas Free As Received	Liquid Volume mL / m³	Mole Fraction of Previous Analysis
H_2	0.00714	0.06654		0.00848
He	0.00005	0.00047		0.00005
N_2	0.02573	0.23986		0.00658
CO_2	0.87378	0.00000		0.88238
H_2S	0.01900	0.00000		0.02280
C_1	0.05418	0.50517		0.05973
C_2	0.00714	0.06659	25.4	0.00710
C_3	0.00590	0.05497	21.7	0.00606
iC_4	0.00100	0.00929	4.4	0.00100
nC_4	0.00289	0.02690	12.1	0.00297
iC_5	0.00077	0.00717	3.8	0.00077
nC_5	0.00098	0.00915	4.7	0.00098
C_6	0.00069	0.00640	3.7	0.00044
C_7+	0.00075	0.00748	4.6	0.00066
TOTAL	1.00000	1.00000	80.4	1.00000

WDMS Data Verification Check ⚠

Exceeded compare limits: H2S, C1

PROPERTIES

Calculated Heating Value @15 °C & 101.325 kPa *(MJ/m³)*

Gross: Air Free as Received	Gross: Moisture & Acid Gas Free	Net: Air Free as Received	Net: Moisture & Acid Gas Free
4.64	39.00	**4.21**	35.40

Calculated Density

Relative: Moisture Free As Received	Relative: Moisture & Acid Gas Free	Absolute: C_7+ Density (kg/m³)	Absolute: Total Sample Density (kg/m³)
1.439	0.827	730.6	1.763

Calculated Pseudo Critical Properties

As Sampled: pPc (kPa)	As Sampled: pTc (K)	Acid Gas Free: pPc (kPa)	Acid Gas Free: pTc (K)
7047.35	294.24	4016.10	199.61

Hydrogen Sulfide (H_2S) (ppm)

Field Value: Stain Tube (GPA 2377)	Field Value: Tutweiler (GPA C1)	Laboratory Value: Other	Laboratory Value: GC-SCD (ASTM D5504)	g/m³
	19000			27.33

Calculated Molecular Weight
(Moisture Free asReceived) (g/mol)

Total Sample	C_7+ Fraction
41.67	99.83

Calculated Vapour Pressure

83.66
C_5+(kPa)

Gas Compressibility

0.9941
@15 °C & 101.325 kPa

Results relate to only items tested. Analysis and associated calculations are based on GPA 2261, GPA 2286, GPA 2145, AGA #5, and TP-17.
Sampling performed by AGAT Laboratories is done according to Field Sampling Procedure Manual

View or download your data online at webfluids.agatlabs.com

AGAT Laboratories

PROPERTIES OF C6+ FRACTION

Version: 1

11005224B	EE041504024W4WETI		000189182	21ER836788B	22ER850584B
Container Identification	*Sample Point Code*	*Meter Code*	*AGAT WDMS Number*	*Previous Number*	*Laboratory Number*

ENHANCE ENERGY INC	DEXPRO WET INLET GAS	04-15-040-24W4
Operator Name	*Sampling Point*	*Unique Well Identifier*

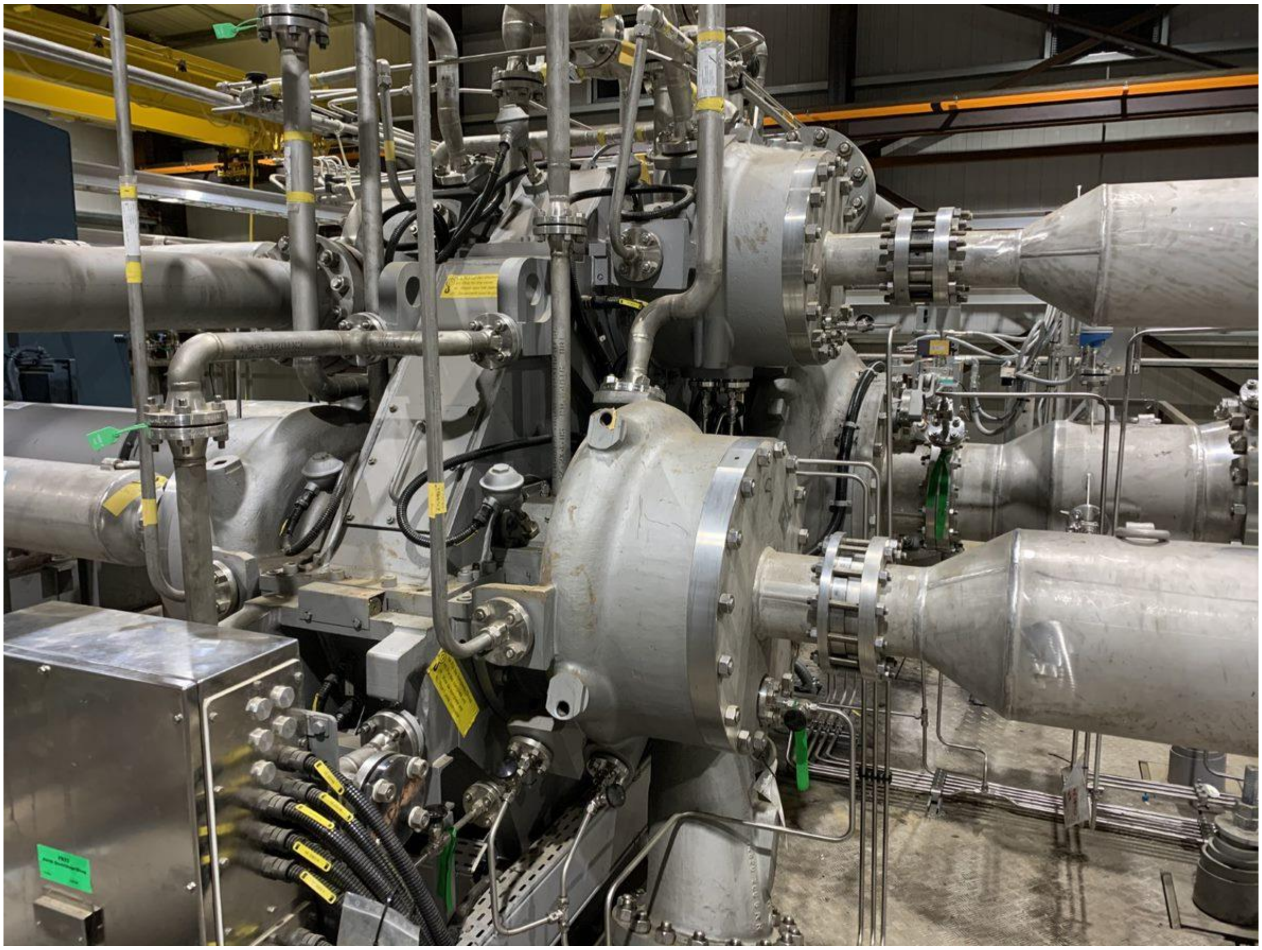
ENHANCE CLIVE 4-15 BATTERY				
Well Name	*Well License*	*Well Status*	*Well Fluid Status*	*LSD*

BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Summary	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
36.2+	C_6+	Hexanes+	0.00144	0.01388	8.3393
68.9+	C_7+	Heptanes+	0.00075	0.00748	4.6223
98.6+	C_8+	Octanes+	0.00026	0.00282	1.8853
125.8+	C_9+	Nonanes+	0.00003	0.00052	0.3755
150.9+	C_{10}+	Decanes+	0.00000	0.00010	0.0794
174.3+	C_{11}+	Undecanes+	0.00000	0.00001	0.0063
196.0+	C_{12}+	Dodecanes+	0.00000	0.00000	0.0000
216.4+	C_{13}+	Tridecanes+	0.00000	0.00000	0.0000
235.6 - 270.7	C_{14}+	Tetradecanes+	0.00000	0.00000	0.0000

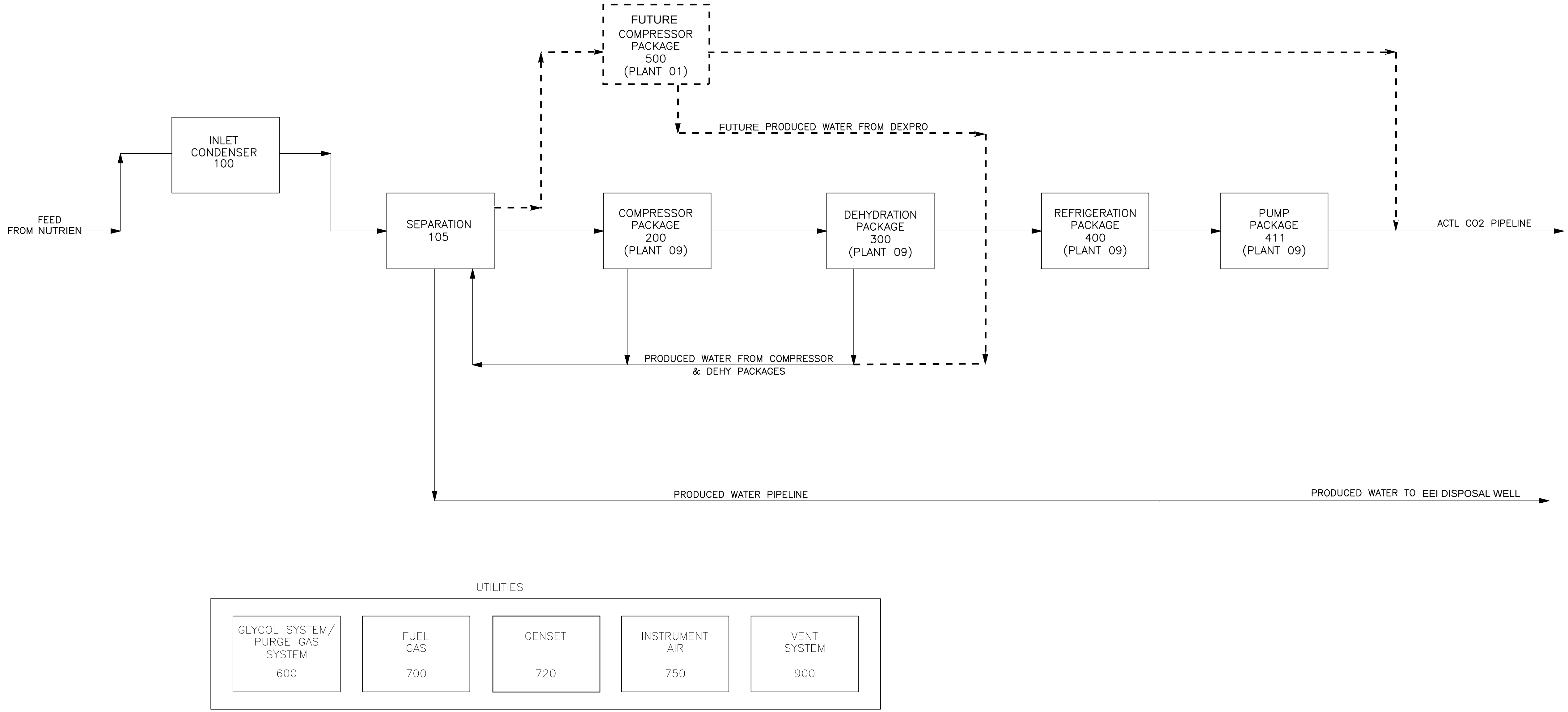
BOILING POINT RANGE (°C)	Carbon Number	Hydrocarbon Grouping	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
68.9 - 98.6	C_7	Heptanes	0.00049	0.00466	2.7370
98.6 - 125.8	C_8	Octanes	0.00023	0.00230	1.5098
125.8 - 150.9	C_9	Nonanes	0.00003	0.00042	0.2960
150.9 - 174.3	C_{10}	Decanes	0.00000	0.00010	0.0732
174.3 - 196.0	C_{11}	Undecanes	0.00000	0.00001	0.0063
196.0 - 216.4	C_{12}	Dodecanes	0.00000	0.00000	0.0000
216.4 - 235.6	C_{13}	Tridecanes	0.00000	0.00000	0.0000
235.6 - 253.6	C_{14}	Tetradecanes	0.00000	0.00000	0.0000
253.6 - 270.69	C_{15}	Pentadecanes	0.00000	0.00000	0.0000

BOILING POINT RANGE (°C)	Carbon Number	Relevent Compounds	As Received Mole Fraction	Acid Gas Free Mole Fraction	As Received Liquid Volume (mL/m³)
49.28	C_5	Cyclopentane	0.00008	0.00075	0.3939
68.73	C_6	n-Hexane	0.00029	0.00266	1.5647
71.83	C_6	Methylcyclopentane	0.00014	0.00128	0.7389
80.06	C_6	Benzene	0.00007	0.00065	0.2622
80.78	C_6	Cyclohexane	0.00006	0.00060	0.3392
99.24	C_8	2,2,4-Trimethylpentane	0.00005	0.00045	0.3335
100.94	C_7	Methylcyclohexane	0.00006	0.00060	0.3481
110.61	C_7	Toluene	0.00003	0.00033	0.1561
136.16	C_8	Ethylbenzene	0.00000	0.00002	0.0138
138.33 ; 139.09	C_8	m&p-Xylene	0.00001	0.00007	0.0399
144.42	C_8	o-Xylene	0.00000	0.00003	0.0146
169.34	C_9	1,2,4-Trimethylbenzene	0.00000	0.00001	0.0091

APPENDIX II- Redwater CO_2 Recovery Unit Process Flow **Submitted on March 31, 2023**



Redwater CO_2 Recovery Unit Compressor



REFERENCE DRAWINGS	DWG. NO.

NO.	DATE	PROJECT DESCRIPTION	PROJ.	BY	APPD.

REV. NUMBER	ISSUE STAGE	DATE	BY	CHKD.	APPD.
B	A – ISSUED FOR REVIEW	14-06-18	CL	SW	TB
	B – RE-ISSUED FOR REVIEW	14-07-24	KH	SW	

ENGINEER'S STAMP

PERMIT No. P10437

PROFESSIONAL STAMP AFFIXED ABOVE SHALL APPLY ONLY TO REV(s) A

S.A.W. ENGINEERING LTD.

ENHANCE ENERGY INC.

SITE TYPE CO2 RECOVERY FACILITY

MAIN LSD. LSD 04-17-056-21 W4M

SCALE NONE

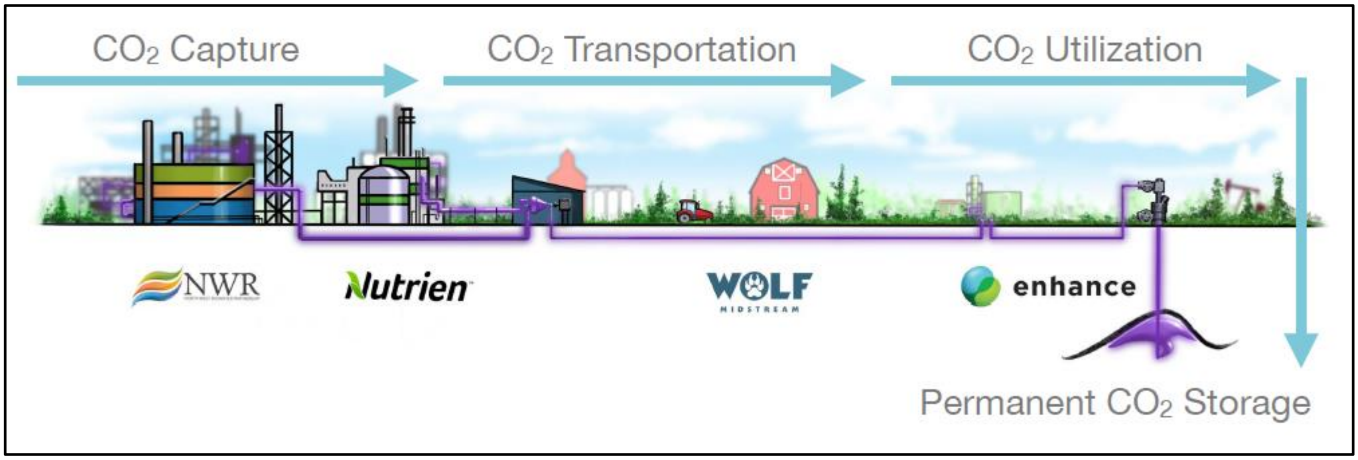
EPCM No. SAW 12-100

TITLE UNIT 09 AGRIUM CO2 BLOCK FLOW DIAGRAM

AREA STURGEON COUNTY

FILE NO. 12-100-P-F-0050

APPENDIX III- Monthly Emissions and Energy Use **Submitted on March 31, 2023**



ACTL Project Components- Capture, Transport and Utilization

FACILITY ENERGY CONSUMPTION																								
	CAPTURE								TRANSPORT										UTILIZATION					
	REDWATER CRU				NWR CRU				STURGEON				ACTL MISC						CLIVE CO2-EOR					
	POWER	NATURAL GAS	Throughput	Energy Use	POWER	NATURAL GAS	Throughput	Energy Use	POWER	NATURAL GAS	Throughput	Energy Use	POWER	NATURAL GAS	GASOLINE	DIESEL	Throughput	Energy Use	POWER	NATURAL GAS TO PROCESS	NATURAL GAS TO FLARE	PROPANE TO FLARE	Injection	Energy Use
Month	MW-hrs	GJ	tonnes CO2	MJ/kg	MW-hrs	GJ	tonnes CO2	MJ/kg	MW-hrs	GJ	tonnes CO2	MJ/kg	MW-hrs	GJ	litres	litres	tonnes CO2	MJ/kg	MW-hrs	GJ	GJ	litres	tonnes CO2e	MJ/kg
January	422	269	0	#DIV/0!	6035	8	89,785	0.24	5283	1	89,785	0.21	4	0	2043	0	89,466	0.00095	2008	1446	1295	8290	89,466	0.11378
February	648	271	1,833	1.42	6596	8	97,964	0.24	5516	2	97,964	0.20	4	0	1597	0	98,425	0.00069	2069	1341	635	1940	98,425	0.09625
March	2708	414	16,816	0.60	6985	8	94,134	0.27	5457	8	94,134	0.21	4	0	1978	0	110,982	0.00073	2021	1400	927	9890	110,982	0.08878
April	3045	409	20,443	0.56	7020	8	102,482	0.25	5803	2	102,482	0.20	3	0	2269	0	122,515	0.00072	1874	1321	598	2500	122,515	0.07126
May	3057	382	18,485	0.62	7241	8	108,637	0.24	6105	1	108,637	0.20	3	0	1826	0	127,111	0.00056	2255	1087	663	2510	127,111	0.07814
June	2970	298	17,888	0.61	7150	8	97,235	0.26	5428	2	97,235	0.20	2	0	1946	0	114,241	0.00066	2065	1007	702	1020	114,241	0.08027
July	3065	296	17,441	0.65	7255	8	112,336	0.23	6235	2	112,336	0.20	3	0	1387	0	129,772	0.00043	2072	1141	1797	10080	129,772	0.08208
August	3086	301	18,686	0.61	1871	8	27,339	0.25	1655	1	27,339	0.22	2	0	2300	0	46,226	0.00190	2206	1309	1049	0	46,226	0.22279
September	879	243	13,486	0.25	47	8	0	#DIV/0!	62	0	0	#DIV/0!	2	0	2188	0	12,636	0.00661	2042	991	748	13870	12,636	0.74728
October	1185	182	6,039	0.74	1688	8	18,104	0.34	1104	1	18,104	0.22	3	0	2319	0	23,148	0.00382	2048	1007	743	1020	23,148	0.39521
November	2737	508	15,064	0.69	1789	8	27,801	0.23	1655	0	27,801	0.21	4	0	1650	0	39,809	0.00174	1906	1141	521	10080	39,809	0.22049
December	2033	488	12,444	0.63	7156	8	110,473	0.23	6279	0	110,473	0.20	5	0	2854	0	120,391	0.000958522	1971.3	1339	926	3470	120,391	0.07849
TOTAL	**25835**	**4061**	**158,624**	**0.61**	**60834**	**92**	**886,290**	**0.25**	**50581**	**22**	**886,290**	**0.21**	**38**	**0**	**24357**	**0**	**1,034,722**	**0.00094**	**24538**	**14530**	**10604**	**64670**	**1,034,722**	**0.11124**

NOTES:
1) CO2 throughput at CRUs does not equal throughput on ACTL or Clive due to storage of compressible CO2 in the ACTL
2) Fuel use by ACTL operators assigned to ACTL misc. Power use in ACTL misc is used at valve stations.
3) A small amount of natural gas (8 GJ/mo) and power (20 MW-hrs/mo) use at the NWR CRU is based on an engineering study for equipment that is not sub-metered.

FACILITY CO2e EMISSIONS																								
	CAPTURE								TRANSPORT										UTILIZATION					
	REDWATER CRU				NWR CRU				STURGEON				ACTL MISC						CLIVE CO2-EOR					
	POWER	NATURAL GAS	Throughput	Assocciated Emissions	POWER	NATURAL GAS	Throughput	Assocciated Emissions	POWER	NATURAL GAS	Throughput	Assocciated Emissions	POWER	NATURAL GAS	GASOLINE	DIESEL	Throughput	Assocciated Emissions	POWER	NATURAL GAS TO PROCESS	NATURAL GAS TO FLARE	PROPANE TO FLARE	Injection	Assocciated Emissions
Month	MW-hrs	GJ	tonnes CO2	tonnes CO2e	MW-hrs	GJ	tonnes CO2	tonnes CO2e	MW-hrs	GJ	tonnes CO2	tonnes CO2e	MW-hrs	GJ	litres	litres	tonnes CO2	tonnes CO2e	MW-hrs	GJ	GJ	litres	tonnes CO2e	tonnes CO2e
January	422	269	0	255	6035	8	89,785	3441	5283	1	89,785	3011	4	0	2043	0	89,466	8	2008	1446	1295	8290	89,466	1372
February	648	271	1,833	384	6596	8	97,964	3760	5516	2	97,964	3144	4	0	1597	0	98,425	6	2069	1341	635	1940	98,425	1304
March	2708	414	16,816	1566	6985	8	94,134	3982	5457	8	94,134	3111	4	0	1978	0	110,982	8	2021	1400	927	9890	110,982	1325
April	3045	409	20,443	1758	7020	8	102,482	4002	5803	2	102,482	3308	3	0	2269	0	122,515	8	1874	1321	598	2500	122,515	1192
May	3057	382	18,485	1763	7241	8	108,637	4128	6105	1	108,637	3480	3	0	1826	0	127,111	6	2255	1087	663	2510	127,111	1408
June	2970	298	17,888	1709	7150	8	97,235	4076	5428	2	97,235	3094	2	0	1946	0	114,241	7	2065	1007	702	1020	114,241	1283
July	3065	296	17,441	1763	7255	8	112,336	4136	6235	2	112,336	3554	3	0	1387	0	129,772	5	2072	1141	1797	10080	129,772	1387
August	3086	301	18,686	1775	1871	8	27,339	1067	1655	1	27,339	943	2	0	2300	0	46,226	8	2206	1309	1049	0	46,226	1400
September	879	243	13,486	514	47	8	0	27	62	0	0	35	2	0	2188	0	12,636	7	2042	991	748	13870	12,636	1306
October	1185	182	6,039	686	1688	8	18,104	962	1104	1	18,104	629	3	0	2319	0	23,148	8	2048	1007	743	1020	23,148	1310
November	2737	508	15,064	1588	1789	8	27,801	1020	1655	0	27,801	943	4	0	1650	0	39,809	7	1906	1141	521	10080	39,809	1191
December	2033	488	12,444	1185	7156	8	110,473	4079	6279	0	110,473	3579	5	0	2854	0	120,391	11	1971	1339	926	3470	120,391	1272
TOTAL	**25835**	**4061**	**158,624**	**14946**	**60834**	**92**	**886,290**	**34681**	**50581**	**22**	**886,290**	**28832**	**38**	**0**	**24357**	**0**	**1,034,722**	**88**	**24538**	**14530**	**10604**	**64670**	**1,034,722**	**15751**

NOTES:
1) CO2 throughput at CRUs does not equal throughput on ACTL or Clive due to storage of compressible CO2 in the ACTL
2) Fuel use by ACTL operators assigned to ACTL misc. Power use in ACTL misc is used at valve stations.
3) A small amount of natural gas (8 GJ/mo) and power (20 MW-hrs/mo) use at the NWR CRU is based on an engineering study for equipment that is not sub-metered.

APPENDIX IV- Nutrien Disposal Well Water Analysis **Submitted on March 31, 2023**

Nutrien CO_2 Recovery Unit

Your P.O. #: WCS-01020
Your Project #: EEI WJ WELL
Your C.O.C. #: 1 of 1

Attention: DAN IRWIN

WOLF CARBON SOLUTIONS INC.
500, 520 - 3RD AVE SW
CALGARY, AB
CANADA T2P 0R3

Report Date: 2022/12/30
Report #: R3283752
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2A0424
Received: 2022/12/22, 06:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity @25C (pp, total), CO3,HCO3,OH	1	N/A	2022/12/28	AB SOP-00005	SM 23 2320 B m
Chloride/Sulphate by Auto Colourimetry	1	N/A	2022/12/23	AB SOP-00020	SM23-4500-Cl/SO4-E m
Conductivity @25C	1	N/A	2022/12/23	AB SOP-00005	SM 23 2510 B m
Sulphide (as H2S)	1	N/A	2022/12/22		Auto Calc
Hardness	1	N/A	2022/12/27		Auto Calc
Elements by ICP-Dissolved-Lab Filtered (1)	1	N/A	2022/12/30	AB SOP-00042	EPA 6010d R5 m
Ion Balance	1	N/A	2022/12/28		Auto Calc
Ammonia-N (Total)	1	N/A	2022/12/30	AB SOP-00007	SM 23 4500 NH3 A G m
Nitrate and Nitrite	1	N/A	2022/12/22		Auto Calc
NO2 (N); NO2 (N) + NO3 (N) in Water	1	N/A	2022/12/22	AB SOP-00091	SM 23 4500 NO3m
Nitrate (as N)	1	2022/12/22	2022/12/22		Auto Calc
pH @25°C (2)	1	N/A	2022/12/23	AB SOP-00005	SM 23 4500-H+B m
Total Sulphide	1	N/A	2022/12/22	AB SOP-00080	SM 23 4500 S2-A D Fm
Total Dissolved Solids (Calculated)	1	N/A	2022/12/28		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, results relate to the supplied samples tested.

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Your P.O. #: WCS-01020
Your Project #: EEI WJ WELL
Your C.O.C. #: 1 of 1

Attention: DAN IRWIN

WOLF CARBON SOLUTIONS INC.
500, 520 - 3RD AVE SW
CALGARY, AB
CANADA T2P 0R3

Report Date: 2022/12/30
Report #: R3283752
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C2A0424

Received: 2022/12/22, 06:00

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) Dissolved > Total Imbalance: When applicable, Dissolved and Total results were reviewed and data quality meets acceptable levels unless otherwise noted.

(2) 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. Bureau Veritas endeavours to analyze samples as soon as possible after receipt.

Encryption Key

AUTHORIZED REPORT
RAPPORT AUTORISÉ

Bureau Veritas
30 Dec 2022 14:08:48

Please direct all questions regarding this Certificate of Analysis to:
Customer Solutions, Western Canada Customer Experience Team
Email: customersolutionswest@bureauveritas.com
Phone# (403) 291-3077

===

This report has been generated and distributed using a secure automated process.
Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Scott Cantwell, General Manager responsible for Alberta Environmental laboratory operations.

Bureau Veritas Job #: C2A0424
Report Date: 2022/12/30

WOLF CARBON SOLUTIONS INC.
Client Project #: EEI WJ WELL
Your P.O. #: WCS-01020

RESULTS OF CHEMICAL ANALYSES OF WATER

Bureau Veritas ID			BJO254			BJO254		
Sampling Date			2022/12/15 14:00			2022/12/15 14:00		
COC Number			1 of 1			1 of 1		
	UNITS	**Criteria**	**PRODUCED WATER (DISPOSAL WELL TUBING HEAD)**	**RDL**	**QC Batch**	**PRODUCED WATER (DISPOSAL WELL TUBING HEAD) Lab-Dup**	**RDL**	**QC Batch**
Calculated Parameters								
Hardness (CaCO3)	mg/L	-	<0.50	0.50	A839062			
Ion Balance (% Difference)	%	-	0.22	N/A	A839064			
Nitrate (N)	mg/L	-	<0.010	0.010	A839069			
Nitrate (NO3)	mg/L	-	<0.044	0.044	A839068			
Nitrite (NO2)	mg/L	-	<0.033	0.033	A839068			
Sulphide (as H2S)	mg/L	-	<0.0020	0.0020	A839061			
Calculated Total Dissolved Solids	mg/L	-	7500	49	A839071			
Misc. Inorganics								
Conductivity	uS/cm	-	15000	2.0	A840618			
pH	pH	6:9.5	7.57	N/A	A840616			
Anions								
Alkalinity (PP as CaCO3)	mg/L	-	<10	10	A840614			
Alkalinity (Total as CaCO3)	mg/L	-	7800	10	A840614			
Bicarbonate (HCO3)	mg/L	-	9500	10	A840614			
Carbonate (CO3)	mg/L	-	<10	10	A840614			
Hydroxide (OH)	mg/L	-	<10	10	A840614			
Total Sulphide	mg/L	-	<0.0018	0.0018	A839944			
Chloride (Cl)	mg/L	500	13	1.0	A840738	13	1.0	A840738
Sulphate (SO4)	mg/L	-	<1.0	1.0	A840738	<1.0	1.0	A840738
Nutrients								
Total Ammonia (N)	mg/L	5	**2200**	38	A842951	**2300**	38	A842951
Nitrite (N)	mg/L	-	<0.010	0.010	A839422			
Nitrate plus Nitrite (N)	mg/L	-	<0.010	0.010	A839422			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not Applicable

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

Bureau Veritas ID		BJO254		
Sampling Date		2022/12/15 14:00		
COC Number		1 of 1		
	UNITS	**PRODUCED WATER (DISPOSAL WELL TUBING HEAD)**	**RDL**	**QC Batch**
Lab Filtered Elements				
Dissolved Calcium (Ca)	mg/L	<0.30	0.30	A843979
Dissolved Iron (Fe)	mg/L	0.077	0.060	A843979
Dissolved Magnesium (Mg)	mg/L	<0.20	0.20	A843979
Dissolved Manganese (Mn)	mg/L	<0.0040	0.0040	A843979
Dissolved Potassium (K)	mg/L	<0.30	0.30	A843979
Dissolved Sodium (Na)	mg/L	<0.50	0.50	A843979
RDL = Reportable Detection Limit				

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	13.0°C

Sample BJO254 [PRODUCED WATER (DISPOSAL WELL TUBING HEAD)] : Sample was analyzed past method specified hold time for NO2 (N); NO2 (N) + NO3 (N) in Water. Exceedance of hold time increases the uncertainty of test results but does not necessarily imply that results are compromised.
Criteria: Gas Plant Waste Water Limits
Measurement of Uncertainty has not been accounted for when stating conformity to the selected criteria, where applicable.

Results relate only to the items tested.

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

Bureau Veritas Job #: C2A0424
Report Date: 2022/12/30

WOLF CARBON SOLUTIONS INC.
Client Project #: EEI WJ WELL
Your P.O. #: WCS-01020

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
A839422	AFI	Matrix Spike	Nitrite (N)	2022/12/22		85	%	80 - 120
			Nitrate plus Nitrite (N)	2022/12/22		113	%	80 - 120
A839422	AFI	Spiked Blank	Nitrite (N)	2022/12/22		97	%	80 - 120
			Nitrate plus Nitrite (N)	2022/12/22		95	%	80 - 120
A839422	AFI	Method Blank	Nitrite (N)	2022/12/22	<0.010		mg/L	
			Nitrate plus Nitrite (N)	2022/12/22	<0.010		mg/L	
A839422	AFI	RPD	Nitrite (N)	2022/12/22	NC		%	20
			Nitrate plus Nitrite (N)	2022/12/22	1.8		%	20
A839944	DSX	Matrix Spike [BJO254-01]	Total Sulphide	2022/12/22		118	%	80 - 120
A839944	DSX	Spiked Blank	Total Sulphide	2022/12/22		117	%	80 - 120
A839944	DSX	Method Blank	Total Sulphide	2022/12/22	<0.0018		mg/L	
A839944	DSX	RPD	Total Sulphide	2022/12/22	12		%	20
A840614	TMU	Spiked Blank	Alkalinity (Total as CaCO3)	2022/12/23		98	%	80 - 120
A840614	TMU	Method Blank	Alkalinity (PP as CaCO3)	2022/12/23	<1.0		mg/L	
			Alkalinity (Total as CaCO3)	2022/12/23	<1.0		mg/L	
			Bicarbonate (HCO3)	2022/12/23	<1.0		mg/L	
			Carbonate (CO3)	2022/12/23	<1.0		mg/L	
			Hydroxide (OH)	2022/12/23	<1.0		mg/L	
A840614	TMU	RPD	Alkalinity (PP as CaCO3)	2022/12/23	1.8		%	20
			Alkalinity (Total as CaCO3)	2022/12/23	0.55		%	20
			Bicarbonate (HCO3)	2022/12/23	0.74		%	20
			Carbonate (CO3)	2022/12/23	1.8		%	20
			Hydroxide (OH)	2022/12/23	NC		%	20
A840616	TMU	Spiked Blank	pH	2022/12/23		100	%	97 - 103
A840616	TMU	RPD	pH	2022/12/23	0.33		%	N/A
A840618	TMU	Spiked Blank	Conductivity	2022/12/23		101	%	90 - 110
A840618	TMU	Method Blank	Conductivity	2022/12/23	<2.0		uS/cm	
A840618	TMU	RPD	Conductivity	2022/12/23	0.11		%	10
A840738	ACR	Matrix Spike [BJO254-01]	Chloride (Cl)	2022/12/23		110	%	80 - 120
			Sulphate (SO4)	2022/12/23		102	%	80 - 120
A840738	ACR	Spiked Blank	Chloride (Cl)	2022/12/23		97	%	80 - 120
			Sulphate (SO4)	2022/12/23		108	%	80 - 120
A840738	ACR	Method Blank	Chloride (Cl)	2022/12/23	<1.0		mg/L	
			Sulphate (SO4)	2022/12/23	<1.0		mg/L	
A840738	ACR	RPD [BJO254-01]	Chloride (Cl)	2022/12/23	2.5		%	20
			Sulphate (SO4)	2022/12/23	NC		%	20
A842951	AFI	Matrix Spike [BJO254-01]	Total Ammonia (N)	2022/12/30		NC	%	80 - 120
A842951	AFI	Spiked Blank	Total Ammonia (N)	2022/12/29		106	%	80 - 120
A842951	AFI	Method Blank	Total Ammonia (N)	2022/12/29	<0.015		mg/L	
A842951	AFI	RPD [BJO254-01]	Total Ammonia (N)	2022/12/30	4.8		%	20
A843979	MPU	Matrix Spike	Dissolved Calcium (Ca)	2022/12/30		103	%	80 - 120
			Dissolved Iron (Fe)	2022/12/30		95	%	80 - 120
			Dissolved Magnesium (Mg)	2022/12/30		102	%	80 - 120
			Dissolved Manganese (Mn)	2022/12/30		98	%	80 - 120
			Dissolved Potassium (K)	2022/12/30		104	%	80 - 120
			Dissolved Sodium (Na)	2022/12/30		102	%	80 - 120
A843979	MPU	Spiked Blank	Dissolved Calcium (Ca)	2022/12/30		95	%	80 - 120
			Dissolved Iron (Fe)	2022/12/30		90	%	80 - 120
			Dissolved Magnesium (Mg)	2022/12/30		92	%	80 - 120
			Dissolved Manganese (Mn)	2022/12/30		91	%	80 - 120
			Dissolved Potassium (K)	2022/12/30		96	%	80 - 120
			Dissolved Sodium (Na)	2022/12/30		94	%	80 - 120
A843979	MPU	Method Blank	Dissolved Calcium (Ca)	2022/12/30	<0.30		mg/L	
			Dissolved Iron (Fe)	2022/12/30	<0.060		mg/L	

Bureau Veritas Calgary: 2021 - 41st Avenue N.E. T2E 6P2 Telephone (403) 291-3077 Fax (403) 291-9468

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limits
			Dissolved Magnesium (Mg)	2022/12/30	<0.20		mg/L	
			Dissolved Manganese (Mn)	2022/12/30	<0.0040		mg/L	
			Dissolved Potassium (K)	2022/12/30	<0.30		mg/L	
			Dissolved Sodium (Na)	2022/12/30	<0.50		mg/L	
A843979	MPU	RPD	Dissolved Calcium (Ca)	2022/12/30	NC		%	20
			Dissolved Iron (Fe)	2022/12/30	NC		%	20
			Dissolved Magnesium (Mg)	2022/12/30	NC		%	20
			Dissolved Manganese (Mn)	2022/12/30	NC		%	20
			Dissolved Potassium (K)	2022/12/30	NC		%	20
			Dissolved Sodium (Na)	2022/12/30	1.9		%	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.

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.

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).

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Suwan (Sze Yeung) Fock, B.Sc., Scientific Specialist

Bureau Veritas Proprietary Software
Logiciel Propriétaire de Bureau Veritas

Automated Statchk

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

APPENDIX V- Clive Measurement, Monitoring and Verification Report

Submitted on March 31, 2023

ACTL

Alberta

Natural Resources Canada / Ressources naturelles Canada

Canada

enhance

NWR NORTH WEST REDWATER PARTNERSHIP

WOLF MIDSTREAM

Clive CO_2 Injection & Enhanced Oil Recovery Project

MMV Soil & Groundwater Monitoring

2022 Annual Report

Prepared for
Enhance Energy Inc.

Integrated Sustainability **23 March 2023**

Report Submission To:	Nico Vandersalm
Legal Company Name:	Enhance Energy Inc.
Company Address:	#2000 - 500 4 Ave SW, Calgary Alberta, T2P 2V6
Contact Phone Number:	+1(403) 984-5251
Contact Email Address:	NVandersalm@enhanceenergy.com

Submitted By:	Emily Guzman
Legal Company Name:	Integrated Sustainability.
Company Address:	#1600 – 400 3 Ave SW, Calgary Alberta, T2P 4H2
Contact Phone Number:	+1 (403) 863-9819
Contact Email Address:	Emily.Guzman@integratedsustainability.ca

Document Number:	CP22-EEI-01-00-RPT-WR-2022_GWSG_Report-RevB
Document Path:	P:\EEI\CP22-EEI-01-00\5.0_Tech_Exec\5.6_GeoSci\6. Report\Rev1\CP22-EEI-01-00-RPT-WR-2022_GWSG_Report-Rev1.docx
Document Revision Number:	1

WATER | WASTE | ENERGY

Disclaimer

The information presented in this document was compiled and interpreted exclusively for the purposes stated in Section 1 of the document. Integrated Sustainability provided this document for Enhance Energy Inc. solely for the purpose noted above.

Integrated Sustainability has exercised reasonable skill, care, and diligence to assess the information acquired during the preparation of this document but makes no guarantees or warranties as to the accuracy or completeness of this information. The information contained in this document is based upon, and limited by, the circumstances and conditions acknowledged herein, and upon information available at the time of its preparation. The information provided by others is believed to be accurate but cannot be guaranteed.

Integrated Sustainability does not accept any responsibility for the use of this document for any purpose other than that stated in Section 1 and does not accept responsibility to any third party for the use in whole or in part of the contents of this document. Any alternative use, including that by a third party, or any reliance on, or decisions based on this document, is the responsibility of the alternative user or third party.

Any questions concerning the information, or its interpretation should be directed to Emily Guzman.

Document Revision History

Rev No.	Rev Description	Author	Reviewer	Approver	Rev Date
0	Issued as Final	Jon Fennell / Joseph Cruz	Ian Grant	Emily Guzman	17-Mar-2023
1	Issued as Final	Jon Fennell / Joseph Cruz	Ian Grant	Emily Guzman	23-Mar-2023

Table of Contents

Tables within Text

Figures within Text

Tables

Figures

Appendices

EXECUTIVE SUMMARY

Enhance Energy Inc. (Enhance) currently operates an enhanced oil recovery project near the town of Clive, Alberta. The solvent used is carbon dioxide (CO_2) sourced from two facilities located in Sturgeon County northeast of Edmonton, Alberta. The CO_2 is transported via pipeline to Enhance's facility where it is injected into existing wells completed in the Leduc Formation. The injection zone is located at a depth of roughly 1,800 m to 1,900 m below ground level.

Enhance prepared a Measurement, Monitoring, and Verification (MMV) plan for monitoring this CO_2 injection operation. This plan includes routine measurement gases in the bedrock formations (Geosphere) within the Leduc Formation and Nisku Formation, located above the Ireton caprock, as well as shallower formations hosting CBM (coal bed methane) intervals. Enhance has conducted regular production well (Geosphere), groundwater (Hydrosphere), and soil gas (Biosphere) monitoring in the areas since 2019. Samples of the local Atmosphere have also been collected as part of the program.

Results of monitoring associated with the Leduc wells indicates an increase in CO_2 concentrations since initiation of injection activities in March 2020. Conversely, no changes have been noted in the overlying Nisku Formation or other shallower bedrock formations. This is direct evidence that the CO_2 containment is being achieved.

With respect to the Hydrosphere, groundwater sampling has not yielded any changes due to operations in the area. Elevated CO_2 and CH_4 values have been detected in some wells, as well as various types of bacteria (in >70% of the wells assessed). This has resulted in iron and manganese concentrations above the current Canadian drinking water guidelines at several locations. The presence of bacteria in water wells is not uncommon and is typically related to lack of well maintenance. Stable isotopes of carbon in CO_2 and CH_4 fractions ($\delta^{13}C_{CO2}$ and $\delta^{13}C_{CH4}$, respectively), as well as sulphur in the sulphate present in the water ($\delta^{34}S_{SO4}$), indicate conditions favourable for bacterially-mediated sulphate-reduction and methanogenesis via CO_2 reduction. However, contributions from coal (known to be present in the shallow bedrock) cannot be ruled out.

As for Biosphere monitoring, the majority of soil gas probe locations continue to yield results that fall within established baseline conditions. Two exceptions remain where anomalous CH_4 detections occur – the 12-25 locations and 14-23 location.

The 12-25 soil gas monitoring location has consistently yielded the highest CH_4 concentrations in the study area since monitoring began. Minor detections (a few ppm) of hydrogen sulphide (H_2S) have also been noted. The presence of H_2S is a concern given the potential connection with deeper Devonian intervals, like the Leduc Formation. Forensic analysis using stable carbon and sulphur, as well as radiogenic carbon, isotopes indicates that the anomalous CH_4 readings are consistent with a deeper hydrocarbon source of thermogenic origin (based on $\delta^{13}C_{CH4}$ values). Measurement for $\delta^{13}C_{CO2}$ and $\delta^{13}C_2H_6$ also support a connection with gas originating from the lower Mannville Group, again confirming that the injected CO_2 is remaining intact.

With respect to the 14-23 location, the CH_4 detected there appears to be related to gas originating from underlying coal deposits. Coalbed methane production does occur in the area indicating the presence of this source gas. This conclusion is based on the lack of detectable C_2H_6 and H_2S values, typically associated with deeper hydrocarbon sources, and a previously measured $\delta^{13}C_{CH4}$ value (in the fall of 2021) consistent with a biogenic source.

Based on the Geosphere, Hydrosphere, and Biosphere monitoring completed to date it is clear that the CO_2 being injected into the Leduc Formation by Enhance is achieving the goal of containment.

1 INTRODUCTION

1.1 Project Background

Enhance Energy Inc. (Enhance) is an Alberta-based company that specializes in enhanced oil recovery (EOR) using the injection of carbon dioxide (CO_2). Enhance operates the Clive Project (the Project) located in Lacombe County, Alberta and about 30 km northeast of the City of Red Deer.

Enhance receives captured carbon dioxide (CO_2) from two sources via the Alberta Carbon Trunk Line - Nutrien Ltd. (Nutrien) and Northwest Redwater Partnership (NWR). The CO_2 is injected into the Leduc Formation at a depth of roughly 1,800 m to 1,900 m below ground surface (mbgs). The Leduc Formation is capped by the Ireton Shale, a tight formation separating the Leduc Formation from overlying formations, including the Nisku Formation, other Mannville and Colorado Group shales, siltstones, and sandstones, the shallower (and coal-bearing) Horseshoe Canyon formation, and unconsolidated glacial deposits and surficial soils blanketing the area.

Enhance developed a Monitoring, Measurement & Verification (MMV) plan in 2019 and has been following that since then. The monitoring that supports this plan has been purposely designed to ensure containment of injected CO_2 by assessing conditions in the Geosphere (deeper bedrock formations), the Hydrosphere (nearer surface freshwater aquifers) and the Biosphere (shallow surficial deposits). Field programs completed during 2019, 2020, 2021 and 2022 have developed a useful baseline of soil gas and groundwater quality conditions across the project area to identify any trends in conditions that may suggest a CO_2 containment breach.

1.2 Scope of Report

This report represents the fourth edition of the MMV baseline monitoring program. The key objectives are as follows:

- Identify key chemical characteristics of the injected CO_2 compared to other bedrock formation gases (including Nisku, Mannville and Horseshoe Canyon production wells).
- Summarize results of the most recent field campaigns (summer and fall 2022).
- Assess temporal trends of monitoring data to determine if any changes outside of anticipated baseline conditions is evident.
- Investigate anomalous conditions detected in the soil and/or groundwater and assess the source and cause of such detections using geochemical forensics (i.e. gas composition and isotopic signatures).
- Document the findings of the 2022 program and update understanding of the baseline conditions in the Geo-, Hydro-, and Biospheres against which CO_2 containment is confirmed.

1.3 Changes to MMV program

Some modifications and refinements were made to the monitoring portion of the MMV program in 2022. These included:

- The removal of four soil gas sample locations, as per direction from Enhance, as sufficient baseline data has been collected.
- A change in soil gas sampling frequency at 13 locations, as these locations were sampled once during the 2022 program as per direction from Enhance and are approaching sufficient baseline data collection.
- All soil gas samples were analyzed for carbon isotopes ($\delta^{13}C_{CO2}$) as per direction from Enhance.
- The addition of two more landowners water wells to the existing annual schedule for groundwater sampling and analysis.
- A change in groundwater sampling frequency at the Enhance monitoring wells located at 10-35-039-24 W4M, as the monitoring wells were only sampled in the summer of the 2022 program as directed by Enhance as sufficient baseline data has been collected.
- The addition of one soil gas probe at 08-09-040-24 W4M.

2 GEOSPHERE MONITORING

2.1 Purpose

Monitoring of the Geosphere, or the deeper bedrock formations forming the CO_2 injection zone (i.e. Leduc Formation) and overlying intervals represents the first line of defense in ensuring CO_2 containment. Monitoring of the gas compositions in those intervals is critical to identifying changes in injection zone from the CO_2 introduced, and more importantly identify that it is remaining contained as evidenced by lack of change in the overlying formations.

2.2 Monitoring infrastructure

Enhance's Project extends from the southern half of Township 41, Range 24 West of the 4th Meridian, just east of Clive, AB down to the northern half of Township 39, Range 24 W4M. The location of the active MMV area is shown in Figure 1. This represents an area of roughly 18 sections of land or about 50 km^2 that is mainly used for crop production. Of course, oil and gas development also occurs in the area, as well as the current CO_2 injection scheme. Several private residences are also located throughout the area.

Enhance has been monitoring gases in the bedrock formations across the study area since 2019. This has included existing gas production wells completed in various formations including the Leduc, Nisku, Mannville Group and coalbed methane (CBM) completed in Horseshoe Canyon Formation. The data from these existing production wells forms the basis of comparison to confirm containment of CO_2 injected into the Leduc Formation.

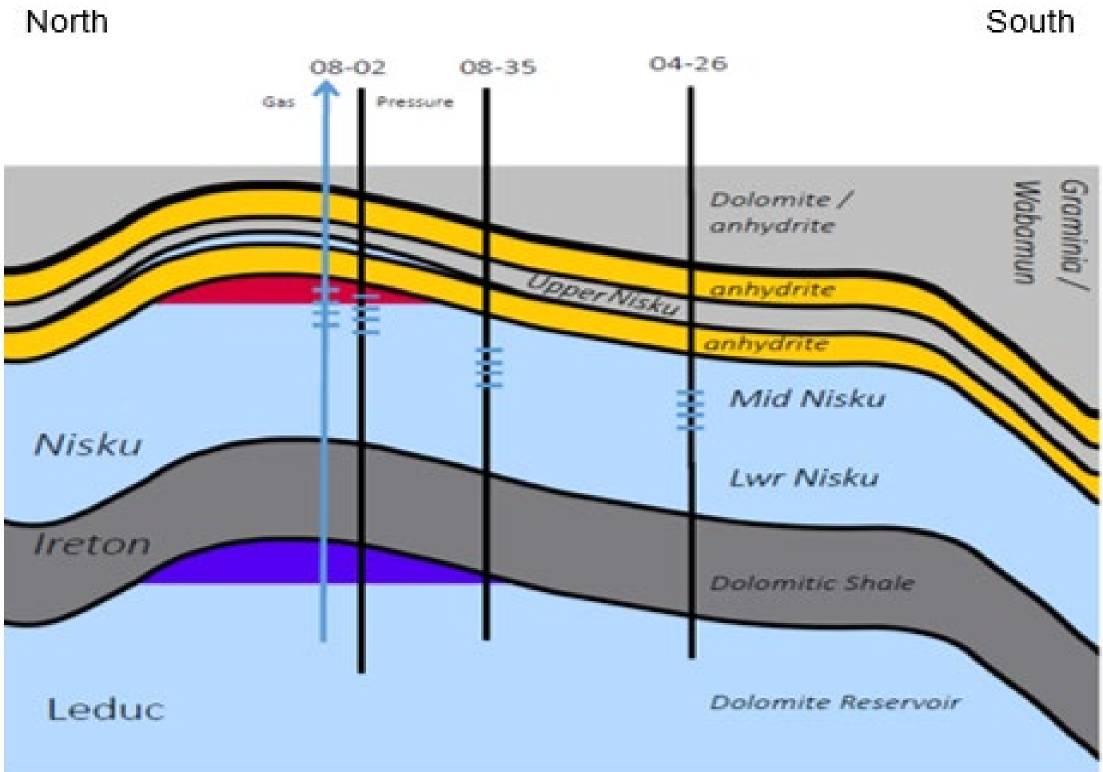


Figure A. **Configuration of monitoring in the Nisku Formation to ensure containment of CO_2 injected into the Leduc Formation.**

(Note: purple = CO_2; red = CH_4 and other related natural gases)

Figure A provides a schematic of the configuration of monitoring in the Nisku Formation above the Leduc injection interval and the presence of the Ireton Formation caprock. It is evident from this configuration of wells that any CO_2 that may migrate from the Leduc zone would first be detected in the Nisku wells.

2.3 Monitoring Activities

To facilitate evaluation of the Geosphere environment, gases from a number of operating oil and gas wells in the area as well as the injected CO_2 have been collected analyzed over the years for gas composition, stable and radiogenic isotopes of carbon, and recently stable sulphur (a good indicator of Devonian influence). The database developed to date has allowed similarities and difference to be established between each interval, which has proven extremely useful in determining sources when anomalous detections are made.

All samples were collected into SUMMA cannisters, provided by AGAT Laboratories (AGAT) and delivered to AGAT's Red Deer laboratory. Gases were collected from established sampling ports on the various gas wells and CO_2 injection equipment to ensure isolation from atmospheric air contamination. Locations of where samples were taken are shown in Figure 2.

2.3.1 Injected CO_2

Concentrations

Enhance measures the composition of the gases that they are injecting as part of the Clive Project on a monthly basis at three different sample points. The gases in question are received from Nutrien and NWR and comprises 95-100 mole% CO_2 with a minor component of methane (up to 20 ppm or so).

Isotopic Characteristics (Stable & Radiogenic)

Stable carbon isotope values for the CO_2 received from Nutrien are quite unique in character ($\delta^{13}C_{CO2}$ = -42 ‰ to -41‰) compared to the CO_2 received from the NWR facility ($\delta^{13}C_{CO2}$ = -27‰ to -25‰). Measurement of the combined stream injected down into the Leduc formation yielded a value of -29.2‰ in 2021. This value indicates a greater contribution of CO_2 from the NWR source as opposed to CO_2 received from the Nutrien facility.

2.3.2 Formation Gases

Composition

Gas compositions from the Leduc Formation, the overlying Nisku Formation, Mannville and CBM wells in the immediate vicinity of the EOR project have been measured to identify any changes from expected values, particularly with respect to CO_2 in the Nisku. Detection of an increasing trend of this acid gas at any given location would be an indication of a possible breach of the Ireton Formation caprock.

Gas monitoring results provided by Enhance indicate that differing compositions of gas occur for the various formations being assessed as part of this program. Table A provides a summary of the differences in some of the major gas components for each Geosphere interval:

Table A. Comparison of gas compositions in various bedrock formations

Formation	CO_2 mole %	CH_4 mole %	C_2H_6 mole %	H_2S mole %
Injected CO_2	95-100	$\leq$ 0.2	$\leq$ 0.05	0
Leduc	$\leq$ 98	$\leq$ 75	$\leq$ 8	$\leq$ 17
Nisku	$\leq$ 7	$\leq$ 97	$\leq$ 21	$\leq$ 39
CBM	$\leq$ 1	$\leq$ 99	$\leq$ 1	0

One of the most notable differences in gas composition is the concentration of hydrogen sulphide (H_2S) in the Nisku and Leduc formations. The sour nature of the gases sourced from those formations provides a useful diagnostic to detect leakage from those intervals to shallower horizons, and hence a possible breach of CO_2 containment. However, the detection of measurable H_2S is not, by itself, an indicator of a CO_2 breach given that the gas could migrate upward from the Nisku Formation if a suitable pathway, or pathways, exists (the most notable being a compromised well bore). As such additional evidence is required to attribute a source.

Isotopic Characteristics

Isotopes of various elements comprising subsurface gases can be extremely useful in determining the source and types of physical, chemical, and biological processes that may have altered it from its original composition. Isotopes of carbon in the CO_2 and methane (CH_4) gas fractions, and stable sulphur in the H_2S (or resulting sulphate [SO_4] molecule following oxidation) are particularly helpful in this regard.

Enhance has collected a considerable amount of data on the isotopic composition of various gas fractions from bedrock formations beneath the operating area, including the injected CO_2. Table B summarized these compositions, highlighting their similarities and differences.

Table B. Comparison of isotope compositions in various gas fractions and related formations

Formation	$\delta^{13}C_{CO2}$ (‰)	$\delta^{13}C_{CH4}$ (‰)	$\delta^{13}C_{C2H6}$ (‰)	$\delta^{34}S$ (‰)	$F14C_{CO2}$
Injected CO_2	-43.1 to -26.7	-44.5 to -29.9	-31.5 to -29.6	--	<0.002 to 0.051
Leduc	-4.6 to 0.5	-40.5 to -30.8	-34.3 to -30.8	9.4 to 17.0	<0.001
Nisku	-8.4 to -0.2	-45.0 to -30.9	-33.9 to -30.8	13.0 to 15.0	<0.002
Mannville	-13.7 to -1.6	-47.2 to -46.0	-28.4 to -27.4	--	--
CBM	-13.8 to 24.5	-58.3 to -52.8	-39.0 to -37.1	--	--

Note: -- denotes that isotope compositions have not been measured. $F14C_{CO2}$ values for the Mannville and CBM intervals are also assumed to be low (i.e. <0.002, or essentially zero indicating ages greater than 50,000 years).

Sulphurous gases contained in Devonian formations of the Alberta Basin have uniquely positive $\delta^{34}S$ values and are therefore useful to identify migration of deeper gases up into shallower groundwater or soil intervals. $\delta^{34}S$ values measured in the Nisku and Leduc samples range from 9.4‰ to 17‰. In contrast, shallower groundwater (i.e. upper 30 m) in the central portion of Alberta has been shown to have $\delta^{34}S$ values ranging from -10.3‰ to 0.1‰, with an average of 5.4‰ (Cheung et al. 2010). Fennell and Bentley (1996) similarly found that shallow soils in the Alberta Plains area could have baseline $\delta^{34}S$ values of the soluble and organic sulphur in the soil horizons ranging from -20‰ to -5‰ and associated groundwater values averaging around -15‰.

A completed listing of historical gas composition and isotope measurements for the various bedrock intervals assessed, as well as the CO_2 being injected, is provided in Appendix 1.

2.4 Data Trends

Figure B provides a temporal history of mole% CO_2 measurements in various Nisku and Leduc wells located in the MMV area. The start of CO_2 injection occurred around March 2020 and has continued since that time. The impact to CO_2 levels in the Leduc interval is obvious after the commencement of operations. The Nisku interval, however, shows no sign of change from baseline CO_2 values. This is direct evidence that CO_2 containment is remaining intact.

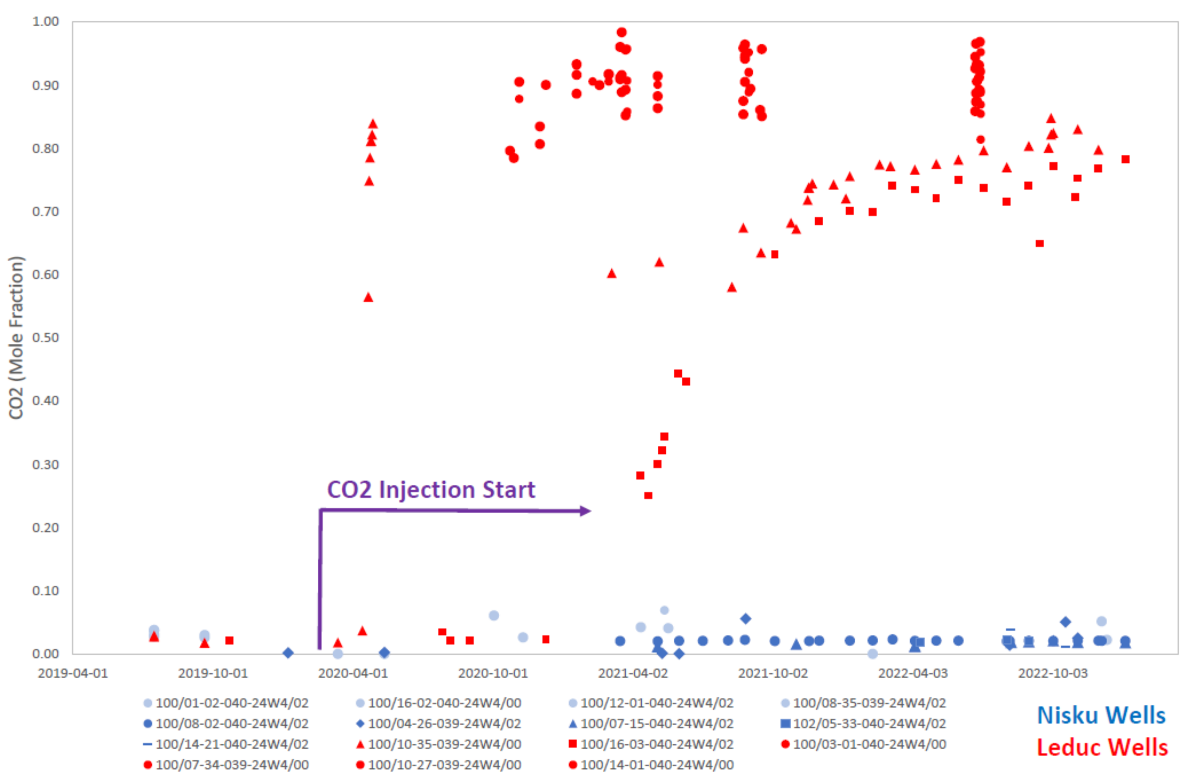


Figure B. Time Series Plot of in CO2 within the Nisku and Leduc formations.

3 HYDROSPHERE MONITORING

3.1 Purpose

Hydrosphere monitoring is equally important to ensuring CO_2 containment in the underlying formations and represented the second line of defence in the effort. If a detection for leaked CO_2 is made in the deeper Geosphere intervals this does not necessarily mean that the shallower intervals are at risk. The considerable thickness of the lower permeability formation as well as aquifer intervals that could intercept this CO_2 is significant. Nevertheless, monitoring of this intermediate to shallower interval of the bedrock formations is critical in the assessment of CO_2 containment.

Hydrosphere monitoring in 2022 consisted of two groundwater sampling programs occurring in summer and fall. This included major and trace element chemistry as well dissolved gas composition.

3.2 Monitoring infrastructure

Enhance's current monitoring well network consists of the following:

- Five dedicated monitoring wells associated with the Project, as follows:
  - Three located near Enhance's existing 10-35-039-24 W4M well pad.
  - One water supply/monitoring well at Enhance's main facility located in 04-15-040-24 W4M.
  - One dedicated well installed at the 12-25-039-24W4 location to investigate consistently anomalous soil gas readings for CH_4.
- Thirty-four (34) private landowner water wells.

Locations of the Project and landowner water wells across the study area are shown on Figure 3.

3.3 Monitoring activities

The 2022 summer and fall sampling programs occurred during the months of June and September. Table C summarizes the number of samples collected, as well as duplicates to assess data integrity.

Table C. Groundwater Samples Collected During Each Campaign

	Summer 2022 Event		Fall 2022 Event	
Types	Planned	Completed	Planned	Completed
Project Monitoring Wells	5	5	2	2
Landowner Water Wells	33	29	33	30
Blind Duplicates	5	5	5	5
Total Samples	43	39	40	37

Prior to accessing private water wells, the owners were contacted for consent. Sampling was not conducted at properties where the landowner could not be contacted during the duration of both sampling events, or where there was no power to the well as confirmed by the landowner(s). All sample collection and handling activities conducted by Integrated Sustainability followed the established methodology for the program. Details of this methodology are provided in Appendix 2.

3.4 Data Evaluation

Groundwater sampling results are included in the following tables:

- Table 1A - Field Measured Parameters
- Table 1B - General, Major Ions, Nutrients
- Table 2 – Groundwater Analytical Results: Dissolved Metals
- Table 3 – Groundwater Analytical Results: Isotopic Abundance
- Table 4 – Microbiological Parameters

The groundwater in the study area can be described as fresh, low mineralization (Total dissolved solid = 518 ± 158 mg/L), alkaline (pH = 8.3 ± 0.3), and very hard (203 ± 140 mg/L as $CaCO_3$) water, with a few exceptions. Most of the samples collected are dominated by calcium and bicarbonate ions except for naturally softened groundwaters, which are dominated by sodium and bicarbonate ions.

Table D provides a summary of groundwater quality in 2022 with the range of values noted for various constituents of interest, bacterial concentrations and isotopic compositions. Comparisons have also been made to established drinking water guidelines as well as selected criteria, and percentage exceedances thereof.

Table D. **Summary of selected groundwater parameters, assessment criteria, and % exceedances of assessment criteria**

Parameter	Drinking Water Guideline or Screening Criteria 1	Range	% Exceedances
Total dissolved solids, TDS (mg/L)	500	236 to 950	48
pH (standard units)	7.0 to 10.5	7.9 to 9.5	0
Hardness (as mg/L $CaCO_3$)	80-100 [1]	0.7 to 442	66
Chloride, Cl (mg/L)	10 [1]	<1 to 111	29
Nitrate, NO_3 (as mg/L N)	10	<0.1 to 7.9	0
Iron, Fe (mg/L)	0.3	<0.1 to 11.3	35
Manganese, Mn (mg/L	0.12	<0.003 to 0,595	38
SFB (cfu/mL)	0	<1 to 67,000	84
IRB (cfu/mL)	0	<1 to 9000	91
SRB (cfu/mL)	0	<1 to 115,000	68
CO_2 (ppmv)	--	1 to 18,500	--
CH_4 (ppmv)	--	<10 to 400	--
$\delta^{13}C_{DIC}$ (‰)	--	-15.0 to -11.1	--
$\delta^{13}C_{CO2}$ (‰)	--	-22.0 to 0.0	--
$\delta^{13}C_{CH4}$ (‰)	--	-87.1 to -32.7	--
$\delta^{34}S_{SO4}$ (‰)	--	-9.6 to 2.2	--

Note: SFB = slime forming bacteria; IRB = iron reducing bacteria; SRB = sulphate reducing bacteria

The presence of dissolved gases was confirmed in nine samples collected as part of the 2022 program, which yielded CO_2 concentrations from 1 to 22,700 ppmv and CH_4 concentrations from 26 to 44,100 ppmv. The wells yielding the highest values are as follows:

CO_2:

- Land Owner 30: 12,400 ppmv
- Land Owner 1: 6070 ppmv
- Land Owner 29: 22,700 ppmv
- Land Owner 22: 18,500 ppmv

CH_4:

- Land Owner 24: 44,100 ppmv
- Land Owner 30: 26 ppmv
- Land Owner 1: 56 ppmv
- Land Owner 29: 418 ppmv

No detections of ethane (C_2H_6) or H_2S were documented, suggesting a more natural origin versus a deeper hydrocarbon source. Measurements of associated $\delta^{13}C_{DIC}$ values ranged from -15.0‰ to -11.1‰ (median = -12.6‰), consistent with values expected for CO_2 hydration and conversion to bicarbonate (HCO_3^-) and/or carbonate (CO_3^{2-}) ions in mixed open and closed-system conditions (Clark and Fritz 1997).

Additional testing of eleven wells for $\delta^{34}S_{SO4}$ yielded values ranging from -9.6‰ to 2.2‰ (median = -0.3‰). The range is consistent with waters sourced from upper bedrock intervals and soils beneath central Alberta (Cheung et al. 2010; Fennell and Bentley 1998).

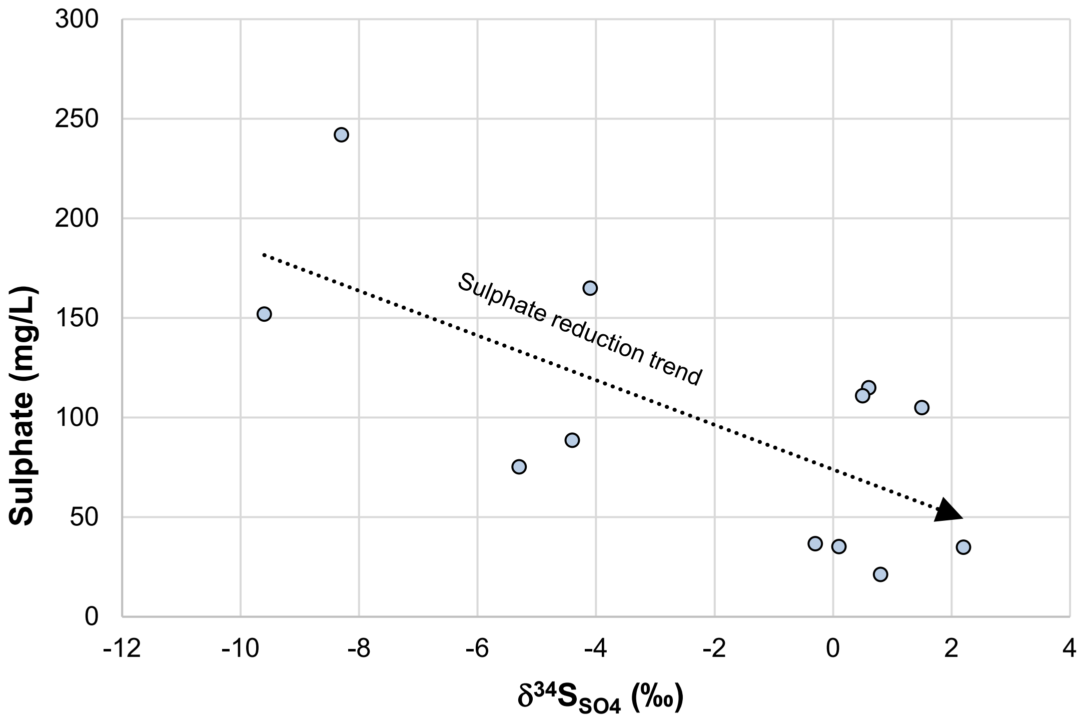


Figure C. Comparison of $\delta^{34}S_{SO4}$ and Sulphate Values

Figure C shows a comparison of $\delta^{34}S_{SO4}$ values and SO_4 concentrations. Although the data is somewhat limited (due to only a few measurements of $\delta^{34}S_{SO4}$) the plots does show a trend towards higher $\delta^{34}S_{SO4}$ values when SO_4 concentrations are lower. This relationship is consistent with sulphate reduction and is not surprising considering the presence of sulphate-reducing bacteria in many of the wells (70% or more), as well as notable CO_2 and CH_4 levels in some. This would also explain the elevated iron and manganese values as well, which occur in about 30 to 40% of the sampled collected. Iron- and manganese-reduction reactions occurs before sulphate-reduction, which is subsequently followed by methanogenesis.

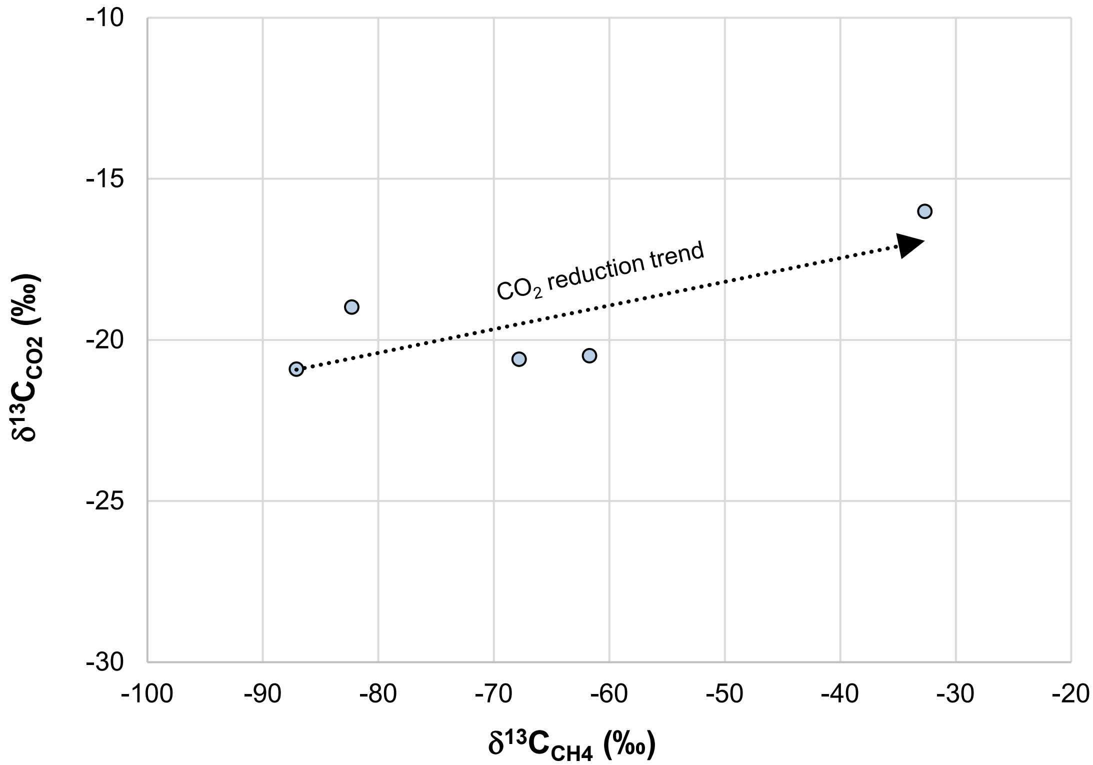


Figure D. Comparison of $\delta^{13}C_{CH4}$ and $\delta^{13}C_{CO2}$ Values.

When $\delta^{13}C_{CH4}$ and $\delta^{13}C_{CO2}$ values are compared (Figure D) a positive relationship is noted. The upward trend is consistent with CO_2 reduction, which is one explanation for the presence of CH_4 in some of the water wells. Another is the degassing of methane from coal in the underlying bedrock deposits. It is more than likely that a combination of these two source pathways is occurring.

3.5 Data Trends

The number of sampling events that have been completed to date now allows an assessment of trends to be conducted, at least for wells with a sufficient number of readings (n = 4 or more). Of the parameters assessed the only ones to exhibit statistically-significant trends (at least 95% confidence and more than 10% change per year) are:

- pH (↑)
- Chloride(↓)
- Fluoride (↑)
- Nitrate (as N)(↑)
- Aluminum (↓)
- Cadmium (↑)
- Copper (~)
- Lead (↓)
- Lithium (↓)
- Manganese (↓)
- Phosphorous (↑)
- Silicon (↑)
- Tin (↑)
- Uranium (↓)
- Zinc (↓)

The arrows indicate the direction of change for each identified parameter, while the "~" symbol indicates variable trends (i.e. some increasing and some decreasing). It is important to note that each parameter trend identified is only related to a small number of wells (4 or less) and no systemic influence is obvious, particularly as it may relate to CO_2 injection activities. These temporal changes are interpreted to be more a result of local well conditions than anything else.

Temporal trend charts for selected indicators (i.e. pH, TDS, Chloride, and $\delta^{13}CCO_2$) are provided shown in Figures 9 to 12. Review of the charts indicates a general lack of change for the wells being monitored as part of this MMV program.

4 BIOSPHERE AND ATMOSPHERE MONITORING

4.1 Purpose

The 2022 soil gas monitoring program was conducted by Integrated Sustainability (to fulfill the objectives outlined on page 55 of the Alberta Energy-approved MMV Plan (Enhance 2019) with revisions as discussed in Section 1.3. The program consisted of two soil gas sampling campaigns during the summer (Q2) and fall (Q3) periods.

The overall purpose of the program was to continue defining the baseline conditions for soil gases in the Project area, identify any anomalies or departures from expected baseline conditions, and investigate the source and cause of detected anomalies using the comprehensive database of gas composition and carbon isotope data generated by Enhance since commencement of monitoring in 2019.

4.2 Monitoring Infrastructure

The soil gas probe (SGP) network consists of one or more sampling probes installed at the surface location of hydrocarbon production wells located the MMV area. The network includes:

- Thirty-two (32) existing locations.
- Eighteen (18) new locations added at the start of the summer 2021 sampling program.
- One (1) location added to the fall 2022 sampling program.

The location of the SGP locations are shown in Figure 4. The SGP network now extends across the entire Project area and is providing understanding of the spatial variability in values that can be expected.

4.3 Monitoring Activities

4.3.1 Soil Gases

Two soil gas sampling events occurred during the following months:

- Summer sampling was conducted in late-June
- Fall sampling was conducted in late-September

During both events, samples were collected from existing soil gas probes where possible, and atmospheric and blind-duplicate samples were collected for quality assurance/quality control purposes. Table E summarized the number of soil gas sample collected in 2022.

Some additional soil gas samples were collected at locations with elevated CH_4 concentrations, as determined through historic data or in-situ field monitoring results, to further investigate the source and cause of those detections. Sample locations are included in the analytical schedule for soil gas samples included in Appendix 2.

Table E. Soil Gas Samples Collected

	Summer 2022 Sampling Event		Fall 2022 Sampling Event	
Types	Planned	Completed	Planned	Completed
Existing Soil Gas Probes	38	34	39	38
New Soil Gas Probes	0	0	1*	1*
Blind-duplicate Samples	4	4	5	5
Atmospheric Samples	4	4	4	4
Total Samples	**46**	**52**	**49**	**48**

Note: * indicates the installation of additional soil gas probe

The soil gas sampling program consisted of the following activities:

- Soil Gas Probe Sampling
- Atmospheric Gas Sampling
- Installation of an additional Soil Gas Probe and Sampling

Soil gas sampling results are included in the following table:

- Table 5 - Soil Gas Analytical Results: Menthane Isotope Abundance

Activities conducted followed Integrated Sustainability's Standard Operating Procedures (SOP) included in Appendix 2 and are summarized in the following sub-sections. Additional details relating to the lithology encountered during the soil gas probe installation by Integrated Sustainability is provided in Appendix 4.

4.3.2 Atmospheric gases

Four atmospheric gas samples were collected during each sampling program to provide information on ambient atmospheric conditions. The atmospheric samples were collected over eight hours near a SGP on the same lease area and were subject to a similar suite of analysis. Samples were collected from the following locations:

- 11-35-39-24 W4
- 12-25-39-24 W4
- 06-28-40-24 W4
- 06-08-41-24 W4

4.4 Data Evaluation

Under natural and normal conditions, soil CO_2 is sourced from the biological weathering and oxidation of organic carbon associated with residual plant matter or other sources of organic carbon in the soil (e.g. coal). When present, soil microbes oxidize organic matter converting it into CO_2 and water via the following reaction:

$$CH_2O + O_2 \rightarrow CO_2 + H_2O$$

As a result, soil gas CO2 concentrations can become significantly elevated compared to atmospheric values measured in the study area (median = 412 ppmv). As noted in Table F, the range of CO_2 measured during the 2022 monitoring program ranged from 2,070 to 85,400 ppmv (median = 17,100 ppmv).

Methane values, on the other hand, tend not to be very high in the soil environment unless the appropriate conditions occur. Atmospheric values measured in the study area since commissioning of the MMV monitoring program have been on the order of 1.8 ppmv. When conditions are significantly anaerobic CO_2 can be reduced to CH_4 by soil microbes. This typically occurs in highly reducing environments, like organic-rich wetland areas. The following reactions describe the transformations:

$$CH_4 + 2O_2 \rightarrow CO_2 + 2H_2O$$

$$CH_4 + 2H_2O \rightarrow CO_2 + 4H_2$$

Methane that is present in the soil can also oxidize back to CO_2 resulting in changes in its chemical composition.

Isotopes of carbon are quite useful in determining the source of soil gas CO_2 and CH_4, much like the production gases and groundwater gases. Typical $\delta^{13}C_{CO2}$ values for the study area are expected to be on the order of -23‰ given the type of vegetation in Alberta (Clark and Fritz 1997). In comparison, measured $\delta^{13}C_{CO2}$ values in the local atmosphere yielded a median value of -8.4‰, consistent with the global atmospheric average of around -8.2‰ (NOAA, Global Monitoring Laboratory 2022).

When soil moisture is present some of the CO_2 will react with the water to produce carbonate (CO_3^{2-}) and bicarbonate (HCO_3^-) ions, depending on the prevailing pH conditions. When this occurs $\delta^{13}C_{DIC}$ values can be expected to be around -14‰, and about a 9‰ enrichment from the source carbon (Clark and Fritz 1997).

Carbon-14 is another helpful isotope to decipher the source of soil gas CO_2 values. Measurements are often expressed as a fraction from 1 to 0, with atmospheric F14C values on the order of 1.000. The median atmospheric value measured to date in the study has been 1.003. Deeper sources of CO_2, on the other had, will tend to have very low to immeasurable F14C values because of the radioactive decay process. Given the half-life of Carbon-14 (5,730 years) the method is useful for age-dating samples that are less than 40,000 years. As such older sources of CO_2, like deeper hydrocarbon gases emanating from petroleum reservoirs or coal layers, will tend to have F14C values that are below laboratory detection levels. Values measured in Leduc, Nisku, Mannville, and CBM samples submitted by Enhance thus far have generally been below laboratory detection levels (<0.002), or radioactively “dead”.

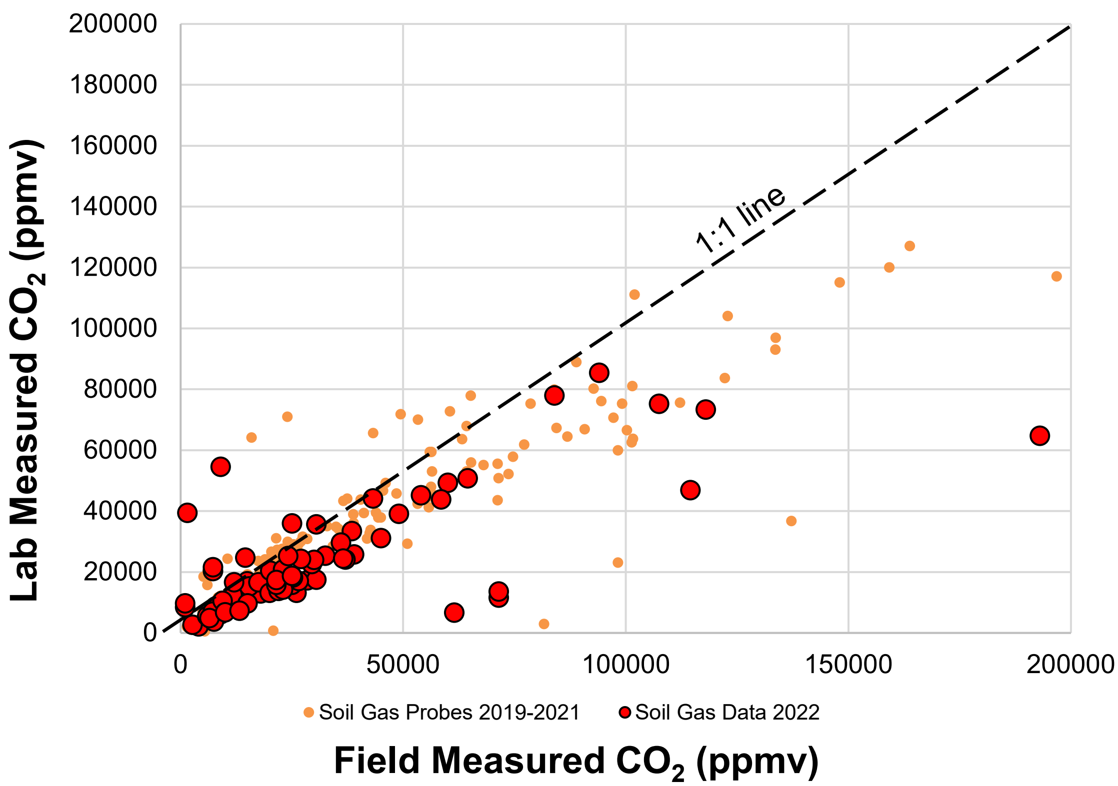


Figure E. Comparison of Field-Measured Versus Lab-Measured CO_2.

As part of the MMV monitoring protocol, samples of soil gases are measured both in the field and in the laboratory. These field measurements are used to guide the program and facilitate any refinements that may help with post-sampling assessment activities. Figure E shows a comparison between the field- and laboratory-measured CO_2 values, in relation to the 1:1 line. The comparison is reasonable, for the most part, with field-measured CO_2 tending to read higher than laboratory measurements, particularly at the more elevated concentrations.

Despite the departure between field- and lab-measured CO_2 values, laboratory measured values of all parameters assessment have been relied on through this report as they have been developed by experienced, certified and/or accredited laboratories. A summary of soil gas composition variability and isotopic character, as measured in 2022, is provided in Table F. The range of values, as well as the median and 95th percentile values, have been provided for context.

Table F. Summary of Soil Gas and Atmospheric Gas Composition and Isotopic Measurements for 2022 Collected Data

Parameter	Range	Median	95th Percentile
Soil gases			
Lab CO_2 (ppmv)	2,070 to 85,400	17,100	65,130
Lab CH_4 (ppmv)	<1 to 23,100	1.0	16.3
Lab C_2H_6 (ppmv)	<5 to 300	<50	<50
$\delta^{13}C_{CO2}$ (‰)	-25.6 to -10.8	-20.7	-17.6
$\delta^{13}C_{CH4}$ (‰)	-51.3 to -44.2	-51.3	-44.9
$\delta^{13}C_{C2H6}$ (‰)	-30.6 to -29.4	-30.1	-29.4
$F14C_{CO2}$	0.24 to 0.96	0.73	0.94
Atmospheric gases			
Lab CO_2 (ppmv)	361 to 407	377	407
Lab CH_4 (ppmv)	2 to 4	2	3.7
$\delta^{13}C_{CO2}$ (‰)	-12.3 to -6.9	-8.4	-7.1
$\delta^{13}C_{CH4}$ (‰)	Insufficient CH_4		
F14C	1.002 to 1.005	1.003	1.004

The spatial distribution of soil gas parameter values, both in the spring/summer (green symbols) and fall (red symbols) seasons is provided in Figures 5 to 8. Since commissioning of the MMV program it has been discovered that a seasonal trend in CO_2

values occurs in the study area, with higher values typically occurring in the summer months and lower values occurring in the fall. This is consistent with more vigorous microbial respiration processes occurring during the active growing season. As such, all soil gas CO_2 measurements were found to be within the expected range of natural variability.

As for soil gas CH_4, only two locations yielded concentrations well in excess of atmospheric values, those being 12-25 and 14-23. The 12-25 location has historically had elevated CH_4 values, and those recoded during 2022 are no different with the range being 9,780 to 23,100 ppmv. The suspected source is a nearby gas well. As for 14-23, this location has similarly yielded elevated CH_4 values in the past, but at much less concentrations compared to 12-25 (i.e. 11 to 21 ppmv for breathing air analysis). Unlike the 12-25 location, the detection of CH_4 at the 14-23 location has no obvious source associated with it.

Concentrations of CO_2 and CH_4 measured during the 2022 sampling programs are plotted in Figure F, along with other possible source gases responsible for the elevated values. The two identified locations have been noted.

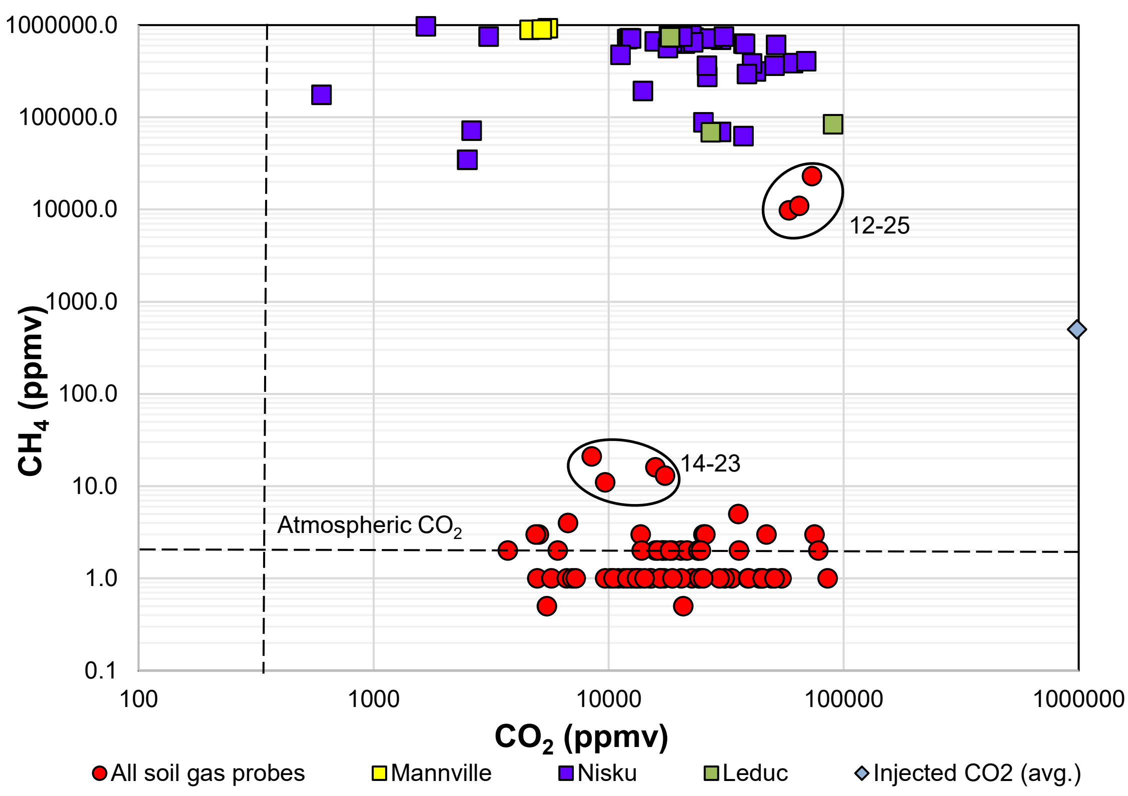


Figure F. Soil Gas Measurements for CO_2 and CH_4 Versus Other Gas Sources.

Figure G shows a graph of CO_2 versus $\delta^{13}C_{CO2}$ values for the soil gas samples collected in 2022 plus Geosphere gas samples collected as part of the program. Both the 12-25 and 14-23 locations have been highlighted in different coloured symbols for reference. What's most evident is that none of the soil gas samples exhibit $\delta^{13}C_{CO2}$ values consistent with either a deeper hydrocarbon source, and more importantly the injected CO_2. One exception is the 16-09 location, which is identified with a label in that figure.

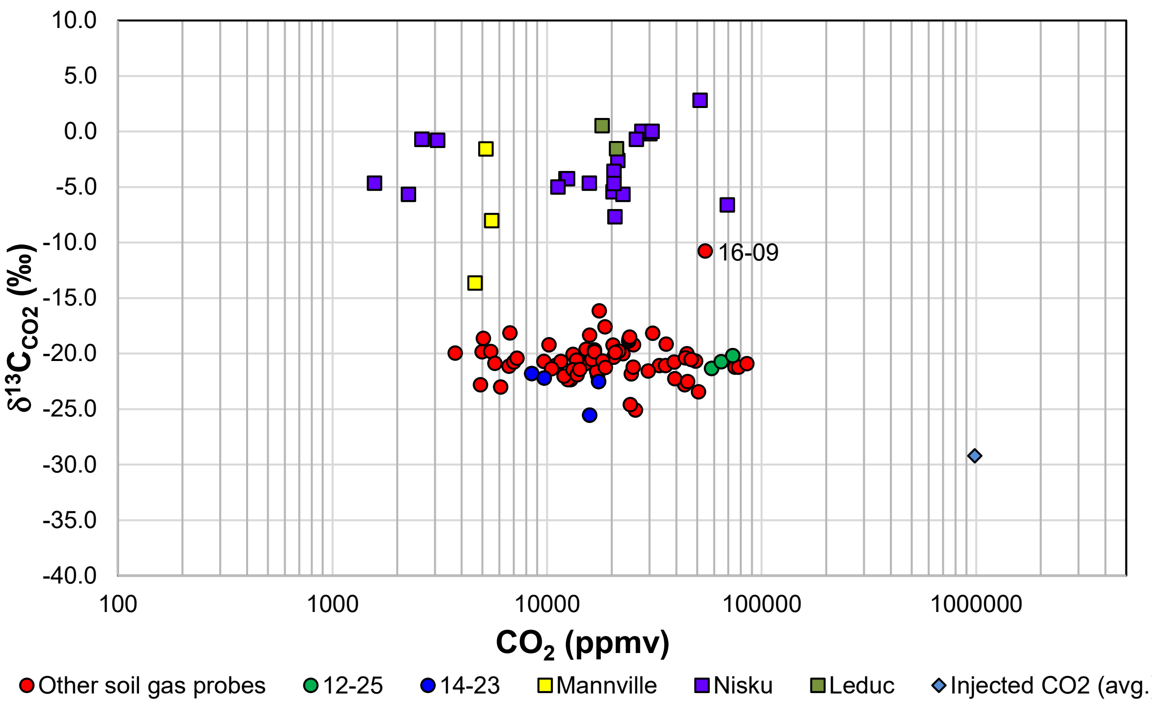


Figure G. Comparison of CO_2 Concentrations and $\delta^{13}C_{CO2}$ for Soil Gases and Various Other Gas Samples.

There are a number of mechanisms that can lead to anomalous $\delta^{13}C_{CO2}$ values. These include:

- Reduction of plant-derived CO_2 to methane by microbial processes
- CO_2 reaction with soil water to form bicarbonate and/or carbonate ions
- Mixing of natural soil gases with isotopically heavier CO_2 migrating up from deeper bedrock formations
- The upward migration of CO_2 from coal deposits or degassing of coal fragments incorporated in surficial deposits

It is important to note that the 16-09 location did not yield a CH_4 value greater than baseline values, and certainly not anywhere close to the injected CO_2 – a clear indication that some other source or mechanism is responsible. In fact, none of the soil gas monitoring locations indicate $\delta^{13}C_{CO2}$ values close to the injected CO_2 further supporting containment of that gas in the Leduc Formation.

Figure H shows the relationship between $F14C_{CO2}$ and $\delta^{13}C_{CO2}$ values. Once again the soil gas measurements for the 12-25 and 14-23 locations have been highlighted. Also highlighted is the 16-09 location, previously identified, and one other location that stands out from the rest of the measurements (i.e. 05-36).

It is evident that the majority of soil measurement in 2022 yield $F14C_{CO2}$ and $\delta^{13}C_{CO2}$ value in the range consistent with expected baseline condition. The 12-25 and 14-23 location do, however, exhibit much lower $F14C_{CO2}$ values (i.e. <0.5) indicating an influence from an older source of CO_2. The some goes for the 05-36 location, but not the 16-09 location. Regardless of this discovery, the lower $F14C_{CO2}$ values at 12-25, 14-23 and 05-36 do not align with the deeper sources gases also plotted (including the injected CO_2), and neither do the $\delta^{13}C_{CO2}$ values. As such, a different source or mechanism is influencing the soil gases at those three locations.

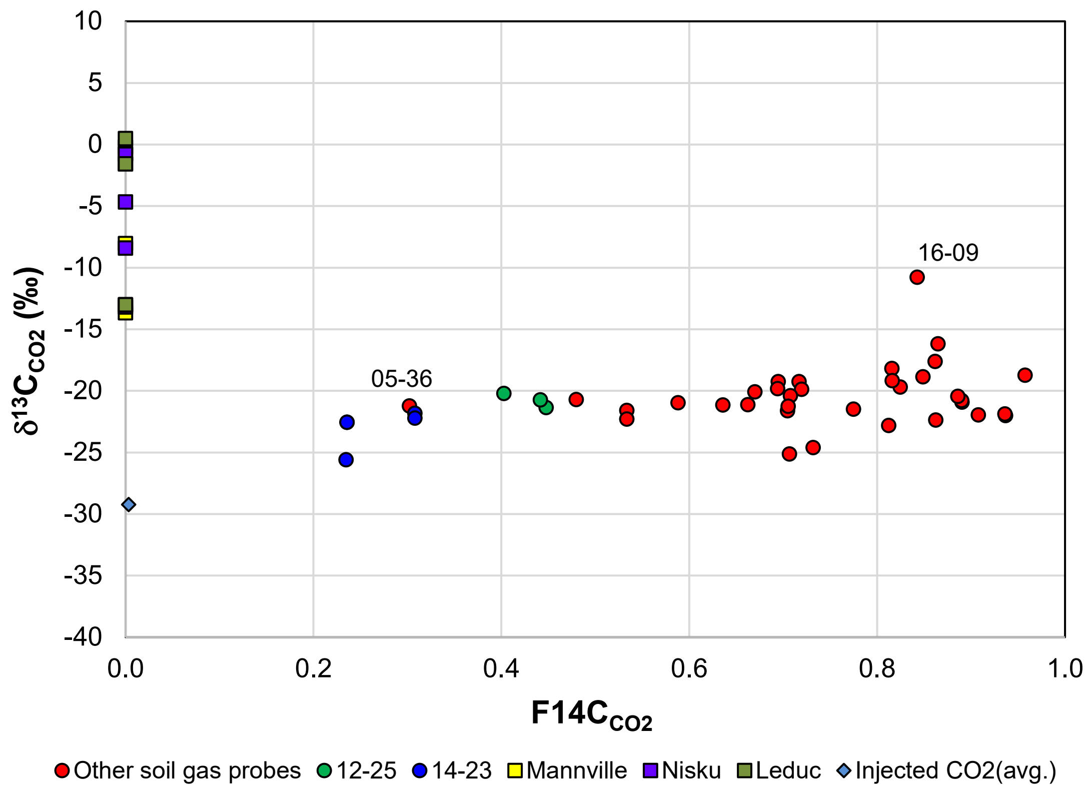


Figure H. Comparison of $F14C_{CO2}$ and $\delta^{13}C_{CO2}$ for Soil Gases and Other Potential Sources.

It is clear that most of the soil gas samples exhibit $F14C_{CO2}$ fraction greater than 0.6. Those with lower values are either being influenced from a deeper, older source of gas, like the

Mannville, or from coal. Given the results described in previous section it appears that both influences may be occurring.

Assessment of the isotopic composition of the ethane fraction in hydrocarbon gases (i.e. $\delta^{13}C_{C2H6}$) has proven helpful in attributing sources related to differing formations. For example, $\delta^{13}C_{C2H6}$ values for gases originating from deeper Mannville formations have been found to be less isotopically negative than gases originating from shallower Colorado group formations (e.g. -30‰ versus -40‰). When compared to $\delta^{13}C_{CH4}$ measurements this can also help identify likely sources.

Figure I provides a comparison of differing source gases and the 12-25 location with measurable C_2H_6 fraction with measured CH_4 values. Based on this assessment the likely source of CH_4 values at the 12-25 location is the deeper Mannville formations.

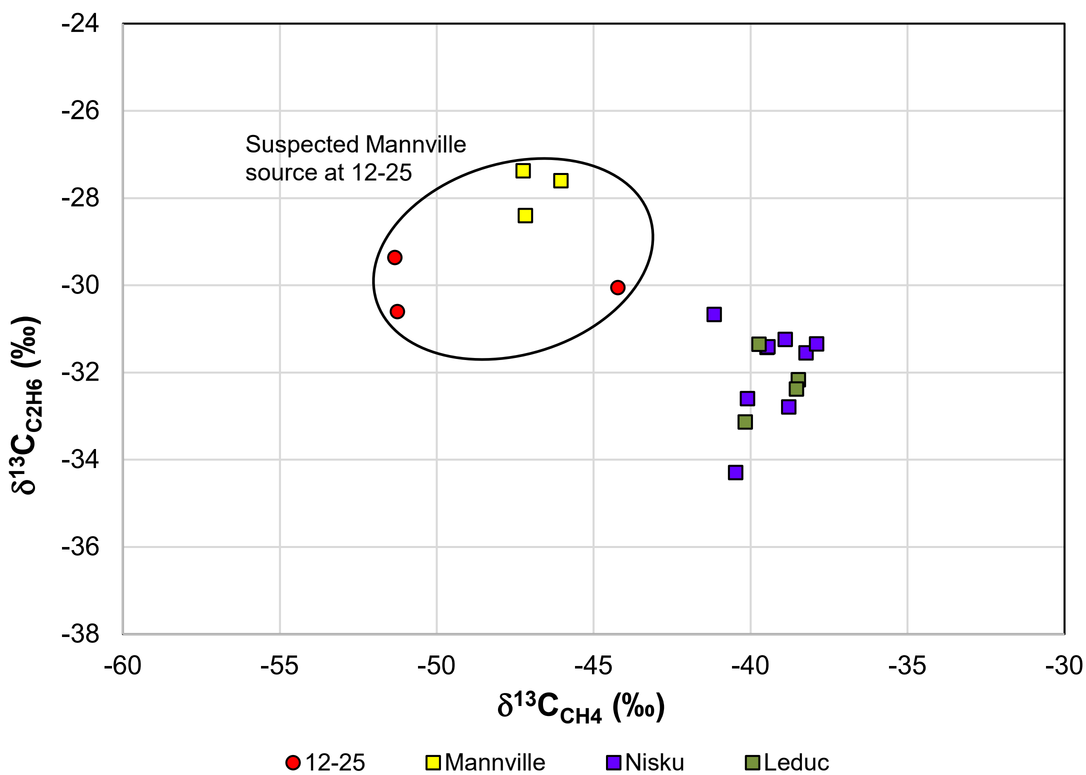


Figure I. Comparison of $\delta^{13}C_{CH4}$ and $\delta^{13}C_{C2H6}$ to determine the source of anomalous CH_4 readings at the 12-25 location.

4.5 Data trends

Now that a significant amount of baseline data has been collected for this MMV program a review of trends in soil gas results can be conducted. Figures 1 to 5 in Appendix 3 show four "data" assessment areas and locations of respective the SGPs. Temporal trends charts for the SGPs in each data area are also provided in Figures 13 to 16 of Appendix 3 relating to CO_2, CH_4, $\delta^{13}C_{CO2}$ and $F14C_{CO2}$. Also included are atmospheric values and lines framing the range of baseline conditions (based on a 95% confidence interval of the respective datasets). The region has been separated into four areas (i.e. North 1, South Data, North 2, and North 3) to make the graphs more legible and decipherable.

Trends statistics have also been calculated to enhance the data evaluation process. The Mann-Kendall (Mann 1945; Kendall 1975) and Theil-Sen's slope estimator (Sen 1968; Theil 1950) methods have been used to identify statistically-significant trends and their magnitude of change. Tables G to I summarizes the results.

Table G. Filtered CO_2 Trend Results, Probability > 95% and Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Probability	Slope (ppmv/year)	Normalized Slope (%/year)
11-26	17	-68	0.99	-33946	-179
04-01	11	-31	0.99	-30015	-51
16-16	6	13	0.98	30002	102
06-08	10	-26	0.98	-66387	-113
12-21	6	12	0.98	20405	100
02-23	7	-15	0.98	-20337	-78
14-28	6	11	0.96	7972	49
07-02	11	-23	0.95	-14615	-42
11-35	10	-19	0.95	-11089	-48

Table H. Filtered CH_4 Trend Results, Probability > 95% and Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Probability	Slope (ppmv/year)	Normalized Slope (%/year)
04-01	12	32	0.98	0.3	58
12-28	6	-12	0.98	-501.7	-144246
02-05	5	-9	0.97	-512.1	-136608

Location	Count	Mann-Kendall S	Probability	Slope (ppmv/year)	Normalized Slope (%/year)
05-36	6	11	0.96	0.4	41
16-03	6	11	0.96	0.2	80
16-16	4	-6	0.95	-1.1	-103
10-32	6	-10	0.95	-511.5	-1091869

Table I. Filtered $\delta^{13}C_{CO2}$ Trend Results, Probability > 95% And Normalized Slope > ± 10%/Year

Location	Count	Mann-Kendall S	Probability	Slope (‰/year)	Normalized Slope (%/year)
12-25	18	53	0.97	3.0	-31

No entries for Filtered F14C_{CO2} Trend Results, Probability > 95% And Normalized Slope > ± 10%/Year

Most of the soil gas measurements taken since commissioning of the MMV program have remained within the defined baseline conditions, with the exception of a few locations showing concentrations of mostly CO_2 and CH_4 occasionally falling outside of established ranges. This applies mainly to 14-23, 11-26, and 12-25 in the North 1 data area and 04-01 in the South data area. Future monitoring will refine understanding of the range of natural variability and temporal changes in soil gas composition and isotopic character. So far, however, there has been no evidence of a sustained change in conditions indicating a possible influence from a CO_2 containment breach. This finding is consistent with monitoring results for the Geosphere and Hydrosphere indicating that the injected CO_2 is intact.

5 SUMMARY AND CONCLUSIONS

The 2022 MMV monitoring program included the monitoring of various bedrock formations, local water wells, and soil gas probe (SGP) locations.

The analysis performed included gas composition (either as mole % or ppmv) including O_2, N_2, CO_2, CH_4, and other gases, stable isotopes for carbon ($\delta^{13}C_{CO2}$, $\delta^{13}C_{CH4}$, and $\delta^{13}C_{C2H6}$, among others), stable sulphur ($\delta^{34}S$ of $H_2S_{(g)}$ and SO_4 in water), and radiogenic carbon, as a fraction of modern carbon-14 (F14C_{CO2}). The following conclusions are drawn based on the data collected:

Geosphere Monitoring:

- Lack of increasing CO_2 concentrations in the overlying Nisku Formation (and other shallower bedrock intervals) indicates that the Ireton Formation caprock is structurally intact and keeping the injected CO_2 in place.
- Evidence provided by other bedrock monitoring wells supports the conclusion that that CO_2 being injected into the Leduc Formation remains secured in that interval.
- Compositional and isotopic fingerprinting of the various bedrock formation gases has provided a useful database for forensic investigation of any anomalous groundwater and soil gas detections.

Hydrosphere Monitoring:

- Groundwater sampled from the domestic wells around the Clive EOR Project is typical of bedrock waters in Alberta, with low mineralization, alkaline conditions, and generally elevated hardness.
- No major anomalies were noted for parameters currently listed in the Guidelines for Canadian Drinking Water Quality (2022). Notable exceptions include some instances of elevated iron and manganese, likely due to local well conditions (i.e. reducing).
- Many of the water wells have detectable concentrations of iron-reducing, sulphate-reducing, and slime-forming bacteria. This is typical for older wells that have not been maintained by disinfection (e.g. shock chlorination).
- Dissolved gases were identified in nine samples collected in 2022, with CO_2 values as high as 22,700 ppmv and CH_4 values up to 44,100 ppmv. No detections for C_2H_6 or H_2S were made.
- The highest CH_4 values was measured in Land Owner 24's well, which also had levels of SO_4, Fe, and Mn below detection and a confirmed presence of sulphate-reducing bacteria. These observations, along with a $\delta^{13}C_{CO2}$ value of -19‰ and $\delta^{13}C_{CH4}$ of -84‰, suggest that methanogenic conditions in that well are responsible.
- $\delta^{13}C_{DIC}$ values measured in the samples collected are consistent with natural mineralization of soil organic carbon followed by conversion of the dissolved CO_2(g) to carbonate-based ions (HCO_3^- and CO_3^{2-}). There is no evidence to support a deeper hydrocarbon influence.
- Assessment of the data collected since 2019 indicates that a number of trends in measured parameters are occurring. This, however, is only happening in a small number of wells (4 or less), with none of the parameters linking back to the CO_2 injection activities. These trends are therefore believed to be an artifact of the wells themselves.

Biosphere Monitoring:

- All of SGP monitoring locations assessed in 2022, with the exception of two (12-25 and 14-23), exhibit soil gas CO_2 values within the established baseline for the area.

- Seasonal variation in soil gas CO_2 levels is evident, and expected, with higher values occurring during the spring/summer months. Increased soil respiration processes during the active growing season are the likely reason.
- The source of anomalous CO_2 and CH_4 values at the 12-25 locations is still believed to be linked to gas originating from the Lower Mannville formations. This is based on the gas composition and isotopic evidence gathered to date.
- The source of anomalous CH_4 at the 14-23 locations is less clear, but from a previous $\delta^{13}C_{CH4}$ measurement (-69.4‰) it is more aligned with a biogenic source or gas originating from local coal as opposed to a deeper hydrocarbon source.
- Assessment of data shows that most SGP locations are exhibiting naturally fluctuating conditions. Of the locations identified with statistically-significant trends, most are showing declining CO_2 levels, and a small number (three) are exhibiting slight increases in CH_4 levels (<0.5 ppmv/year). With respect to isotopes, an increasing $\delta^{13}C_{CO2}$ trend is evident at the 12-25 location (3‰/year), while no trends are noted for $F14C_{CO2}$.

6 RECOMMENDATIONS

The 2022 field program marks the fourth year of soil gas and groundwater sampling in support of Enhance's Clive MMV plan. Based on results obtained to date the following suggestions are provided to ensure timely detection of any anomalies that might be linked to CO_2 injection:

- Future expansions of the program should target an average of two to three baseline soil gas sampling locations per section of MMV area added. This will provide the necessary spatial assessment to capture the range of natural variability in gases and help identify any anomalies that may occur in the future.
- Continued sampling for dissolved gases and their related carbon isotopes in water wells around the project is recommended to provide the necessary information to decouple project-related effects from natural conditions.
- Detections of H_2S during the soil gas or groundwater sampling programs should be confirmed with stable sulphur isotopes to determine the possible source and cause. This will require a suitable concentration of free phase H_2S gas. If the H_2S concentrations are too low to facilitate a suitable sample collection, assessment of the shallow groundwater for $\delta^{34}S_{SO4}$ would help resolve these detections.
- Continued analysis of gas samples from hydrocarbon production wells in the MMV area for gas composition and isotopic character would be beneficial to frame the range of variability and assist with source attribution efforts (when, or if, needed).
- Soil gas sampling programs are recommended to switch to the GEM5000 or similar for the collection of field measured soil gas concentrations. This is due of the frequency of malfunction of the Los Gatos Ultraportable Greenhouse Gas Analyzer (UGGA) requiring repair service during the 2019, 2021 and 2022 field programs. During the

periods of equipment malfunction, a suitable backup has not been available. The GEM5000 was used successful during the 2021 and 2022 field programs providing an accurate identification of locations with increased methane concentrations. The range of methane analysis for the instruments is as follows:

– **GEM5000**: 0% to 100% by volume and measures methane concentrations as low as 0.1%. Accuracy is +/-0.3% within the 0%-5% range. That means it can measure from approximately 1000 ppm to 1,000,000 ppm and the accuracy is +/- 3000 ppm below 50,000 ppm.
– **UGGA:** 0 to 500 ppm by volume and measures methane concentrations as low as 0.001 ppm.

While range of measurement for methane is reduced when using the GEM5000 the laboratory measurements are unchanged with a detection limit of 1 ppm and represent the primary method of data analysis.

7 CLOSURE

Integrated Sustainability would like to thank Enhance Energy Inc. for the opportunity to support the Clive CO_2 injection MMV program. We trust that this report meets your needs and expectations. If you have any questions, please contact the undersigned at your convenience.

Sincerely,

Integrated Sustainability

PROFESSIONAL GEOLOGIST JON W. FENNELL ALBERTA
2023-03-24
ID 44653

Jon Fennell, M.Sc., Ph.D., P.Geol.

Principal Hydrogeologist & Geochemist

PROFESSIONAL GEOSCIENTIST IAN G. GRANT ALBERTA
APEGA ID# 82130 2023-03-23

Ian Grant, M.Sc., P.Geo

Senior Hydrogeologist

PERMIT TO PRACTICE

INTEGRATED SUSTAINABILITY CONSULTANTS LTD.

RM SIGNATURE:

RM APEGA ID#: 82130

DATE: 23 March 2023

PERMIT NUMBER: P11259

The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

8 REFERENCES

Cheung K., Klassen P., Mayer B., Goodarzi F., and Aravena R. (2010). Major ion and isotope geochemistry of fluids and gases from coalbed methane and shallow groundwater wells in Alberta, Canada. Applied Geochemistry, 25, p. 1307 – 1329.

Clark, I. and Fritz, P., 1997. Environmental Isotopes in Hydrogeology. CRC Press, Taylor & Francis Group, ISBN 1-56670-249-6, 343 pp.

Enhance Energy Inc., 2019. Clive Leduc Field Monitoring, Measurement & Verification Plan. Prepared for the Alberta Energy Regulator, 109 pp.

Fennell J. and Bentley L.R., 1998. Distribution of sulphate and organic carbon in a prairie till setting: Natural versus industrial sources. Water Resources Research, Vol. 34, No. 7, pp. 1781-1794.

Global Monitoring Laboratory. 2022. The Data: What 13C Tells Us. The Global View. Retrieved from: https://gml.noaa.gov/ccgg/isotopes/c13tellsus.html

Golder Associated Ltd., 2021a. 2019/2020 Clive Soil Gas Baseline Report: Enhance Clive CO2 Enhanced Oil Recovery Project. Submitted to Enhance Energy Inc., March 12, 2021, 65 pp.

Golder Associated Ltd., 2021b. 2019/2020 Groundwater Baseline Report: Enhance Clive CO2 Enhanced Oil Recovery Project. Submitted to Enhance Energy Inc., March 23, 2021, 23 pp.

Jones D., Gordon S., Mayer B., Hitz M., and Blyth A., 2009. The Free Gas Sampling Standard Operating Procedure for Baseline Water Well Testing. Prepared for Alberta Research Council Inc. for Alberta Environment and Sustainable Resource Development, March 31, 2009

Kendall M.G. (1975). Rank Correlation Methods 4th ed. Charles Griffin, London.

Mann H.B. (1945). Nonparametric tests against trend. Econometrica 13 pp. 245-259.

Muehlenbachs K. and Rowe, D., 1999. Isotopic fingerprints of shallow gases in the Western Canadian sedimentary basin: tools for remediation of leaky heavy oil wells. Organic Geochemistry, 30, pp. 861-871.

Sen P.K. (1968). Estimates of the regression coefficient based on Kendall's tau. J. Amer. Statist. Assoc., 63 pp. 1379-1389.

Theil H. (1950). A rank-invariant method of linear and polynomial regression analysis. Proc. Koninalijke Nederlandse Akademie Van Wetenschatpen A53 part 3, pp. 1397-1412.

INTEGRATED SUSTAINABILITY

Tables

Table 1A: Field Measured Parameters

Enhance Energy
CP22-EEI-01-00

Date: February 9, 2022
Rev: B

Landowner ID	Date (dd-mmm-yy)	pH (pH Units)	EC (uS/cm)	DO (%)	Temperature (deg c)
Landowner 2	7-Oct-21	7.55	513	29.7	9.47
Landowner 2	15-Jun-22	6.7	517	43.5	13.7
Landowner 2	20-Sep-22	7.79	540.35	117.58	11.4
Landowner 1	7-Oct-21	7.80	454	N/A	9.62
Landowner 1	17-Jun-22	7.56	476	25.7	11.65
Landowner 1	19-Sep-22	7.72	439	92.16	11.37
Landowner 25	6-Oct-21	7.55	448	69.4	7.6
Landowner 33	16-Jun-21	6.82	532	78.1	7.69
Landowner 33	7-Oct-21	N/A	492	N/A	7.78
Landowner 33	15-Jun-22	7.87	359	80.1	11.4
Landowner 33	21-Sep-22	7.8	592.15	117.53	13.9
Landowner 33	15-Jun-22	7.60	522	102.2	10.65
Landowner 4	8-Oct-21	7.58	601	53.5	8.95
Landowner 4	18-Jun-22	7.37	647	33.4	11.41
Landowner 4	19-Sep-22	7.19	662.89	115.24	13.94
Landowner 31	8-Oct-21	8.03	660	30.1	8.77
Landowner 31	17-Jun-22	7.53	703	125	13.4
Landowner 31	19-Sep-22	7.41	641.64	46.24	11.42
Landowner 31	19-Sep-22	7.41	641.64	46.24	11.42
Landowner 24	7-Oct-21	7.74	321	88.1	7.9
Landowner 24	17-Jun-22	9.06	938	53	7.5
Landowner 24	22-Sep-22	9.82	400.12	53	14.49
UL1 - Development	14-Jun-21	7.43	646	41.8	7.43
UL1 - Development	5-Oct-21	7.44	455	24.9	7.68
UL1 - Development	26-Jun-22	8.13	502	27.2	10.85
UL2 - Development	14-Jun-21	7.21	685	34.1	10.42
UL2 - Development	5-Oct-21	7.82	446	138.1	7.68
UL2 - Development	26-Jun-22	8.31	503	25	13.12
UL3 - Development	14-Jun-21	10.02	1230	26.9	12.42
UL3 - Development	5-Oct-21	8.83	732	110.5	6.8
UL3 - Development	26-Jun-22	8.81	835	160	10.43

Table 1A: Field Measured Parameters

Enhance Energy
CP22-EEI-01-00

Date: February 9, 2022
Rev: B

Landowner ID	Date (dd-mmm-yy)	pH pH Units	EC uS/cm	DO %	Temperature deg c
Landowner 19	16-Jun-21	7.11	539	52.4	7.86
Landowner 19	8-Oct-21	7.49	275	111.2	8.4
Landowner 29	23-Jun-22	7.71	453	70.4	8.99
Landowner 29	24-Jun-22	7.71	453	70.4	8.99
Landowner 29	24-Sep-22	7.90	603	40.60	12.48
273157 (Enhance Facility Well)	14-Jun-21	8.11	982	16.9	16.91
273157 (Enhance Facility Well)	5-Oct-21	8.30	378	250.3	12.64
273157 (Enhance Facility Well)	14-Jun-22	8.18	642	38.5	9
273157 (Enhance Facility Well)	19-Sep-22	8.17	761	71.39	14.75
Landowner 14	6-Oct-21	7.43	514	20	8.52
Landowner 14	18-Jun-22	7.5	490	87.8	7.81
Landowner 14	21-Sep-22	7.72	567	96.73	10.65
Landowner 26	8-Oct-21	7.41	767	29.7	7.07
Landowner 26	23-Jun-22	7.71	453	70.4	8.99
Landowner 26	21-Sep-22	7.47	864	32.64	9.37
Landowner 7	16-Oct-21	7.63	456	24.3	6.8
Landowner 7	16-Jun-22	7.65	258	47.6	9.5
Landowner 7	20-Sep-22	7.55	544	105.92	12.74
Landowner 11	6-Oct-21	7.50	577	33.6	9.59
Landowner 11	15-Jun-22	7.22	502	127	12.33
Landowner 11	20-Sep-22	7.82	607	98.69	11.3
Landowner 16	6-Oct-21	8.13	624	33.5	8.34
Landowner 16	16-Jun-22	8.57	651	172.6	10.82
Landowner 16	20-Sep-22	8.22	679.66	35.2	11.37
Landowner 9	16-Jun-21	7.11	264	45.6	8.91
Landowner 9	6-Oct-21	7.48	504	84.2	6.6
Landowner 9	15-Jun-22	7.76	564	96.6	11.5
Landowner 9	19-Sep-22	7.92	546.35	48.99	11.7
Landowner 3	6-Oct-21	8.09	674	174.2	7.24
Landowner 3	17-Jun-22	7.5	828	53	9.47
Landowner 3	21-Sep-22	7.61	878.29	62.22	12.29

INTEGRATED SUSTAINABILITY

Table 1A: Field Measured Parameters

Enhance Energy
CP22-EEI-01-00

Date: February 9, 2022
Rev: B

Landowner ID	Date (dd-mmm-yy)	pH pH Units	EC uS/cm	DO %	Temperature deg c
Landowner 3	6-Oct-21	7.99	756	44.3	11.4
Landowner 20	14-Oct-21	8.00	328	93.9	6.38
Landowner 20	23-Jun-22	7.94	699	101.3	10.16
Landowner 20	21-Sep-22	8.08	767	63.36	13.48
Landowner 28	8-Oct-21	7.67	429	99.2	8.43
Landowner 28	15-Jun-22	8.18	474	44.8	13.27
Landowner 28	19-Sep-22	7.62	459	119.3	12.08
Landowner 8	8-Oct-21	8.85	527	20	9.37
Landowner 8	15-Jun-22	8.53	1015	-	9
Landowner 8	21-Sep-22	8.71	1153	32.19	12.62
Landowner 30	7-Oct-21	7.56	404	4.11	5.32
Landowner 30	18-Jun-22	7.22	533	56	12.56
Landowner 30	19-Sep-22	7.50	458	85.23	10.01
Landowner 21	14-Oct-21	8.84	747	10.1	7.42
Landowner 21	16-Jun-22	8.88	800	130.1	14.76
Landowner 21	20-Sep-22	8.79	798	37.25	10.86
Landowner 13	17-Oct-21	7.77	682	33.3	7.15
Landowner 13	16-Jun-22	7.74	480	94.2	13.07
Landowner 13	21-Sep-22	7.88	787	44.48	11.53
Landowner 23	6-Oct-21	8.65	919	16	11.7
Landowner 23	16-Jun-22	8.63	913	20.67	12.02
Landowner 23	20-Sep-22	8.75	938.57	37.41	11.01
Landowner 20	6-Oct-21	8.78	750	25.3	10.11
Landowner 20	16-Jun-22	8.84	-	11.27	19.3
Landowner 20	23-Sep-22	8.94	828.22	119.58	12.94
Landowner 10	8-Oct-21	8.40	732	114.2	10.76
Landowner 10	18-Jun-22	7.78	681	52.4	10.57
Landowner 10	20-Sep-22	8.32	725	29.68	10.77
Landowner 5	14-Oct-21	7.70	1057	15.1	7.62
Landowner 5	17-Jun-22	7.6	7610	33.2	10.81

Table 1A: Field Measured Parameters

Enhance Energy
CP22-EEI-01-00

Date: February 9, 2022
Rev: B

Landowner ID	Date (dd-mmm-yy)	pH pH Units	EC uS/cm	DO %	Temperature deg c
Landowner 5	22-Sep-22	8.12	774	114.34	16.09
Landowner 17	8-Oct-21	7.56	430	35.5	6.63
Landowner 17	18-Jun-22	8.1	474	10.82	9.31
Landowner 17	21-Sep-22	7.72	494	99.06	10.62
Landowner 32	7-Oct-21	7.57	648	88.5	6.95
Landowner 32	18-Jun-22	7.65	607	93	9.92
Landowner 25	14-Oct-21	7.76	336	156.3	9.77
Landowner 25	17-Jun-22	7.46	522	59.9	16.52
Landowner 25	20-Sep-22	6.69	637	112.6	13.77
Landowner 18	16-Oct-21	7.80	342	21.2	7.58
Landowner 18	15-Jun-22	7.91	363	45	9.97
Landowner 18	19-Sep-22	7.78	387	116.49	11.84
Landowner 6	17-Jun-21	6.49	748	73.6	7.68
Landowner 6	4-Oct-21	7.33	529	56.2	7.72
Landowner 6	14-Jun-22	7.32	502	44.5	7.67
Landowner 6	19-Sep-22	7.6	600.83	117.12	10.44
Landowner 22	7-Oct-21	8.93	935	N/A	11.6
Landowner 22	15-Jun-22	7.63	773	93.9	12.85
Landowner 22	20-Sep-22	9.06	769	90.56	10.64

INTEGRATED SUSTAINABILITY

Table 1B: Water Analytical Results: General, Major Ions and Nutrients

Client Name: Enhance Energy Ltd. **Project Number:** CP22-EEI-01-00 **Date:** 09-Feb-23 **Rev:** A

Landowner ID	Date	Bicarbonate	Bromide	Calculated TDS	Total Dissolved Solids (Analysed)	Carbonate	Chloride	Hydroxide	Dissolved Calcium	Dissolved Inorganic Carbon	Dissolved Iron	Dissolved Lithium	Dissolved Magnesium	Dissolved Manganese	Dissolved Phosphorus	Dissolved Potassium	Dissolved Silicon	Dissolved Sodium	Dissolved Strontium	Dissolved Tin	Fluoride	Hardness	Ion Balance	Nitrate	Nitrate-N	Nitrite	Nitrite-N	Nitrate + Nitrite (as N)	p - Alkalinity (as CaCO3)	pH	Sodium Adsorption Ratio	Sulfate	Sulfide	T - Alkalinity (as CaCO3)	Electrical Conductivity
	(dd-mmm-yy)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH Units	None	mg/L	mg/L	mg/L	uS/cm
		Routine Water Paramaters																																	
Landowner 2	8-Aug-19	426	< 0.1	449	-	< 5	6	< 5	-	78	< 0.1	0.051	34.2	< 0.005	< 0.08	-	4.63	31.4	0.719	0.0043	0.14	364	101	21.8	4.92	< 0.05	< 0.01	4.92	< 5	7.79	0.72	54	-	350	796
Landowner 2	9-Oct-19	438	< 0.1	449	470	< 5	7	< 5	-	69	< 0.1	0.045	32.5	< 0.005	< 0.08	-	5.08	31.7	0.679	0.0014	0.18	343	94	21.8	4.92	< 0.05	< 0.01	4.92	< 5	7.68	0.74	54	-	359	761
Landowner 2	7-Oct-21	424	< 0.1	465	-	< 5	5.8	< 5	-	-	< 0.1	0.043	36.3	< 0.005	< 0.08	-	5.86	36.5	0.688	< 0.0005	0.16	407	115	18.9	4.27	< 0.05	< 0.01	4.27	< 5	8.05	0.79	52.4	-	347	749
Landowner 2	7-Oct-21	418	< 0.1	449	-	< 5	5.7	< 5	-	-	< 0.1	0.045	33.3	< 0.005	< 0.08	-	5.81	33.9	0.745	< 0.0005	0.14	378	108	19.0	4.29	< 0.05	< 0.01	4.29	< 5	8.24	0.76	52.4	-	343	746
Landowner 2	15-Jun-22	420	< 0.1	430	-	< 5	5.5	< 5	84.2	-	< 0.1	0.044	31.8	< 0.005	0.19	2.5	5.23	31.0	0.790	< 0.0005	0.18	341	99	18.2	4.11	< 0.05	< 0.01	4.11	< 5	7.89	0.77	48.7	-	337	705
Landowner 2	20-Sep-22	432	< 0.1	444	-	< 5	5.6	< 5	84.8	-	< 0.1	0.051	34.4	< 0.005	0.13	2.9	5.99	33.0	0.785	< 0.0010	0.14	353	99	18.1	4.09	< 0.05	< 0.01	4.09	< 5	7.96	0.76	52.8	-	347	702
Landowner 12	8-Aug-19	380	< 0.1	361	-	< 5	10	< 5	-	82	1.1	0.036	28.7	0.426	< 0.08	-	4.55	47.6	0.53	0.0016	0.2	270	108	0.2	0.05	< 0.05	< 0.01	0.05	< 5	7.99	1.26	25	-	310	690
Landowner 12	8-Oct-19	409	< 0.1	370	370	< 5	9	< 5	-	67	1.1	0.038	26.3	0.443	< 0.08	-	4.66	46.5	0.563	0.0019	0.17	251	95	0.1	0.02	< 0.05	< 0.01	0.02	< 5	7.85	1.28	28	-	335	669
Landowner 1	7-Aug-19	360	< 0.1	368	-	< 5	7	< 5	-	84	< 0.1	0.045	29.1	0.014	< 0.08	-	4.55	38.6	0.721	< 0.0005	0.14	294	109	7.2	1.63	< 0.05	< 0.01	1.63	< 5	7.91	0.98	36	-	300	700
Landowner 1	7-Aug-19	370	< 0.1	372	-	< 5	7	< 5	-	76	< 0.1	0.045	29.1	0.014	< 0.08	-	4.56	38.3	0.719	< 0.0005	0.14	293	106	7.2	1.63	< 0.05	< 0.01	1.63	< 5	7.93	0.97	36	-	300	700
Landowner 1	9-Oct-19	413	< 0.1	393	435	< 5	8	< 5	-	66	< 0.1	0.042	26.6	0.015	< 0.08	-	4.55	37.6	0.744	0.0017	0.15	272	89	7.7	1.74	< 0.05	< 0.01	1.74	< 5	8	0.99	42	-	338	686
Landowner 1	7-Oct-21	379	< 0.1	374	-	< 5	7.8	< 5	-	-	< 0.1	0.041	29.3	0.011	-	-	5.60	37.5	0.775	< 0.0005	0.16	293	104	4.3	0.97	< 0.05	< 0.01	0.97	< 5	7.95	0.95	36.4	-	311	714
Landowner 1	17-Jun-22	302	< 0.1	333	-	8	8.9	< 5	65.3	-	< 0.1	0.045	25.6	0.008	0.16	2.9	4.68	34.7	0.696	< 0.005	0.17	268	111	4.3	0.97	< 0.05	< 0.01	0.97	6	8.40	0.92	34.4	-	260	601
Landowner 1	19-Sep-22	408	< 0.1	386	-	< 5	8.2	< 5	65.3	-	< 0.1	0.039	29.2	< 0.005	0.11	3.0	5.45	39.4	0.700	< 0.0005	0.17	283	96	4.0	0.90	< 0.05	< 0.01	0.90	< 5	8.03	1.02	36.7	-	328	623
Landowner 25	7-Aug-19	340	< 0.1	371	-	< 5	11	< 5	-	74	< 0.1	0.049	29	< 0.005	< 0.08	-	4.44	33.5	0.797	0.0011	0.06	301	109	19.7	4.45	< 0.05	< 0.01	4.45	< 5	7.93	0.84	35	-	280	680
Landowner 25	9-Oct-19	372	< 0.1	379	410	< 5	7	< 5	-	62	< 0.1	0.044	27.3	< 0.005	< 0.08	-	4.61	32.2	0.799	0.002	0.17	278	94	20	4.52	< 0.05	< 0.01	4.52	< 5	8	0.84	40	-	305	671
Landowner 25	6-Oct-21	405	< 0.1	398	-	< 5	< 1.0	< 5	-	-	0.7	0.054	28.5	0.128	< 0.08	-	6.09	58.3	1.17	< 0.0005	0.09	293	114	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.00	1.48	39.6	-	332	722
Landowner 33	7-Aug-19	380	0.3	443	-	< 5	48	< 5	-	84	< 0.1	0.041	44.1	< 0.005	< 0.08	-	4.6	40.1	0.483	0.0015	0.04	368	108	18.4	4.16	< 0.05	< 0.01	4.16	< 5	8.1	0.91	29	-	310	850
Landowner 33	8-Oct-19	419	0.3	445	460	< 5	41	< 5	-	70	< 0.1	0.044	39.8	< 0.005	< 0.08	-	4.44	38.3	0.497	0.0015	0.01	338	95	18.2	4.11	< 0.05	< 0.01	4.11	< 5	7.76	0.91	30	-	344	814
Landowner 33	8-Oct-19	436	0.2	458	455	< 5	41	< 5	-	68	< 0.1	0.044	41.7	< 0.005	< 0.08	-	4.44	39.7	0.491	0.0021	0.06	345	94	18.1	4.09	< 0.05	< 0.01	4.09	< 5	7.84	0.93	32	-	358	812
Landowner 33	16-Jun-21	352	0.2	417	-	14	31	< 5	-	93	< 0.1	-	40	< 0.005	< 0.08	-	-	40	-	-	0.05	344	109	17	3.84	< 0.05	< 0.01	3.84	11	8.51	0.94	28.3	-	305	740
Landowner 33	7-Oct-21	428	0.2	460	-	< 5	30.8	< 5	-	-	< 0.1	0.037	45.1	< 0.005	< 0.08	-	5.63	42.1	0.484	< 0.0005	0.16	390	110	18.1	4.09	< 0.05	< 0.01	4.09	< 5	8.19	0.93	28.9	-	344	790
Landowner 33	15-Jun-22	360	0.2	390	-	6	25.9	< 5	64.4	-	< 0.1	0.039	36.5	< 0.005	0.16	1.9	4.68	35.6	0.480	< 0.0005	0.14	311	102	16.8	3.80	< 0.05	< 0.01	3.80	5	8.34	0.88	25.7	-	306	744
Landowner 33	21-Sep-22	387	0.2	409	-	< 5	26.1	< 5	67.9	-	< 0.1	0.044	39.1	< 0.005	< 0.08	1.9	5.04	38.6	0.507	< 0.0005	0.09	331	105	17.7	4.00	< 0.05	< 0.01	4.00	< 5	8.18	0.92	27.5	-	312	723
Landowner 33	15-Jun-22	359	< 0.1	391	-	5	26.0	< 5	66.4	-	< 0.1	0.039	36.7	< 0.005	0.14	1.9	4.70	36.0	0.473	< 0.0005	0.11	317	105	16.8	3.80	< 0.05	< 0.01	3.80	< 5	8.33	0.88	25.7	-	303	735
Landowner 27	9-Aug-19	570	< 0.1	581	-	< 5	< 1	< 5	-	115	0.3	0.085	10.3	0.095	< 0.08	-	3.88	184	0.661	0.0023	0.08	119	96	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.25	7.34	74	< 0.02	467	1000
Landowner 27	9-Aug-19	< 5	< 0.1	< 0.6	-	< 5	< 1	< 5	-	< 1	< 0.1	< 0.001	< 0.2	< 0.005	< 0.08	-	< 0.032	< 0.6	< 0.001	< 0.0005	< 0.01	< 1	-	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	5.93	0	< 1	< 0.02	< 5	< 5
Landowner 27	9-Aug-19	< 5	< 0.2	< 0.6	-	< 5	< 1	< 5	-	< 1	< 0.1	< 0.001	< 0.2	< 0.005	< 0.08	-	< 0.032	< 0.6	< 0.001	< 0.0005	< 0.06	< 1	-	< 0.5	< 0.02	< 0.20	< 0.01	< 0.02	< 5	6.23	0	< 1	< 0.02	< 5	< 5
Landowner 27	8-Oct-19	616	< 0.1	624	645	< 5	< 1	< 5	-	116	2.4	0.087	5.9	0.182	< 0.08	-	3.93	213	0.472	0.0029	0.25	76	93	0.4	0.09	< 0.05	< 0.01	0.09	< 5	8.06	10.6	79	-	505	1060
Landowner 4	8-Aug-19	500	< 0.1	529	-	< 5	3	< 5	-	100	1.4	0.059	46.2	0.15	< 0.08	-	4.96	58.3	0.884	0.0024	0.05	407	107	1.9	0.43	< 0.05	< 0.01	0.43	< 5	7.86	1.26	85	-	410	950
Landowner 4	8-Oct-19	545	< 0.1	534	545	< 5	1	< 5	-	94	2.1	0.062	44.2	0.174	< 0.08	-	5.27	55.7	0.924	0.002	< 0.01	384	96	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.74	1.24	82	-	447	917
Landowner 4	8-Oct-21	541	< 0.1	555	-	< 5	1.6	< 5	-	-	< 0.1	0.051	49.9	0.214	-	-	6.27	60.6	0.912	< 0.0005	0.08	442	109	0.7	0.16	< 0.05	< 0.01	0.16	< 5	7.97	1.25	79.5	-	443	950
Landowner 4	18-Jun-22	553	< 0.1	525	-	< 5	2.3	< 5	79.5	-	< 0.1	0.052	41.7	0.172	0.13	2.1	5.58	51.6	0.945	< 0.0005	0.08	370	91	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.05	1.17	75.4	-	447	818
Landowner 4	19-Sep-22	553	< 0.1	537	-	< 5	1.8	< 5	80.8	-	1.1	0.049	47.4	0.182	0.10	2.1	6.56	57.7	0.922	< 0.0010	0.09	397	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.96	1.26	75.3	-	446	843
Landowner 31	8-Aug-19	397	< 0.1	523	-	46	2	< 5	-	96	0.1	0.051	35.1	0.036	< 0.08	-	2.1	148	0.108	0.003	0.07	166	99	0.4	0.09	< 0.05	< 0.01	0.09	38	8.95	5.01	85	-	402	886
Landowner 31	8-Oct-21	478	< 0.1	581	-	< 5	< 1.0	< 5	-	-	< 0.1	0.045	40.1	0.615	-	-	4.71	136.0	0.459	< 0.0005	0.12	284	113	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.91	3.51	119	-	392	969
Landowner 31	17-Jun-22	443	< 0.1	530	-	7	1.6	< 5	45.9	-	< 0.1	0.041	35.5	0.595	0.16	2.5	4.55	106	0.519	< 0.005	0.15	261	100	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	6	8.35	2.86	114	-	375	927
Landowner 31	19-Sep-22	542	< 0.1	594	-	< 5	< 1.0	< 5	40.0	-	5.4	0.038	38.2	0.498	0.11	2.6	5.25	136	0.500	< 0.0005	0.16	257	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.33	3.69	111	-	443	906
Landowner 31	19-Sep-22	548	< 0.1	605	-	< 5	< 1.0	< 5	40.3	-	4.2	0.040	38.7	0.502	0.11	2.6	5.23	139	0.500	< 0.0005	0.13	260	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.25	3.75	115	-	442	912
Landowner 24	8-Aug-19	550	< 0.1	575	-	< 5	1	< 5	-	108	1.6	0.05	18.7	0.241	< 0.08	-	4.41	143	0.621	0.0022	0.19	216	99	1.6	0.36	< 0.05	< 0.01	0.36	< 5	8.05	4.23	82	-	451	981
Landowner 24	7-Oct-21	549	< 0.1	601	-	< 5	< 1.0	< 5	-	-	3.3	0.051	20.7	0.324	< 0.08	-	5.93	154	0.684	< 0.0005	0.16	256	111	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.31	4.19	85.2	-	456	1000
Landowner 24	8-Oct-21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landowner 24	17-Jun-22	151	< 0.1	236	-	59	< 1.0	< 5	1.4	-	< 0.1	0.011	1.8	< 0.005	0.09	2.5	1.43	96.6	0.054	< 0.0005	< 0.01	10.9	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	49	9.47	12.7	< 1.0	-	222	466
Landowner 24	10-Oct-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

INTEGRATED SUSTAINABILITY

Table 1B: Water Analytical Results: General, Major Ions and Nutrients

Client Name: Enhance Energy Ltd.

Project Number: CP22-EEI-01-00 **Date:** 09-Feb-23 **Rev:** A

Landowner ID	Date	Routine Water Paramaters																															
	(dd-mmm-yy)	Bicarbonate mg/L	Bromide mg/L	Calculated TDS mg/L	Total Dissolved Solids (Analysed) mg/L	Carbonate mg/L	Chloride mg/L	Hydroxide mg/L	Dissolved Calcium mg/L	Dissolved Inorganic Carbon mg/L	Dissolved Iron mg/L	Dissolved Lithium mg/L	Dissolved Magnesium mg/L	Dissolved Manganese mg/L	Dissolved Phosphorus mg/L	Dissolved Potassium mg/L	Dissolved Silicon mg/L	Dissolved Sodium mg/L	Dissolved Strontium mg/L	Dissolved Tin mg/L	Fluoride mg/L	Hardness mg/L	Ion Balance %	Nitrate mg/L	Nitrate-N mg/L	Nitrite mg/L	Nitrite-N mg/L	Nitrate + Nitrite (as N) mg/L	p - Alkalinity (as CaCO3) mg/L	pH pH Units	Sodium Adsorption Ratio None	Sulfate mg/L	Sulfide mg/L	T - Alkalinity (as CaCO3) mg/L	Electrical Conductivity uS/cm
UL1 - Development	11-Jul-19	541	< 0.1	653	-	23	5	< 5	-	113	< 0.1	0.022	2.3	0.011	< 0.08	-	3.14	233	0.058	< 0.0005	1.19	24	87	3.4	0.77	< 0.05	< 0.01	0.77	19	8.68	20.5	113	0.04	482	1160
UL1 - Development	15-Jul-19	424	< 0.1	402	-	< 5	3	< 5	-	79	< 0.1	0.038	31.4	0.485	< 0.08	-	4.43	47.3	0.651	< 0.0005	0.11	298	102	1.5	0.34	< 0.05	< 0.01	0.34	< 5	8.31	1.19	40	< 0.02	351	698
UL1 - Development	15-Jul-19	420	< 0.1	393	-	< 5	3	< 5	-	80	0.2	0.039	29	0.266	< 0.08	-	4.52	47.2	0.638	< 0.0005	0.16	280	99	0.2	0.05	< 0.05	< 0.01	0.05	< 5	8.27	1.23	40	< 0.02	344	678
UL1 - Development	6-Aug-19	531	< 0.1	661	-	18	4	< 5	-	125	< 0.1	0.045	1.7	0.005	< 0.08	-	3.83	255	0.082	< 0.0005	1.35	19	97	< 0.1	< 0.02	0.55	0.17	0.17	15	8.65	25.1	114	0.03	466	1170
UL1 - Development	6-Aug-19	514	< 0.1	653	-	19	4	< 5	-	121	< 0.1	0.044	1.7	< 0.005	< 0.08	-	3.44	256	0.086	< 0.0005	1.33	20	100	0.1	0.02	0.64	0.19	0.22	16	8.65	24.9	112	0.1	454	1170
UL1 - Development	7-Oct-19	584	< 0.1	696	730	22	4	< 5	-	123	< 0.1	0.035	1.6	0.006	< 0.08	-	3.51	255	0.08	< 0.0005	1.67	19	88	< 0.1	< 0.02	0.14	0.04	0.04	18	8.66	25.6	120	-	515	1150
UL1 - Development	7-Oct-19	589	< 0.1	686	715	21	4	< 5	-	119	< 0.1	0.036	1.6	0.006	0.1	-	3.54	248	0.081	< 0.0005	1.61	19	86	< 0.1	< 0.02	0.17	0.05	0.05	17	8.65	24.9	116	-	517	1150
UL1 - Development	21-Jul-20	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
UL1 - Development	21-Jul-20	567	< 0.1	675	-	26	2.7	< 5	-	108	< 0.1	0.036	1.2	0.01	-	-	-	273	0.059	0.0005	1.32	14	100	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	21	8.69	31.5	88	< 0.02	508	1220
UL1 - Development	28-Oct-20	551	< 0.1	691	740	45	1.7	< 5	-	110	0.2	0.021	0.9	0.008	-	-	4.58	288	0.036	0.0006	1.43	13	104	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	38	8.75	34.2	79.3	0.11	527	1160
UL1 - Development	28-Oct-20	569	< 0.1	697	695	43	1.6	< 5	-	108	0.2	0.021	0.9	0.009	-	-	4.72	288	0.036	0.0006	1.44	13	102	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	36	8.74	35.2	79.5	0.11	539	1160
UL1 - Development	15-Jun-21	384	< 0.1	390	-	< 5	13.8	< 5	-	92	< 0.1	0.057	30.3	0.528	< 0.08	-	5.23	51.9	0.684	0.0005	0.1	287	108	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.85	1.33	37.8	-	307	678
UL1 - Development	5-Oct-21	421	< 0.1	394	-	< 5	5.2	< 5	-	-	< 0.1	0.039	31.3	0.631	< 0.08	-	5.38	44.8	0.672	< 0.0005	0.10	300	103	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.25	1.13	34.9	-	345	692
UL1 - Development	26-Jun-22	369	< 0.1	392	-	< 5	1.5	< 5	63.5	-	< 0.1	0.037	30.6	0.005	0.24	2.4	3.63	45.6	0.617	< 0.0005	0.09	285	103	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.92	1.18	67.1	-	302	637
UL2 - Development	7-Aug-19	380	< 0.1	373	-	< 5	3	< 5	-	85	0.2	0.049	30.2	0.318	< 0.08	-	5.01	47.8	0.609	< 0.0005	0.16	286	111	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.92	1.23	38	-	310	700
UL2 - Development	7-Oct-19	441	< 0.1	399	395	< 5	3	< 5	-	75	0.4	0.039	27.7	0.283	< 0.08	-	5.41	45.6	0.623	< 0.0005	0.12	263	89	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.23	1.22	44	-	362	675
UL2 - Development	22-Jul-20	384	< 0.1	360	-	< 5	2.7	< 5	-	67	0.5	0.045	28.7	0.295	-	-	-	43.6	0.602	< 0.0005	0.12	262	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.03	1.17	36.2	< 0.02	315	724
UL2 - Development	22-Jul-20	< 5	< 0.1	< 0.6	-	< 5	< 1.0	< 5	-	< 1	< 0.1	< 0.001	< 0.2	< 0.005	-	-	-	< 0.6	< 0.001	< 0.0005	< 0.01	< 1	13	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	6.05	0	< 1.0	< 0.02	< 5	< 5
UL2 - Development	27-Oct-20	414	< 0.1	389	400	< 5	2.7	< 5	-	71	0.4	0.032	30.8	0.289	-	-	5.84	48.4	0.439	< 0.0005	0.1	291	105	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.13	1.23	35.9	< 0.02	340	678
UL2 - Development	15-Jun-21	556	< 0.1	685	-	25	2.5	< 5	-	114	< 0.1	0.045	0.9	0.007	0.17	-	3.9	293	0.058	0.0013	1.25	12	110	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	21	8.78	36.5	85.5	-	488	1170
UL2 - Development	5-Oct-21	419	< 0.1	398	-	< 5	5.8	< 5	-	-	0.5	0.042	30.6	0.344	< 0.08	-	5.64	46.9	0.618	< 0.0005	0.11	294	102	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.13	1.19	38.8	-	344	687
UL2 - Development	26-Jun-22	373	< 0.1	362	-	< 5	3.2	< 5	61.4	-	< 0.1	0.040	29.8	0.248	0.11	2.1	5.14	47.3	0.579	< 0.0005	0.10	276	110	0.9	0.20	< 0.05	< 0.01	0.20	< 5	7.97	1.24	33.4	-	306	630
UL3 - Development	7-Aug-19	390	< 0.1	378	-	< 5	3	< 5	-	100	< 0.1	0.041	31.5	0.548	< 0.08	-	4.89	45.8	0.641	< 0.0005	0.14	294	109	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.97	1.16	38	-	320	710
UL3 - Development	7-Oct-19	424	< 0.1	387	405	< 5	3	< 5	-	75	0.1	0.044	29.7	0.599	< 0.08	-	4.58	43.4	0.661	< 0.0005	0.1	276	95	< 0.1	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.16	1.14	39	-	348	682
UL3 - Development	22-Jul-20	399	< 0.1	365	-	< 5	2.9	< 5	-	67	< 0.1	0.043	29.3	0.549	-	-	-	40.9	0.643	< 0.0005	0.12	266	97	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.02	1.09	35.6	< 0.02	327	768
UL3 - Development	22-Jul-20	391	< 0.1	364	-	< 5	2.9	< 5	-	67	< 0.1	0.043	29.7	0.554	-	-	-	41.7	0.663	< 0.0005	0.13	271	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.04	1.1	35.5	< 0.02	320	730
UL3 - Development	28-Oct-20	415	< 0.1	391	355	< 5	3	< 5	-	71	< 0.1	0.025	32.2	0.564	-	-	5.85	46	0.418	< 0.0005	0.11	301	106	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.11	1.15	35.5	0.02	340	683
UL3 - Development	28-Oct-20	< 5	< 0.1	< 0.6	< 5	< 5	< 1.0	< 5	-	< 1	< 0.1	< 0.001	< 0.2	< 0.005	-	-	< 0.032	< 0.6	< 0.001	< 0.0005	< 0.01	< 1	13	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	5.44	0	< 1.0	< 0.02	< 5	< 5
UL3 - Development	15-Jun-21	388	< 0.1	381	-	< 5	3	< 5	-	91	< 0.1	0.053	29.5	0.288	< 0.08	-	5.58	50.7	0.618	< 0.0005	0.12	286	110	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.88	1.3	39.1	-	312	674
UL3 - Development	5-Oct-21	624	< 0.1	701	-	32	2.3	< 5	-	-	< 0.1	0.032	0.3	< 0.005	0.10	-	3.60	290	0.058	< 0.0005	1.38	5	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	26	8.70	53.9	66.9	-	564	1180
UL3 - Development	26-Jun-22	537	< 0.1	627	-	41	1.0	< 5	2.7	-	< 0.1	0.030	0.49	0.515	< 0.08	1.1	5.03	282	0.056	< 0.0005	1.69	8.8	113	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	27	8.72	41.4	34.6	-	495	1080
Landowner 19	16-Jun-21	428	< 0.1	437	-	20	8.4	< 5	-	101	< 0.1	-	47.5	< 0.005	< 0.08	-	-	14.6	-	-	0.19	419	104	25.1	5.67	< 0.05	< 0.01	5.67	17	8.6	0.31	19.7	-	376	773
Landowner 19	8-Oct-21	457	< 0.1	448	-	< 5	8.4	< 5	-	-	< 0.1	0.046	52.8	< 0.005	-	-	6.32	15.7	0.608	< 0.0005	0.18	465	118	24.9	5.62	< 0.05	< 0.01	5.62	< 5	7.73	0.32	19.7	-	375	822
Landowner 29	17-Jun-21	410	< 0.1	400	-	< 5	12.1	< 5	-	96	0.7	0.06	26.8	0.121	< 0.08	-	6.69	52	1.12	< 0.0005	0.05	271	98	0.7	0.16	< 0.05	< 0.01	0.16	< 5	8.13	1.37	40.7	-	336	682
Landowner 29	23-Jun-22	385	< 0.1	370	-	< 5	< 1.0	< 5	67.8	-	< 0.1	0.051	25.9	0.123	0.08	2.3	5.42	49.6	1.11	< 0.0005	0.04	276	110	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.04	1.30	35.5	-	316	647
Landowner 29	23-Jun-22	383	< 0.1	370	-	< 5	< 1.0	< 5	67.4	-	< 0.1	0.050	27.3	0.124	0.09	2.2	5.41	49.0	1.06	< 0.0005	0.05	281	111	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.02	1.27	35.5	-	314	643
Landowner 29	24-Jun-22	474	< 0.1	654	-	< 5	95.5	< 5	96.3	-	< 0.1	0.057	46.9	0.332	0.10	2.3	5.06	105	0.854	< 0.0005	0.11	434	111	< 0.5	< 0.02	3.34	1.02	1.02	< 5	7.86	2.19	71.1	-	389	1150
Landowner 29	24-Sep-22	443	< 0.1	400	-	< 5	< 1.0	< 5	58.9	-	0.6	0.058	27.5	0.118	0.12	2.4	6.11	55.0	1.15	< 0.0025	0.06	260	95	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.20	1.48	38.1	-	357	684
273157 (Enhance Facility Well)	15-Jun-21	482	< 0.1	584	-	6	2.6	< 5	-	104	< 0.1	0.095	4.7	0.039	< 0.08	-	4.37	226	0.26	< 0.0005	0.14	51	108	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.36	13.7	93.3	-	398	985
273157 (Enhance Facility Well)	5-Oct-21	516	< 0.1	594	-	14	8.8	< 5	-	-	0.2	0.071	4.7	0.046	< 0.08	-	4.53	216	0.270	< 0.0005	0.14	52	96	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	12	8.52	13.1	83.0	-	446	1000
273157 (Enhance Facility Well)	14-Jun-22	477	-	580	-	32	2.3	< 5	11.3	-	< 0.1	0.069	4.7	0.035	0.13	1.3	4.34	212	0.269	< 0.0005	0.15	47.6	96	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	27	8.81	13.4	81.9	-	436	907
273157 (Enhance Facility Well)	19-Sep-22	530	< 0.1	601	-	12	2.0	< 5	11.7	-	0.2	0.063	4.8	0.038	0.11	1.2	4.90	224	0.270	< 0.0010	0.16	49.0	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	10	8.48	13.9	84.8	-	446	914
Landowner 14	6-Oct-21	447	0.1	444	-	< 5	13.5	< 5	-	-	1.0	0.064	33.9	0.200	< 0.08	-	6.71	75.2	0.596	< 0.0005	0.12	306	113	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.01	1.87	32.3	-	366	818
Landowner 14	18-Jun-22	481	< 0.1	433	-	< 5	12.6	< 5	57.5	-	< 0.1	0.064	28.5	0.190	0.14	2.1	5.98	64.0	0.620	< 0.0005	0.09	261	90	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.11	1.72	32.1	-	386	711
Landowner 14	21-Sep-22	429	0.1	429	-	< 5	15.1	< 5	57.1	-	1.0	0.070	28.3	0.191	< 0.08	2.2	6.13	81.2	0.568	< 0.0010	0.13	259	108	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.04	2.19	34.0	-	352	780
Landowner 26	8-Oct-21	492	< 0.1	690	-	< 5	101	< 5	-	-	0.6	0.060	48.0	0.397	-	-	6.10	115.0	0.952	< 0.0005	0.22	457	114	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.96	2.34	77.3	-	404	1250
Landowner 26	21-Sep-22	481	0.8	671	-	< 5	111	< 5	95.3	-	1.6	0.069	46.0	0.335	< 0.08	2.4	5.29	109	1.05	< 0.0010	0.20	427	107	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.91	2.29	70.4	-	394	1210
Landowner 7	16-Oct-21	394	< 0.1	412	-	< 5	6.2	< 5	-	-	< 0.1	0.030	30.4	0.093	< 0.08	-	5.97	41.0	0.637	< 0.0005	0.18	360	120	1.1	0.25	< 0.05	< 0.01	0.25	< 5	7.62	0.94	42.5	-	323	729
Landowner 7	16-Jun-22	458	< 0.1	419	-	< 5	7.2	< 5	82.0	-	< 0.1	0.026	27.6	0.124	0.10	2.8	4.65	32.2	0.557	< 0.0005	0.25	318	91	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.08	0.78	41.5	-	369	674
Landowner 7	20-Sep-22	457	< 0.1	424	-	< 5	5.9	< 5	84.2	-	2.8	0.028	30.4	0.116	0.13	3.1	5.79	35.6	0.612	< 0.0010	0.19	335	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.03	0.85	39.6	-	369	676
Landowner 11	6-Oct-21	436	0.1	477	-	< 5	15.3	< 5	-	-	< 0.1	0.038	26.6	0.163	< 0.08	-	5.06	102	0.685	< 0.0005	0.24	247	106	1.8	0.41	< 0.05	< 0.01	0.41	< 5	8.26	2.82	59.8	-	357	858
Landowner 11	15-Jun-22	426	< 0.1	458	-	7	15.0	< 5	47.0	-	< 0.1	0.037	24.9	0.119	0.15	1.7	4.72	95.5	0.684	< 0.0005	0.26	220	97	2.5	0.56	< 0.05	< 0.01	0.56	5	8.35	2.80	54.6	-	360	813
Landowner 11	20-Sep-22	475	< 0.1	498	-	< 5	17.2	< 5	49.7	-	0.1	0.042	27.2	0.144	0.12	2.0	5.57	108	0.679	< 0.0010	0.26	-	99	1.0	0.23	< 0.05	< 0.01	0.23	< 5	8.00	3.06	59.2	-	383	773
Landowner 16	6-Oct-21	517	< 0.1	561	-	< 5	< 1.0	< 5	-	-	< 0.1	0.085	5.9	0.017	< 0.08	-	4.39	221	0.341	< 0.0005	0.25	67	113	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.31	11.7	60.8	-	428	977
Landowner 16	16-Jun-22	493	< 0.1	499	-	< 5	1.1	< 5	14.3	-	< 0.1	0.081	4.6	0.011	0.09	1.4	4.19	183	0.326	< 0.0005	0.18	54.6	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.23	10.8	52.2	-	404	789
Landowner 16	20-Sep-22	556	< 0.1	574	-	6	< 1.0	< 5	14.8	-	< 0.1	0.088	5.4	0.015	0.11	1.4	4.66	211	0.360	< 0.0005	0.18	59.2	98	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	5	8.37	11.9	62.0	-	459	879

INTEGRATED SUSTAINABILITY

Table 1B: Water Analytical Results: General, Major Ions and Nutrients

Client Name: Enhance Energy Ltd. **Project Number:** CP22-EEI-01-00 **Date:** 09-Feb-23 **Rev:** A

		Routine Water Paramaters																																	
Landowner ID	Date	Bicarbonate	Bromide	Calculated TDS	Total Dissolved Solids (Analysed)	Carbonate	Chloride	Hydroxide	Dissolved Calcium	Dissolved Inorganic Carbon	Dissolved Iron	Dissolved Lithium	Dissolved Magnesium	Dissolved Manganese	Dissolved Phosphorus	Dissolved Potassium	Dissolved Silicon	Dissolved Sodium	Dissolved Strontium	Dissolved Tin	Fluoride	Hardness	Ion Balance	Nitrate	Nitrate-N	Nitrite	Nitrite-N	Nitrate + Nitrite (as N)	p - Alkalinity (as CaCO3)	pH	Sodium Adsorption Ratio	Sulfate	Sulfide	T - Alkalinity (as CaCO3)	Electrical Conductivity
	(dd-mmm-yy)	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	%	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	pH Units	None	mg/L	mg/L	mg/L	uS/cm
Landowner 9	16-Jun-21	421	< 0.1	443	-	< 5	10.4	< 5	-	96	< 0.1	-	25.2	0.007	< 0.08	-	-	95.3	-	-	0.14	220	103	1.6	0.36	< 0.05	< 0.01	0.36	< 5	8.18	2.79	54.5	-	345	773
Landowner 9	16-Jun-21	414	< 0.1	442	-	< 5	11.9	< 5	-	95	< 0.1	-	25.7	0.007	< 0.08	-	-	95	-	-	0.19	221	104	1.5	0.34	< 0.05	< 0.01	0.34	< 5	8.08	2.78	55.8	-	340	767
Landowner 9	6-Oct-21	423	< 0.1	481	-	< 5	6.0	< 5	-	-	< 0.1	0.060	20.8	0.014	< 0.08	-	4.15	140	0.596	< 0.0005	0.23	188	118	1.3	0.29	< 0.05	< 0.01	0.29	< 5	8.19	4.44	60.9	-	347	827
Landowner 9	15-Jun-22	400	< 0.1	428	-	< 5	5.7	< 5	34.9	-	< 0.1	0.059	18.8	0.010	0.16	1.8	3.60	111	0.630	< 0.0005	0.22	165	103	1.5	0.34	< 0.05	< 0.01	0.34	< 5	8.26	3.77	57.9	-	328	779
Landowner 9	19-Sep-22	438	< 0.1	455	-	< 5	6.0	< 5	39.8	-	< 0.1	0.054	22.7	0.007	0.12	2.2	4.15	109	0.644	< 0.0010	0.23	193	101	1.8	0.41	< 0.05	< 0.01	0.41	< 5	8.33	3.42	57.6	-	359	713
Landowner 3	6-Oct-21	486	< 0.1	627	-	5	8.1	< 5	-	-	< 0.1	0.067	3.0	0.092	< 0.08	-	4.20	246	0.401	< 0.0005	0.11	49	110	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.36	15.3	109	-	407	1110
Landowner 3	6-Oct-21	498	< 0.1	637	-	< 5	8.3	< 5	-	-	0.1	0.066	2.5	0.088	< 0.08	-	4.27	250	0.401	< 0.0005	0.10	45	109	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.28	16.2	116	-	409	1110
Landowner 3	17-Jun-22	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Landowner 3	21-Sep-22	480	< 0.1	707	-	< 5	39.4	< 5	51.6	-	0.8	0.091	23.7	0.248	< 0.08	2.8	4.27	188	1.09	< 0.0010	0.12	226	103	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.17	5.44	165	-	393	1190
Landowner 3	6-Oct-21	490	< 0.1	641	-	< 5	9.0	< 5	-	-	< 0.1	0.069	2.8	0.112	< 0.08	-	4.33	249	0.434	< 0.0005	0.03	50	110	1.7	0.38	< 0.05	< 0.01	0.38	< 5	8.29	15.4	120	-	405	1110
Landowner 20	14-Oct-21	553	< 0.1	589	-	7	< 1.0	< 5	-	-	< 0.1	-	6.8	0.006	-	-	-	225	-	-	< 0.01	82	110	2.1	0.47	< 0.05	< 0.01	0.47	6	8.37	10.8	52.6	-	465	1020
Landowner 20	23-Jun-22	602	< 0.1	604	-	12	< 1.0	< 5	18.5	-	< 0.1	0.094	5.6	< 0.005	0.09	1.6	4.67	212	0.420	< 0.0005	0.09	69.3	93	1.8	0.41	< 0.05	< 0.01	0.41	10	8.43	11.1	56.8	-	505	938
Landowner 20	21-Sep-22	542	< 0.1	594	-	< 5	2.0	< 5	21.0	-	< 0.1	0.105	7.3	< 0.005	< 0.08	1.7	4.75	220	0.473	< 0.0010	0.19	82.5	107	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.30	10.5	75.2	-	449	1040
Landowner 28	8-Oct-21	403	< 0.1	373	-	< 5	9.0	< 5	-	-	< 0.1	0.041	34.9	< 0.005	-	-	4.97	13.2	1.12	< 0.0005	0.08	373	111	1.0	0.23	< 0.05	< 0.01	0.23	< 5	8.01	0.30	21.8	-	322	643
Landowner 28	15-Jun-22	337	< 0.1	313	-	< 5	6.8	< 5	75.7	-	< 0.1	0.040	29.6	< 0.005	0.16	3.0	4.38	11.2	1.13	< 0.0005	0.11	311	110	1.1	0.25	< 0.05	< 0.01	0.25	< 5	8.23	0.28	19.6	-	276	599
Landowner 28	19-Sep-22	421	< 0.1	363	-	< 5	6.8	< 5	77.7	-	< 0.1	0.038	33.4	< 0.005	0.12	3.4	5.18	12.2	0.953	< 0.0010	0.10	332	96	1.1	0.25	< 0.05	< 0.01	0.25	< 5	8.09	0.29	21.2	-	340	599
Landowner 8	8-Oct-21	635	< 0.1	946	-	< 5	1.5	< 5	-	-	< 0.1	0.099	0.6	0.011	-	-	3.21	384.0	0.086	< 0.0005	0.37	11	109	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.33	51.0	243	-	528	1560
Landowner 8	15-Jun-22	659	< 0.1	948	-	31	< 1.0	< 5	2.7	-	< 0.1	0.088	0.5	0.007	0.19	0.7	2.93	351	0.080	< 0.0005	0.35	8.8	92	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	26	8.76	51.4	238	-	582	1460
Landowner 8	15-Jun-22	671	< 0.1	950	-	28	< 1.0	< 5	2.6	-	< 0.1	0.089	0.5	0.007	0.18	0.8	2.94	353	0.081	< 0.0005	0.33	8.6	92	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	23	8.71	52.5	235	-	587	1460
Landowner 8	21-Sep-22	594	< 0.1	935	-	25	2.9	< 5	2.8	-	< 0.1	0.094	0.5	0.008	< 0.08	0.7	2.93	369	0.082	< 0.0005	0.35	9.1	103	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	21	8.60	53.3	242	-	529	1550
Landowner 30	7-Oct-21	362	< 0.1	370	-	8	8.1	< 5	-	-	1.6	0.033	31.0	0.499	< 0.08	-	5.66	51.9	0.483	< 0.0005	0.20	291	118	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	6	8.41	1.32	25.6	-	309	700
Landowner 30	18-Jun-22	432	0.1	418	-	< 5	12.5	< 5	0.3	-	< 0.1	0.022	< 0.2	< 0.005	0.16	2.4	5.38	164	0.002	< 0.0005	0.14	0.7	90	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.08	82.3	26.5	-	347	663
Landowner 30	19-Sep-22	425	< 0.1	382	-	< 5	8.5	< 5	59.0	-	1.8	0.030	29.9	0.483	0.13	2.1	5.89	49.4	0.522	< 0.0010	0.16	270	100	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.10	1.31	23.6	-	343	613
Landowner 21	14-Oct-21	532	< 0.1	672	-	12	10.7	< 5	-	-	0.1	0.042	1.6	0.020	< 0.08	-	3.89	273.0	0.152	< 0.0005	0.69	24	106	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	10	8.48	24.3	105	-	456	1140
Landowner 21	16-Jun-22	571	< 0.1	646	-	20	1.0	< 5	3.2	-	< 0.1	0.036	0.6	0.007	0.12	1.0	3.53	245	0.139	< 0.0005	0.53	10.5	90	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	16	8.59	32.9	94.8	-	492	1050
Landowner 21	20-Sep-22	584	< 0.1	720	-	21	< 1.0	< 5	4.4	-	< 0.1	0.043	0.8	0.012	0.17	1.0	3.73	286	0.131	< 0.0005	0.72	14.3	100	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	17	8.64	32.9	120	-	505	1100
Landowner 13	17-Oct-21	504	< 0.1	710	-	< 5	< 1.0	< 5	-	-	1.3	0.050	31.3	0.219	-	-	4.34	196.0	1.04	0.0010	< 0.01	262	116	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.03	5.26	179	-	406	1080
Landowner 13	16-Jun-22	512	< 0.1	662	-	< 5	< 1.0	< 5	48.0	-	< 0.1	0.041	23.0	0.165	0.09	2.3	4.27	158	0.989	< 0.0005	0.09	215	93	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.24	4.69	179	-	411	1010
Landowner 13	21-Sep-22	455	< 0.1	652	-	< 5	1.5	< 5	47.5	-	0.3	0.047	24.3	0.179	< 0.08	2.6	4.45	172	1.03	< 0.0010	0.07	219	106	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.14	5.06	180	-	373	1080
Landowner 23	6-Oct-21	387	0.2	524	-	< 5	57.4	< 5	-	-	< 0.1	0.041	33.1	< 0.005	< 0.08	-	6.84	31.4	0.618	< 0.0005	0.20	441	108	44.5	10.1	< 0.05	< 0.01	10.1	< 5	7.93	0.65	41.3	-	317	971
Landowner 23	6-Oct-21	571	< 0.1	755	-	15	9.4	< 5	-	-	< 0.1	0.053	1.0	0.009	< 0.08	-	3.39	323	0.075	< 0.0005	0.54	14	113	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	13	8.55	37.4	121	-	494	1330
Landowner 23	16-Jun-22	586	< 0.1	723	-	26	10.6	< 5	1.5	-	< 0.1	0.048	0.2	< 0.005	0.13	0.7	3.26	277	0.070	< 0.0005	0.49	4.6	92	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	22	8.74	56.3	119	-	516	1190
Landowner 23	20-Sep-22	609	< 0.1	796	-	21	10.3	< 5	2.8	-	< 0.1	0.056	0.4	0.007	0.18	0.7	3.51	317	0.078	< 0.0005	0.58	8.6	100	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	17	8.63	46.9	144	-	525	1220
Landowner 20	6-Oct-21	490	< 0.1	661	-	15	7.3	< 5	-	-	< 0.1	0.048	0.6	0.006	< 0.08	-	3.48	276	0.071	< 0.0005	0.53	9	109	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	12	8.60	39.5	118	-	426	1150
Landowner 20	8-Oct-21	537	< 0.1	626	-	12	3.0	< 5	-	-	< 0.1	0.067	2.6	0.014	-	-	4.31	244.0	0.175	< 0.0005	0.29	31	100	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	10	8.48	19.2	91.1	-	460	1080
Landowner 20	16-Jun-22	514	< 0.1	613	-	21	9.1	< 5	1.3	-	< 0.1	0.043	0.3	< 0.005	0.11	0.7	3.25	229	0.072	< 0.0005	0.49	4.5	88	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	18	8.65	47.0	99.3	-	449	1010
Landowner 20	23-Sep-22	519	< 0.1	671	-	22	7.7	< 5	2.3	-	< 0.1	0.052	0.4	0.005	0.12	0.7	3.46	278	0.065	< 0.0005	0.52	7.4	105	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	19	8.66	44.5	105	-	455	1100
Landowner 10	8-Oct-21	529	< 0.1	618	-	14	3.0	< 5	-	-	< 0.1	0.063	2.7	0.015	-	-	4.43	238.0	0.173	< 0.0005	0.29	32	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	12	8.53	18.4	90.8	-	457	1080
Landowner 10	18-Jun-22	555	< 0.1	616	-	14	3.3	< 5	7.9	-	< 0.1	0.064	2.3	0.026	0.15	1.1	3.98	224	0.162	< 0.0005	0.25	29.2	90	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	12	8.52	18.0	90.6	-	470	954
Landowner 10	20-Sep-22	570	< 0.1	633	-	< 5	3.2	< 5	8.0	-	< 0.1	0.069	2.6	0.026	0.12	1.2	4.46	249	0.170	< 0.0005	0.26	30.7	102	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.35	19.6	88.6	-	467	969
Landowner 10	20-Sep-22	565	< 0.1	629	-	< 5	3.2	< 5	8.0	-	< 0.1	-	2.5	0.026	-	1.1	-	247	-	-	0.24	30.3	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.35	19.5	89.1	-	460	972
Landowner 5	14-Oct-21	577	< 0.1	710	-	< 5	4.0	< 5	-	-	< 0.1	0.030	48.7	0.233	< 0.08	-	4.51	170	0.51	< 0.0005	0.12	347	115	0.5	0.11	< 0.05	< 0.01	0.11	< 5	8.23	3.97	142	-	465	1140
Landowner 5	16-Jun-22	505	< 0.1	639	-	< 5	< 1.0	< 5	51.8	-	< 0.1	0.029	38.3	0.190	0.19	2.1	4.59	149	0.491	< 0.0005	0.15	287	108	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.14	3.83	149	-	467	1030
Landowner 5	22-Sep-22	587	< 0.1	697	-	< 5	< 1.0	< 5	46.7	-	< 0.1	0.035	40.9	0.207	0.14	2.7	5.21	166	0.518	< 0.0005	0.15	285	102	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.15	4.28	152	-	473	1110
Landowner 17	8-Oct-21	311	0.4	394	-	< 5	56.6	< 5	-	-	< 0.1	0.039	28.4	0.411	-	-	6.09	35.1	0.916	< 0.0005	0.10	344	118	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.82	0.82	25.9	-	255	742
Landowner 17	18-Jun-22	339	0.3	382	-	< 5	56.6	< 5	77.7	-	< 0.1	0.040	23.4	0.334	0.15	2.7	5.47	27.2	0.970	< 0.0005	0.11	290	91	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.27	0.69	27.7	-	272	651
Landowner 17	21-Sep-22	313	0.3	363	-	< 5	49.6	< 5	76.3	-	0.3	0.042	24.0	0.316	< 0.08	2.6	5.60	30.9	1.03	< 0.0010	0.14	289	102	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	7.97	0.79	25.7	-	257	704
Landowner 32	7-Oct-21	480	< 0.1	596	-	< 5	43.4	< 5	-	-	< 0.1	0.088	54.2	< 0.005	< 0.08	-	7.10	40.2	1.00	< 0.0005	0.33	533	114	33.9	7.66	< 0.05	< 0.01	7.66	< 5	8.09	0.76	61.2	-	394	1020
Landowner 32	18-Jun-22	527	< 0.1	567	-	< 5	31.7	< 5	102	-	< 0.1	0.083	45.5	< 0.005	0.16	3.0	6.07	32.8	0.999	< 0.0005	0.25	442	91	34.9	7.88	< 0.05	< 0.01	7.88	< 5	8.01	0.68	58.2	-	424	898
Landowner 25	14-Oct-21	335	< 0.1	361	-	< 5	7.0	< 5	-	-	< 0.1	0.045	30.4	< 0.005	< 0.08	-	4.97	36.2	0.819	< 0.0005	0.15	300	115	14.1	3.19	< 0.05	< 0.01	3.19	< 5	7.94	0.91	34.9	-	275	660
Landowner 25	14-Oct-21	337	< 0.1	358	-	< 5	6.2	< 5	-	-	< 0.1	0.046	30.4	< 0.005	< 0.08	-	4.82	34.2	0.818	< 0.0005	0.15	298	113	13.3	3.00	< 0.05	< 0.01	3.00	< 5	7.94	0.86	35.3	-	276	656
Landowner 25	17-Jun-22	382	< 0.1	370	-	< 5	6.2	< 5	71.3	-	< 0.1	0.038	26.3	< 0.005	0.09	2.8	4.65	29.3	0.835	< 0.0005	0.17	286	96	12.4	2.80	< 0.05	< 0.01	2.80	< 5	8.13	0.75	34.0	-	307	593
Landowner 25	17-Jun-22	381	< 0.1	370	-	< 5	6.4	< 5	71.4	-	< 0.1	0.040	25.6	< 0.005	< 0.08	3.0	4.66	29.7	0.831	< 0.0005	0.17	284	96	12.5	2.82	< 0.05	< 0.01	2.82	< 5	8.00	0.77	34.2	-	305	639
Landowner 25	20-Sep-22	388	< 0.1	377	-	< 5	6.5	< 5	66.7	-	< 0.1	0.047	29.0	< 0.005	0.12	3.3	5.37	33.5	0.889	< 0.0010	0.13	286	97	12.3	2.78	< 0.20	< 0.01	2.78	< 5	8.05	0.86	35.2	-	312	604
Landowner 18	16-Oct-21	302	< 0.1	297	-	< 5	1.3	< 5	-	-	< 0.1	0.034	18.4	0.157	< 0.08	-	5.24	48.9	1.41	< 0.0005	< 0.01	213	118	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.34	1.46	22.9	-	252	590
Landowner 18	15-Jun-22	278	< 0.1	277	-	8	1.1	< 5	48.3	-	0.1	0.030	16.9	0.142	0.15	1.8	4.38	40.2	1.36	< 0.0005	0.06	190	105	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	6	8.42	1.27	23.9	-	240	521
Landowner 18	19-Sep-22	344	< 0.1	308	-	< 5	1.1	< 5	48.6	-	0.3	0.027	18.3	0.130	0.13	2.1	5.14	44.9	1.21	< 0.0025	0.08	197	96	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	< 5	8.13	1.39	24.2	-	278	490
Landowner 6	17-Jun-21	427	0.2	438	-	< 5	31.1	< 5	-	99	< 0.1	0.05	38.9	< 0.005	< 0.08	-	6.97	19.6	0.537	< 0.0005	0.13	402	103	10.7	2.42	< 0.05	< 0.01	2.42	< 5	8.02	0.43	28.4	-	350	772

INTEGRATED SUSTAINABILITY

Table 1B: Water Analytical Results: General, Major Ions and Nutrients

Client Name: Enhance Energy Ltd.

Project Number: CP22-EEI-01-00 **Date:** 09-Feb-23 **Rev:** A

Routine Water Paramaters

Landowner ID	Date (dd-mmm-yy)	Bicarbonate mg/L	Bromide mg/L	Calculated TDS mg/L	Total Dissolved Solids (Analysed) mg/L	Carbonate mg/L	Chloride mg/L	Hydroxide mg/L	Dissolved Calcium mg/L	Dissolved Inorganic Carbon mg/L	Dissolved Iron mg/L	Dissolved Lithium mg/L	Dissolved Magnesium mg/L	Dissolved Manganese mg/L	Dissolved Phosphorus mg/L	Dissolved Potassium mg/L
Landowner 6	4-Oct-21	466	0.2	467	-	< 5	27.4	< 5	-	-	< 0.1	0.043	43.0	< 0.005	< 0.08	-
Landowner 6	14-Jun-22	391	0.163	406	-	< 5	25.6	< 5	91.0	-	< 0.1	0.046	37.4	< 0.005	< 0.08	2.1
Landowner 6	19-Sep-22	470	0.1	494	-	< 5	36.7	< 5	98.0	-	< 0.1	0.042	44.2	< 0.005	0.15	2.7
Landowner 22	7-Oct-21	520	< 0.1	695	-	46	< 1.0	< 5	-	-	< 0.1	0.053	0.3	< 0.005	< 0.08	-
Landowner 22	15-Jun-22	443	< 0.1	605	-	31	< 1.0	< 5	1.6	-	< 0.1	0.043	< 0.2	< 0.005	0.18	< 0.6
Landowner 22	20-Sep-22	525	< 0.1	661	-	30	< 1.0	< 5	1.7	-	< 0.1	0.050	0.3	< 0.005	0.17	< 0.6
12-25-039-24W4	17-Oct-21	882	< 0.1	1170	-	< 5	48.3	< 5	-	-	< 0.1	0.134	102	0.019	0.08	-
12-25-039-24W4	18-Jun-22	678	< 0.1	935	-	< 5	48.3	< 5	167	-	< 0.1	0.112	75.8	< 0.005	0.16	1.8
12-25-039-24W4	18-Jun-22	641	< 0.1	922	-	< 5	51.5	< 5	163	-	< 0.1	0.114	73.3	< 0.005	0.17	1.8
12-25-039-24W4	20-Sep-22	763	< 0.1	997	-	< 5	50.0	< 5	167	-	< 0.1	0.126	78.5	< 0.005	0.15	1.9

Landowner ID	Date (dd-mmm-yy)	Dissolved Silicon mg/L	Dissolved Sodium mg/L	Dissolved Strontium mg/L	Dissolved Tin mg/L	Fluoride mg/L	Hardness mg/L	Ion Balance %	Nitrate mg/L	Nitrate-N mg/L	Nitrite mg/L	Nitrite-N mg/L	Nitrate + Nitrite (as N) mg/L	p - Alkalinity (as CaCO3) mg/L	pH pH Units	Sodium Adsorption Ratio None	Sulfate mg/L	Sulfide mg/L	T - Alkalinity (as CaCO3) mg/L	Electrical Conductivity uS/cm
Landowner 6	4-Oct-21	6.00	19.3	0.553	< 0.0005	0.18	442	106	11.3	2.55	< 0.05	< 0.01	2.55	< 5	8.02	0.40	28.0	-	382	814
Landowner 6	14-Jun-22	5.78	18.5	0.598	< 0.0005	0.21	381	107	11.8	2.67	< 0.05	< 0.01	2.67	< 5	8.28	0.41	27.8	-	322	753
Landowner 6	19-Sep-22	7.12	20.3	0.573	< 0.0010	0.19	427	96	25.7	5.81	< 0.05	< 0.01	5.81	< 5	7.90	0.43	34.9	-	379	824
Landowner 22	7-Oct-21	3.46	279	0.044	< 0.0005	0.90	6	99	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	38	8.89	49.6	111	-	493	1160
Landowner 22	15-Jun-22	2.94	244	0.043	< 0.0005	1.20	4.0	100	0.6	0.14	< 0.05	< 0.01	0.14	26	8.80	53.0	110	-	415	1080
Landowner 22	20-Sep-22	3.23	271	0.046	< 0.0005	0.97	5.5	101	< 0.5	< 0.02	< 0.05	< 0.01	< 0.02	25	8.81	50.3	100	-	471	1030
12-25-039-24W4	17-Oct-21	10.66	77.2	1.78	0.0008	0.18	1020	112	1.6	0.36	< 0.05	< 0.01	0.36	< 5	7.75	1.05	263	-	714	1710
12-25-039-24W4	18-Jun-22	8.51	57.8	1.38	< 0.0005	0.31	729	97	24.1	5.44	< 0.05	< 0.01	5.44	< 5	8.24	0.93	227	-	545	1360
12-25-039-24W4	18-Jun-22	8.52	57.3	1.40	< 0.0005	0.32	709	97	28.5	6.44	< 0.05	< 0.01	6.44	< 5	7.99	0.94	231	-	525	1440
12-25-039-24W4	20-Sep-22	10.6	67.3	1.30	< 0.0025	0.28	740	93	17.6	3.98	< 0.05	< 0.01	3.98	< 5	7.97	1.08	239	-	613	1530

INTEGRATED SUSTAINABILITY

Table 2: Water Analytical Results: GW Dissolved Metals

Client Name: Enhance Energy **Project Manager:** Emily Guzman **Project Number:** CP22-EEI-22-00 **Date:** February 9, 2023 **Rev #:** A

Landowner ID	Date (dd-mmm-yy)	Dissolved Aluminum mg/L	Dissolved Antimony mg/L	Dissolved Arsenic mg/L	Dissolved Barium mg/L	Dissolved Beryllium mg/L	Dissolved Boron mg/L	Dissolved Cadmium mg/L	Dissolved Chromium mg/L	Dissolved Cobalt mg/L	Dissolved Copper mg/L	Dissolved Iron mg/L	Dissolved Lead mg/L	Dissolved Lithium mg/L	Dissolved Manganese mg/L	Dissolved Molybdenum mg/L	Dissolved Nickel mg/L	Dissolved Phosphorus mg/L	Dissolved Selenium mg/L	Dissolved Silicon mg/L	Dissolved Silver mg/L	Dissolved Sodium mg/L	Dissolved Strontium mg/L	Dissolved Thallium mg/L	Dissolved Tin mg/L	Dissolved Titanium mg/L	Dissolved Uranium mg/L	Dissolved Vanadium mg/L	Dissolved Zinc mg/L
Landowner 2	8-Aug-19	0.008	< 0.001	< 0.001	0.06	< 0.001	0.07	< 0.000016	< 0.001	< 0.0009	0.0095	< 0.1	< 0.0005	0.051	< 0.005	0.001	< 0.003	< 0.08	0.0043	4.63	< 0.00005	31.4	0.719	< 0.0001	0.0043	0.001	0.009	< 0.001	0.015
Landowner 2	9-Oct-19	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.05	< 0.000016	< 0.001	< 0.0009	0.0094	< 0.1	< 0.0005	0.045	< 0.005	0.001	< 0.003	< 0.08	0.0038	5.08	0.0001	31.7	0.679	< 0.0001	0.0014	< 0.001	0.008	< 0.001	0.013
Landowner 2	7-Oct-21	0.034	< 0.001	< 0.001	0.06	< 0.001	0.05	< 0.000016	< 0.001	< 0.0009	0.0111	< 0.1	< 0.0005	0.043	< 0.005	0.001	< 0.003	< 0.08	< 0.0005	5.86	< 0.0001	36.5	0.688	< 0.0001	< 0.0005	0.002	0.009	< 0.001	0.035
Landowner 2	7-Oct-21	0.006	< 0.001	< 0.001	0.06	< 0.001	0.06	< 0.000016	< 0.001	< 0.0009	0.0114	< 0.1	< 0.0005	0.045	< 0.005	0.001	< 0.003	< 0.08	< 0.0005	5.81	0.0001	33.9	0.745	< 0.0001	< 0.0005	0.003	0.009	< 0.001	0.036
Landowner 2	15-Jun-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.06	0.000018	< 0.0005	< 0.0009	0.0265	< 0.1	0.0001	0.044	< 0.005	0.001	< 0.003	0.19	0.0038	5.23	< 0.00005	32.8 31.0	0.790	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.054
Landowner 2	20-Sep-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.07	< 0.000032	< 0.0005	< 0.0009	0.0022	< 0.1	< 0.0001	0.051	< 0.005	0.001	< 0.003	0.13	0.0042	5.99	< 0.00005	33.0	0.785	< 0.0001	< 0.0010	< 0.002	0.008	< 0.001	0.019
Landowner 12	8-Aug-19	0.005	< 0.001	0.02	0.07	< 0.001	0.08	< 0.000016	< 0.001	0.0012	0.0015	1.1	< 0.0005	0.036	0.426	0.003	< 0.003	< 0.08	0.0007	4.55	< 0.00005	47.6	0.53	< 0.0001	0.0016	< 0.001	0.003	< 0.001	0.008
Landowner 12	8-Oct-19	0.019	< 0.001	0.023	0.08	< 0.001	0.08	< 0.000016	< 0.001	< 0.0009	0.0027	1.1	< 0.0005	0.038	0.443	0.004	< 0.003	< 0.08	0.0009	4.66	< 0.00005	46.5	0.563	< 0.0001	0.0019	0.002	0.003	< 0.001	0.007
Landowner 1	9-Oct-19	0.009	< 0.001	< 0.001	0.05	< 0.001	0.05	< 0.000016	< 0.001	< 0.0009	0.012	< 0.1	< 0.0005	0.042	0.015	0.002	< 0.003	< 0.08	0.0012	4.55	0.00018	37.6	0.744	< 0.0001	0.0017	< 0.001	0.007	< 0.001	0.024
Landowner 1	7-Oct-21	0.005	< 0.001	< 0.001	0.06	< 0.001	0.06	< 0.000016	< 0.001	< 0.0009	0.0201	< 0.1	< 0.0005	0.041	0.011	0.002	< 0.003	-	< 0.0005	5.60	< 0.0001	37.5	0.775	< 0.0001	< 0.0005	0.002	0.008	< 0.001	0.025
Landowner 1	17-Jun-22	< 0.004	< 0.001	< 0.001	0.05	< 0.0005	0.07	< 0.00016	< 0.0010	< 0.0009	0.0067	< 0.1	< 0.0005	0.045	0.008	0.002	< 0.003	0.16	< 0.005	4.68	< 0.00010	34.7	0.696	< 0.0001	< 0.005	< 0.01	0.004	< 0.001	0.016
Landowner 1	7-Aug-19	0.01	< 0.001	< 0.001	0.06	< 0.001	0.06	0.000025	< 0.001	< 0.0009	0.022	< 0.1	< 0.0005	0.045	0.014	0.003	< 0.003	< 0.08	0.0018	4.55	< 0.00005	38.6	0.721	< 0.0001	< 0.0005	0.002	0.007	< 0.001	0.04
Landowner 1	7-Aug-19	0.011	< 0.001	< 0.001	0.06	< 0.001	0.06	0.00002	< 0.001	< 0.0009	0.0217	< 0.1	< 0.0005	0.045	0.014	0.002	< 0.003	< 0.08	0.0018	4.56	< 0.00005	38.3	0.719	< 0.0001	< 0.0005	0.001	0.007	< 0.001	0.041
Landowner 1	19-Sep-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.05	< 0.000016	< 0.0005	< 0.0009	0.0103	< 0.1	< 0.0001	0.039	< 0.005	0.002	< 0.003	0.11	< 0.0005	5.45	< 0.00005	39.4	0.700	< 0.0001	< 0.0005	< 0.001	0.007	< 0.001	0.013
Landowner 25	7-Aug-19	< 0.004	< 0.001	< 0.001	0.07	< 0.001	0.06	< 0.000016	< 0.001	< 0.0009	0.0028	< 0.1	< 0.0005	0.049	< 0.005	0.002	< 0.003	< 0.08	0.0024	4.44	< 0.00005	33.5	0.797	< 0.0001	0.0011	0.001	0.008	< 0.001	0.024
Landowner 25	9-Oct-19	0.028	< 0.001	< 0.001	0.06	< 0.001	0.05	< 0.000016	< 0.001	< 0.0009	0.006	< 0.1	< 0.0005	0.044	< 0.005	0.002	< 0.003	< 0.08	0.002	4.61	0.00009	32.2	0.799	< 0.0001	0.002	< 0.001	0.008	< 0.001	0.03
Landowner 25	6-Oct-21	0.007	< 0.001	< 0.001	0.07	< 0.001	0.07	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.7	< 0.0005	0.054	0.128	0.001	< 0.003	< 0.08	0.0005	6.09	< 0.0001	58.3	1.17	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	0.047
Landowner 33	7-Aug-19	< 0.004	< 0.001	< 0.001	0.21	< 0.001	0.07	< 0.000016	< 0.001	< 0.0009	0.0013	< 0.1	< 0.0005	0.041	< 0.005	0.002	< 0.003	< 0.08	0.0024	4.6	< 0.00005	40.1	0.483	< 0.0001	0.0015	0.002	0.005	< 0.001	< 0.005
Landowner 33	8-Oct-19	< 0.004	< 0.001	< 0.001	0.21	< 0.001	0.11	< 0.000016	< 0.001	< 0.0009	0.0015	< 0.1	< 0.0005	0.044	< 0.005	0.002	< 0.003	< 0.08	0.002	4.44	0.00008	38.3	0.497	< 0.0001	0.0015	0.005	0.006	< 0.001	< 0.005
Landowner 33	8-Oct-19	0.007	< 0.001	< 0.001	0.19	< 0.001	0.06	< 0.000016	< 0.001	< 0.0009	0.0013	< 0.1	< 0.0005	0.044	< 0.005	0.002	< 0.003	< 0.08	0.0015	4.44	0.00033	39.7	0.491	< 0.0001	0.0021	0.001	0.005	< 0.001	< 0.005
Landowner 33	16-Jun-21	0.025	< 0.001	< 0.001	0.18	< 0.001	0.06	< 0.000016	< 0.001	< 0.0009	0.0027	< 0.1	< 0.0005	-	< 0.005	0.002	< 0.003	< 0.08	< 0.0005	-	< 0.0001	40	-	< 0.0001	-	0.002	0.005	-	< 0.005
Landowner 33	7-Oct-21	0.006	< 0.001	< 0.001	0.20	< 0.001	0.07	0.000017	< 0.001	< 0.0009	0.0036	< 0.1	< 0.0005	0.037	< 0.005	0.001	< 0.003	< 0.08	< 0.0005	5.63	< 0.0001	42.1	0.484	< 0.0001	< 0.0005	0.003	0.005	< 0.001	0.013
Landowner 33	15-Jun-22	< 0.004	< 0.001	< 0.001	0.18	< 0.0005	0.06	< 0.000016	< 0.0005	< 0.0009	0.0062	< 0.1	0.0004	0.039	< 0.005	0.001	< 0.003	0.14	0.0009	4.70	< 0.00005	36.0	0.473	< 0.0001	< 0.0005	< 0.001	0.004	< 0.001	0.011
Landowner 33	15-Jun-22	< 0.004	< 0.001	< 0.001	0.18	< 0.0005	0.06	< 0.000016	< 0.0005	< 0.0009	0.0031	< 0.1	0.0003	0.039	< 0.005	0.001	< 0.003	0.16	0.0008	4.68	< 0.00005	35.6	0.480	< 0.0001	< 0.0005	< 0.001	0.004	< 0.001	0.005
Landowner 33	21-Sep-22	< 0.004	< 0.001	< 0.001	0.19	< 0.0005	0.07	< 0.000016	< 0.0005	< 0.0009	0.0078	< 0.1	0.0004	0.044	< 0.005	0.001	< 0.003	< 0.08	0.0010	5.04	< 0.00005	38.6	0.507	< 0.0001	< 0.0005	< 0.001	0.004	< 0.001	0.011
Landowner 27	9-Aug-19	0.016	< 0.001	< 0.001	< 0.05	< 0.001	0.21	< 0.000016	< 0.001	< 0.0009	0.0035	0.3	< 0.0005	0.085	0.095	0.002	< 0.003	< 0.08	< 0.0005	3.88	< 0.00005	184	0.661	< 0.0001	0.0023	< 0.001	< 0.001	< 0.001	0.011
Landowner 27	9-Aug-19	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	< 0.08	< 0.0005	< 0.032	< 0.00005	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.005
Landowner 27	9-Aug-19	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	< 0.08	< 0.0005	< 0.032	< 0.00005	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.005
Landowner 27	8-Oct-19	0.007	< 0.001	< 0.001	< 0.05	< 0.001	0.23	< 0.000016	< 0.001	< 0.0009	0.0009	2.4	< 0.0005	0.087	0.182	0.002	< 0.003	< 0.08	0.0006	3.93	< 0.00005	213	0.472	< 0.0001	0.0029	0.004	< 0.001	< 0.001	0.022
Landowner 4	8-Aug-19	0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.13	< 0.000016	< 0.001	< 0.0009	0.0215	1.4	0.0013	0.059	0.15	0.001	< 0.003	< 0.08	< 0.0005	4.96	< 0.00005	58.3	0.884	< 0.0001	0.0024	0.002	< 0.001	< 0.001	0.026
Landowner 4	8-Oct-19	0.017	< 0.001	< 0.001	< 0.05	< 0.001	0.13	< 0.000016	< 0.001	< 0.0009	0.0009	2.1	< 0.0005	0.062	0.174	0.001	< 0.003	< 0.08	0.0008	5.27	< 0.00005	55.7	0.924	< 0.0001	0.002	0.003	< 0.001	< 0.001	0.014
Landowner 4	8-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.11	0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.051	0.214	0.001	< 0.003	-	< 0.005	6.27	< 0.0001	60.6	0.912	< 0.0001	< 0.0005	0.005	< 0.001	< 0.001	0.019
Landowner 4	18-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.11	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.052	0.172	0.001	< 0.003	0.13	< 0.0005	5.58	< 0.00005	51.6	0.945	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	0.006
Landowner 31	8-Aug-19	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.18	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.1	< 0.0005	0.051	0.036	0.003	< 0.003	< 0.08	< 0.0005	2.1	< 0.00005	148	0.108	< 0.0001	0.003	< 0.001	< 0.001	< 0.001	< 0.005
Landowner 31	8-Oct-21	0.006	< 0.001	0.003	< 0.05	< 0.001	0.18	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	0.0039	0.045	0.615	0.001	< 0.003	-	0.0009	4.71	< 0.0001	136.0	0.459	< 0.0001	< 0.0005	0.003	0.002	< 0.001	0.019
Landowner 31	17-Jun-22	< 0.004	< 0.001	0.002	< 0.05	< 0.0005	0.17	< 0.00016	< 0.0010	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.041	0.595	0.001	< 0.003	0.16	< 0.005	4.55	< 0.00010	106	0.519	< 0.0001	< 0.005	< 0.01	0.003	< 0.001	< 0.010
Landowner 31	19-Sep-22	< 0.004	< 0.001	0.002	< 0.05	< 0.0005	0.14	< 0.000016	< 0.0005	< 0.0009	< 0.0008	5.4	< 0.0001	0.038	0.498	0.001	< 0.003	0.11	< 0.0005	5.25	< 0.00005	136	0.500	< 0.0001	< 0.0005	< 0.001	0.001	< 0.001	< 0.004
Landowner 31	19-Sep-22	< 0.004	< 0.001	0.002	< 0.05	< 0.0005	0.14	< 0.000016	< 0.0005	< 0.0009	< 0.0008	4.2	< 0.0001	0.040	0.502	0.002	< 0.003	0.11	< 0.0005	5.23	< 0.00005	139	0.500	< 0.0001	< 0.0005	< 0.001	0.001	< 0.001	< 0.004
Landowner 24	8-Aug-19	0.005	< 0.001	0.002	< 0.05	< 0.001	0.2	< 0.000016	< 0.001	< 0.0009	0.143	1.6	< 0.0005	0.05	0.241	0.002	< 0.003	< 0.08	0.0006	4.41	< 0.00005	143	0.621	< 0.0001	0.0022	0.001	< 0.001	< 0.001	0.006
Landowner 24	7-Oct-21	0.006	< 0.001	0.002	< 0.05	< 0.001	0.20	< 0.000016	< 0.001	< 0.0009	< 0.0008	3.3	< 0.0005	0.051	0.324	0.001	< 0.003	< 0.08	< 0.0005	5.93	< 0.0001	154	0.684	< 0.0001	< 0.0005	0.004	< 0.001	< 0.001	0.009
Landowner 24	17-Jun-22	0.006	< 0.001	0.002	< 0.05	< 0.0005	0.14	0.000029	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.011	< 0.005	0.006	< 0.003	0.09	< 0.0005	1.43	< 0.00005	96.6	0.054	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004

INTEGRATED SUSTAINABILITY

Table 2: Water Analytical Results: GW Dissolved Metals

Client Name: Enhance Energy **Project Manager:** Emily Guzman **Project Number:** CP22-EEI-22-00 **Date:** February 9, 2023 **Rev #:** A

Landowner ID	Date (dd-mmm-yy)	Dissolved Aluminum mg/L	Dissolved Antimony mg/L	Dissolved Arsenic mg/L	Dissolved Barium mg/L	Dissolved Beryllium mg/L	Dissolved Boron mg/L	Dissolved Cadmium mg/L	Dissolved Chromium mg/L	Dissolved Cobalt mg/L	Dissolved Copper mg/L	Dissolved Iron mg/L	Dissolved Lead mg/L	Dissolved Lithium mg/L	Dissolved Manganese mg/L	Dissolved Molybdenum mg/L	Dissolved Nickel mg/L	Dissolved Phosphorus mg/L	Dissolved Selenium mg/L	Dissolved Silicon mg/L	Dissolved Silver mg/L	Dissolved Sodium mg/L	Dissolved Strontium mg/L	Dissolved Thallium mg/L	Dissolved Tin mg/L	Dissolved Titanium mg/L	Dissolved Uranium mg/L	Dissolved Vanadium mg/L	Dissolved Zinc mg/L
UL1 - Development	**11-Jul-19**	< 0.004	< 0.001	0.009	< 0.05	< 0.001	0.18	< 0.000016	< 0.001	< 0.0009	0.0011	< 0.1	< 0.0005	0.022	0.011	0.008	< 0.003	< 0.08	< 0.0005	3.14	< 0.00005	233	0.058	< 0.0001	< 0.0005	< 0.001	0.003	< 0.001	0.026
UL1 - Development	**15-Jul-19**	0.007	< 0.001	< 0.001	< 0.05	< 0.001	0.09	0.000031	< 0.001	< 0.0009	0.0015	< 0.1	< 0.0005	0.038	0.485	0.002	< 0.003	< 0.08	< 0.0005	4.43	< 0.00005	47.3	0.651	< 0.0001	< 0.0005	0.002	0.007	< 0.001	0.091
UL1 - Development	**15-Jul-19**	0.007	< 0.001	0.003	< 0.05	< 0.001	0.08	0.000017	< 0.001	< 0.0009	0.0016	0.2	< 0.0005	0.039	0.266	0.004	< 0.003	< 0.08	< 0.0005	4.52	< 0.00005	47.2	0.638	< 0.0001	< 0.0005	0.003	0.006	< 0.001	0.053
UL1 - Development	**6-Aug-19**	0.139	0.001	0.018	< 0.05	< 0.001	0.3	0.000038	< 0.001	< 0.0009	0.0065	< 0.1	< 0.0005	0.045	0.005	0.016	< 0.003	< 0.08	0.0021	3.83	< 0.00005	255	0.082	< 0.0001	< 0.0005	0.003	0.011	0.004	< 0.005
UL1 - Development	**6-Aug-19**	0.038	0.001	0.018	< 0.05	< 0.001	0.3	0.000038	< 0.001	< 0.0009	0.0066	< 0.1	< 0.0005	0.044	< 0.005	0.016	< 0.003	< 0.08	0.002	3.44	< 0.00005	256	0.086	< 0.0001	< 0.0005	0.002	0.011	0.003	< 0.005
UL1 - Development	**7-Oct-19**	0.014	0.001	0.017	< 0.05	< 0.001	0.27	< 0.000016	< 0.001	< 0.0009	0.0111	< 0.1	< 0.0005	0.035	0.006	0.014	< 0.003	< 0.08	0.0013	3.51	< 0.00005	255	0.08	< 0.0001	< 0.0005	0.01	0.009	0.002	0.021
UL1 - Development	**7-Oct-19**	0.014	0.001	0.017	< 0.05	< 0.001	0.28	< 0.000016	< 0.001	< 0.0009	0.0098	< 0.1	< 0.0005	0.036	0.006	0.014	< 0.003	0.1	0.0012	3.54	< 0.00005	248	0.081	< 0.0001	< 0.0005	0.009	0.009	0.003	0.018
UL1 - Development	**21-Jul-20**	0.006	< 0.001	< 0.001	< 0.05	< 0.001	0.31	0.000027	< 0.001	< 0.0009	0.0027	< 0.1	0.0005	0.036	0.01	0.012	< 0.003	-	0.0006	-	< 0.0001	273	0.059	< 0.0001	0.0005	0.001	0.006	-	0.011
UL1 - Development	**28-Oct-20**	0.24	< 0.001	0.005	< 0.05	< 0.001	0.2	< 0.000016	< 0.001	< 0.0009	0.0009	0.2	< 0.0005	0.021	0.008	0.008	< 0.003	-	< 0.0005	4.58	< 0.0001	288	0.036	< 0.0001	0.0006	0.008	0.003	0.003	0.013
UL1 - Development	**28-Oct-20**	0.236	< 0.001	0.005	< 0.05	< 0.001	0.2	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.2	0.0005	0.021	0.009	0.008	< 0.003	-	< 0.0005	4.72	< 0.0001	288	0.036	< 0.0001	0.0006	0.008	0.003	0.003	0.011
UL1 - Development	**15-Jun-21**	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.09	< 0.000016	< 0.001	< 0.001	0.002	< 0.1	0.0003	0.057	0.528	0.001	< 0.004	< 0.08	< 0.0005	5.23	< 0.00005	51.9	0.684	< 0.0005	0.0005	< 0.001	0.003	0.002	0.01
UL1 - Development	**5-Oct-21**	0.008	< 0.001	< 0.001	< 0.05	< 0.001	0.09	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.039	0.631	0.002	< 0.003	< 0.08	0.0057	5.38	0.0001	44.8	0.672	< 0.0001	< 0.0005	< 0.001	0.003	< 0.001	< 0.005
UL1 - Development	**26-Jun-22**	0.009	< 0.001	< 0.001	< 0.05	< 0.0005	0.07	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0002	0.037	0.005	0.002	< 0.003	0.24	< 0.0005	3.63	< 0.00005	45.6	0.617	< 0.0001	< 0.0005	0.003	0.003	< 0.001	< 0.005
UL2 - Development	**7-Aug-19**	0.009	< 0.001	0.001	0.05	< 0.001	0.09	0.000017	< 0.001	< 0.0009	0.0179	0.2	< 0.0005	0.049	0.318	0.002	< 0.003	< 0.08	< 0.0005	5.01	< 0.00005	47.8	0.609	< 0.0001	< 0.0005	0.002	0.004	< 0.001	0.034
UL2 - Development	**7-Oct-19**	0.007	< 0.001	0.002	< 0.05	< 0.001	0.08	0.000026	< 0.001	< 0.0009	0.0115	0.4	< 0.0005	0.039	0.283	0.002	< 0.003	< 0.08	< 0.0005	5.41	< 0.00005	45.6	0.623	< 0.0001	< 0.0005	0.008	0.003	< 0.001	0.042
UL2 - Development	**22-Jul-20**	0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.09	0.000018	< 0.001	< 0.0009	0.0086	0.5	0.0006	0.045	0.295	0.002	< 0.003	-	< 0.0005	-	< 0.0001	43.6	0.602	< 0.0001	< 0.0005	0.002	0.003	-	0.021
UL2 - Development	**22-Jul-20**	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	-	< 0.0005	-	< 0.0001	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	-	< 0.005
UL2 - Development	**27-Oct-20**	0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.05	< 0.000016	< 0.001	< 0.0009	0.0061	0.4	< 0.0005	0.032	0.289	0.002	< 0.003	-	0.0012	5.84	< 0.0001	48.4	0.439	< 0.0001	< 0.0005	0.001	0.002	< 0.001	0.021
UL2 - Development	**15-Jun-21**	0.104	< 0.001	0.004	< 0.05	< 0.001	0.27	0.000017	< 0.001	< 0.001	0.003	< 0.1	0.0011	0.045	0.007	0.007	< 0.004	0.17	< 0.0005	3.9	< 0.00005	293	0.058	< 0.0005	0.0013	0.008	0.004	0.002	0.04
UL2 - Development	**5-Oct-21**	0.005	< 0.001	< 0.001	< 0.05	< 0.001	0.09	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.5	< 0.0005	0.042	0.344	0.002	< 0.003	< 0.08	0.0128	5.64	< 0.0001	46.9	0.618	< 0.0001	< 0.0005	0.001	0.003	< 0.001	0.011
UL2 - Development	**26-Jun-22**	0.010	< 0.001	< 0.001	0.05	< 0.0005	0.07	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0002	0.040	0.248	0.002	< 0.003	0.11	< 0.0005	5.14	< 0.00005	47.3	0.579	< 0.0001	< 0.0005	0.003	0.003	< 0.001	0.007
UL3 - Development	**7-Aug-19**	0.008	< 0.001	< 0.001	0.06	< 0.001	0.08	0.000046	< 0.001	< 0.0009	0.0211	< 0.1	< 0.0005	0.041	0.548	0.002	< 0.003	< 0.08	< 0.0005	4.89	< 0.00005	45.8	0.641	< 0.0001	< 0.0005	0.002	0.003	< 0.001	0.035
UL3 - Development	**7-Oct-19**	0.011	< 0.001	< 0.001	0.07	< 0.001	0.08	< 0.000016	< 0.001	< 0.0009	0.0073	0.1	< 0.0005	0.044	0.599	0.002	< 0.003	< 0.08	< 0.0005	4.58	< 0.00005	43.4	0.661	< 0.0001	< 0.0005	0.002	0.003	< 0.001	0.017
UL3 - Development	**22-Jul-20**	0.005	< 0.001	< 0.001	< 0.05	< 0.001	0.09	< 0.000016	< 0.001	< 0.0009	0.0097	< 0.1	0.0009	0.043	0.549	0.002	< 0.003	-	< 0.0005	-	< 0.0001	40.9	0.643	< 0.0001	< 0.0005	0.002	0.003	-	0.027
UL3 - Development	**22-Jul-20**	0.005	< 0.001	< 0.001	< 0.05	< 0.001	0.09	0.00004	< 0.001	< 0.0009	0.0098	< 0.1	0.0009	0.043	0.554	0.002	< 0.003	-	0.0005	-	< 0.0001	41.7	0.663	< 0.0001	< 0.0005	0.001	0.003	-	0.026
UL3 - Development	**28-Oct-20**	0.017	< 0.001	< 0.001	< 0.05	< 0.001	0.05	0.000023	< 0.001	< 0.0009	0.0056	< 0.1	< 0.0005	0.025	0.564	0.001	< 0.003	-	< 0.0005	5.85	< 0.0001	46	0.418	< 0.0001	< 0.0005	0.003	0.002	0.001	0.012
UL3 - Development	**28-Oct-20**	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	-	< 0.0005	< 0.032	< 0.0001	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	0.002	< 0.005
UL3 - Development	**15-Jun-21**	< 0.004	< 0.001	< 0.001	0.05	< 0.001	0.07	< 0.000016	< 0.001	< 0.001	0.003	< 0.1	0.0007	0.053	0.288	0.001	< 0.004	< 0.08	< 0.0005	5.58	< 0.00005	50.7	0.618	< 0.0005	< 0.0005	0.004	0.003	0.001	< 0.01
UL3 - Development	**5-Oct-21**	0.044	< 0.001	0.003	< 0.05	< 0.001	0.33	0.000025	< 0.001	< 0.0009	0.0012	< 0.1	< 0.0005	0.032	< 0.005	0.008	< 0.003	0.10	0.0079	3.60	< 0.0001	290	0.058	< 0.0001	< 0.0005	0.002	0.001	0.002	0.009
UL3 - Development	**26-Jun-22**	0.091	< 0.001	0.002	< 0.05	< 0.0005	0.27	0.000038	< 0.0005	< 0.0009	< 0.0008	< 0.1	0.0004	0.030	0.515	0.008	< 0.003	< 0.08	0.0013	5.03	< 0.00005	282	0.056	< 0.0001	< 0.0005	0.005	0.001	< 0.001	0.041
Landowner 19	16-Jun-21	< 0.004	< 0.001	< 0.001	0.09	< 0.001	0.04	0.00002	< 0.001	< 0.0009	0.0055	< 0.1	< 0.0005	-	< 0.005	0.001	< 0.003	< 0.08	0.0016	-	< 0.0001	14.6	-	< 0.0001	-	0.002	0.012	-	0.012
Landowner 19	8-Oct-21	0.049	< 0.001	< 0.001	0.10	< 0.001	0.05	0.000029	< 0.001	< 0.0009	0.0072	< 0.1	< 0.0005	0.046	< 0.005	0.001	< 0.003	-	0.0046	6.32	< 0.0001	15.7	0.608	< 0.0001	< 0.0005	0.004	0.012	< 0.001	0.026
Landowner 29	17-Jun-21	0.006	< 0.001	< 0.001	0.07	< 0.001	0.08	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.7	< 0.0005	0.06	0.121	0.001	< 0.003	< 0.08	< 0.0005	6.69	< 0.0001	52	1.12	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	0.015
Landowner 29	23-Jun-22	0.010	< 0.001	< 0.001	0.07	< 0.0005	0.06	0.000016	< 0.0005	< 0.0009	0.0040	< 0.1	< 0.0001	0.051	0.123	0.001	< 0.003	0.08	< 0.0005	5.42	< 0.00005	49.6	1.11	< 0.0001	< 0.0005	0.002	< 0.001	< 0.001	0.054
Landowner 29	23-Jun-22	0.005	< 0.001	< 0.001	0.07	< 0.0005	0.06	< 0.000016	< 0.0005	< 0.0009	0.0097	< 0.1	< 0.0001	0.050	0.124	0.001	< 0.003	0.09	< 0.0005	5.41	< 0.00005	49.0	1.06	< 0.0001	< 0.0005	0.002	< 0.001	< 0.001	0.318
Landowner 29	24-Jun-22	0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.10	0.000027	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.057	0.332	0.001	< 0.003	0.10	< 0.0005	5.06	< 0.00005	105	0.854	< 0.0001	< 0.0005	0.004	0.004	< 0.001	0.010
Landowner 29	24-Sep-22	< 0.004	< 0.001	< 0.001	0.07	< 0.0005	0.08	< 0.000080	< 0.0005	< 0.0009	< 0.0008	0.6	< 0.0002	0.058	0.118	0.001	< 0.003	0.12	< 0.0025	6.11	< 0.00005	55.0	1.15	< 0.0001	< 0.0025	< 0.005	< 0.001	< 0.001	0.061
273157 (Enhance Facility Well)	15-Jun-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.11	< 0.000016	< 0.001	< 0.001	0.008	< 0.1	< 0.0002	0.095	0.039	0.002	< 0.004	< 0.08	< 0.0005	4.37	< 0.00005	226	0.26	< 0.0005	< 0.0005	0.008	< 0.001	0.001	0.03
273157 (Enhance Facility Well)	5-Oct-21	0.019	< 0.001	< 0.001	< 0.05	< 0.001	0.12	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.2	< 0.0005	0.071	0.046	0.002	< 0.003	< 0.08	0.0094	4.53	0.0002	216	0.270	< 0.0001	< 0.0005	0.001	< 0.001	< 0.001	< 0.005
273157 (Enhance Facility Well)	14-Jun-22	0.014	< 0.001	< 0.001	< 0.05	< 0.0005	0.10	< 0.000016	< 0.0005	< 0.0009	0.0041	< 0.1	0.0002	0.069	0.035	0.002	< 0.003	0.13	< 0.0005	4.34	< 0.00005	212	0.269	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	0.203
273157 (Enhance Facility Well)	19-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.10	< 0.000032	< 0.0005	< 0.0009	< 0.0008	< 0.2 0.2	0.0023	0.063	0.038	0.002	< 0.003	0.11	< 0.0010	4.90	< 0.00005	202 224	0.270	< 0.0001	< 0.0010	< 0.002	< 0.001	< 0.001	0.373
Landowner 14	6-Oct-21	< 0.004	< 0.001	< 0.001	0.06	< 0.001	0.08	< 0.000016	< 0.001	< 0.0009	< 0.0008	1.0	< 0.0005	0.064	0.200	0.001	< 0.003	< 0.08	< 0.0005	6.71	< 0.0001	75.2	0.596	< 0.0001	< 0.0005	0.002	0.001	< 0.001	0.017
Landowner 14	18-Jun-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.08	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.064	0.190	0.001	< 0.003	0.14	< 0.0005	5.98	< 0.00005	64.0	0.620	< 0.0001	< 0.0005	< 0.001	0.001	< 0.001	0.030
Landowner 14	21-Sep-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.12	< 0.000032	< 0.0005	< 0.0009	< 0.0008	1.0	< 0.0001	0.070	0.191	0.001	< 0.003	< 0.08	< 0.0010	6.13	< 0.00005	81.2	0.568	< 0.0001	< 0.0010	< 0.002	0.001	< 0.001	0.044
Landowner 26	8-Oct-21	0.006	< 0.001	< 0.001	< 0.05	< 0.001	0.11	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.6	< 0.0005	0.060	0.397	0.001	< 0.003	-	< 0.0005	6.10	< 0.0001	115.0	0.952	< 0.0001	< 0.0005	0.003	0.005	< 0.001	0.021
Landowner 26	21-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.13	< 0.000032	< 0.0005	< 0.0009	0.0019	1.6	0.0001	0.069	0.335	0.001	< 0.003	< 0.08	< 0.0010	5.29	< 0.00005	109	1.05	< 0.0001	< 0.0010	< 0.002	0.004	< 0.001	0.010

INTEGRATED SUSTAINABILITY

Table 2: Water Analytical Results: GW Dissolved Metals

Client Name: Enhance Energy **Project Manager:** Emily Guzman **Project Number:** CP22-EEI-22-00 **Date:** February 9, 2023 **Rev #:** A

Landowner ID	Date (dd-mmm-yy)	Dissolved Aluminum mg/L	Dissolved Antimony mg/L	Dissolved Arsenic mg/L	Dissolved Barium mg/L	Dissolved Beryllium mg/L	Dissolved Boron mg/L	Dissolved Cadmium mg/L	Dissolved Chromium mg/L	Dissolved Cobalt mg/L	Dissolved Copper mg/L	Dissolved Iron mg/L	Dissolved Lead mg/L	Dissolved Lithium mg/L	Dissolved Manganese mg/L	Dissolved Molybdenum mg/L	Dissolved Nickel mg/L	Dissolved Phosphorus mg/L	Dissolved Selenium mg/L	Dissolved Silicon mg/L	Dissolved Silver mg/L	Dissolved Sodium mg/L	Dissolved Strontium mg/L	Dissolved Thallium mg/L	Dissolved Tin mg/L	Dissolved Titanium mg/L	Dissolved Uranium mg/L	Dissolved Vanadium mg/L	Dissolved Zinc mg/L
Landowner 7	16-Oct-21	0.005	< 0.001	< 0.001	0.10	< 0.0005	0.06	0.000025	< 0.0005	< 0.0009	0.0037	< 0.1	0.0005	0.030	0.093	0.002	0.003	< 0.08	< 0.0005	5.97	< 0.00005	41.0	0.637	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.016
Landowner 7	16-Jun-22	0.008	< 0.001	< 0.001	0.08	< 0.0005	0.05	< 0.000016	< 0.0005	< 0.0009	0.0013	< 0.1	< 0.0001	0.026	0.124	0.002	< 0.003	0.10	< 0.0005	4.65	< 0.00005	32.2	0.557	< 0.0001	< 0.0005	0.003	0.006	< 0.001	0.016
Landowner 7	20-Sep-22	< 0.004	< 0.001	< 0.001	0.09	< 0.0005	0.07	< 0.000032	< 0.0005	< 0.0009	< 0.0008	2.8	< 0.0001	0.028	0.116	0.002	< 0.003	0.13	< 0.0010	5.79	< 0.00005	35.6	0.612	< 0.0001	< 0.0010	< 0.002	0.006	< 0.001	0.013
Landowner 11	6-Oct-21	0.007	< 0.001	< 0.001	< 0.05	< 0.001	0.11	0.000029	< 0.001	< 0.0009	0.0013	< 0.1	0.0005	0.038	0.163	0.004	< 0.003	< 0.08	< 0.0005	5.06	< 0.0001	102	0.685	< 0.0001	< 0.0005	0.003	0.003	< 0.001	0.048
Landowner 11	15-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.11	0.000022	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.037	0.119	0.001	< 0.003	0.15	0.0007	4.72	< 0.00005	95.5	0.684	< 0.0001	< 0.0005	< 0.001	0.002	< 0.001	0.036
Landowner 11	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.13	< 0.000032	< 0.0005	< 0.0009	< 0.0008	0.1	< 0.0001	0.042	0.144	0.002	< 0.003	0.12	< 0.0010	5.57	< 0.00005	108	0.679	< 0.0001	< 0.0010	< 0.002	0.002	< 0.001	0.050
Landowner 16	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.23	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.085	0.017	0.002	< 0.003	< 0.08	0.0009	4.39	< 0.0001	221	0.341	< 0.0001	< 0.0005	0.004	< 0.001	< 0.001	< 0.005
Landowner 16	16-Jun-22	0.024	< 0.001	< 0.001	< 0.05	< 0.0005	0.21	0.000033	< 0.0005	< 0.0009	0.0046	< 0.1	0.0005	0.081	0.011	0.002	< 0.003	0.09	< 0.0005	4.19	< 0.00005	183	0.326	< 0.0001	< 0.0005	0.005	< 0.001	< 0.001	0.021
Landowner 16	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.22	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.088	0.015	0.002	< 0.003	0.11	< 0.0005	4.66	< 0.00005	211	0.360	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004
Landowner 9	16-Jun-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.11	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	0.0011	-	0.007	0.005	< 0.003	< 0.08	< 0.0005	-	< 0.0001	95.3	-	< 0.0001	-	0.002	0.005	-	< 0.005
Landowner 9	16-Jun-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.1	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	0.0009	-	0.007	0.005	< 0.003	< 0.08	< 0.0005	-	< 0.0001	95	-	< 0.0001	-	0.001	0.005	-	< 0.005
Landowner 9	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.14	< 0.000016	< 0.001	< 0.0009	0.0016	< 0.1	< 0.0005	0.060	0.014	0.004	< 0.003	< 0.08	0.0105	4.15	0.0001	140	0.596	< 0.0001	< 0.0005	0.004	0.004	< 0.001	0.007
Landowner 9	15-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.13	< 0.000016	< 0.0005	< 0.0009	0.0011	< 0.1	0.0001	0.059	0.010	0.004	< 0.003	0.16	0.0011	3.60	< 0.00005	111	0.630	< 0.0001	< 0.0005	< 0.001	0.003	< 0.001	< 0.004
Landowner 9	19-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.12	< 0.000032	< 0.0005	< 0.0009	0.0020	< 0.1	< 0.0001	0.054	0.007	0.005	< 0.003	0.12	0.0013	4.15	< 0.00005	109	0.644	< 0.0001	< 0.0010	< 0.002	0.003	< 0.001	0.007
Landowner 3	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.20	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.067	0.092	0.002	< 0.003	< 0.08	< 0.0005	4.20	0.0002	246	0.401	< 0.0001	< 0.0005	0.008	< 0.001	< 0.001	0.022
Landowner 3	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.19	< 0.000016	< 0.001	< 0.0009	< 0.0008	0.1	< 0.0005	0.066	0.088	0.002	< 0.003	< 0.08	< 0.0005	4.27	0.0001	250	0.401	< 0.0001	< 0.0005	0.006	< 0.001	< 0.001	0.018
Landowner 3	17-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.16	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.083	0.296	0.002	< 0.003	< 0.08	< 0.0005	4.17	< 0.00005	159	1.19	< 0.0001	< 0.0005	< 0.001	0.002	< 0.001	0.038
Landowner 3	21-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.20	< 0.000032	< 0.0005	< 0.0009	< 0.0008	0.8	< 0.0001	0.091	0.248	0.002	< 0.003	< 0.08	< 0.0010	4.27	< 0.00005	188	1.09	< 0.0001	< 0.0010	< 0.002	0.001	< 0.001	0.038
Landowner 3	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.19	< 0.000016	< 0.001	< 0.0009	0.0044	< 0.1	< 0.0005	0.069	0.112	0.002	< 0.003	< 0.08	< 0.0005	4.33	< 0.0001	249	0.434	< 0.0001	< 0.0005	0.006	< 0.001	< 0.001	0.021
Landowner 20	14-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.19	< 0.000016	< 0.0005	< 0.0009	0.0020	< 0.1	< 0.0002	-	0.006	< 0.001	< 0.003	-	< 0.0005	-	< 0.00005	225	-	< 0.0001	-	0.003	< 0.001	-	0.008
Landowner 20	23-Jun-22	0.005	< 0.001	< 0.001	< 0.05	< 0.0005	0.21	< 0.000016	< 0.0005	< 0.0009	0.0048	< 0.1	< 0.0001	0.094	< 0.005	< 0.001	< 0.003	0.09	< 0.0005	4.67	< 0.00005	212	0.420	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	0.007
Landowner 20	21-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.24	< 0.000032	< 0.0005	< 0.0009	0.0025	< 0.1	< 0.0001	0.105	< 0.005	< 0.001	< 0.003	< 0.08	< 0.0010	4.75	< 0.00005	220	0.473	< 0.0001	< 0.0010	< 0.002	< 0.001	< 0.001	0.007
Landowner 28	8-Oct-21	0.008	< 0.001	< 0.001	0.05	< 0.001	0.04	< 0.000016	< 0.001	< 0.0009	0.0083	< 0.1	0.0009	0.041	< 0.005	0.002	< 0.003	-	< 0.0005	4.97	< 0.00005	13.2	1.12	< 0.0001	< 0.0005	0.002	0.016	< 0.001	0.076
Landowner 28	15-Jun-22	< 0.004	< 0.001	< 0.001	0.05	< 0.0005	0.03	< 0.000016	< 0.0005	< 0.0009	0.0053	< 0.1	< 0.0001	0.040	< 0.005	0.002	< 0.003	0.16	< 0.0005	4.38	< 0.00005	11.2	1.13	< 0.0001	< 0.0005	< 0.001	0.015	< 0.001	0.065
Landowner 28	19-Sep-22	< 0.004	< 0.001	< 0.001	0.05	< 0.0005	0.03	< 0.000032	< 0.0005	< 0.0009	0.0042	< 0.1	< 0.0001	0.038	< 0.005	0.002	< 0.003	0.12	< 0.0010	5.18	< 0.00005	12.2	0.953	< 0.0001	< 0.0010	< 0.002	0.013	< 0.001	0.068
Landowner 8	8-Oct-21	0.019	< 0.001	< 0.001	< 0.05	< 0.001	0.36	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.099	0.011	0.001	< 0.003	-	0.0009	3.21	< 0.0001	384.0	0.086	< 0.0001	< 0.0005	0.002	< 0.001	< 0.001	0.008
Landowner 8	15-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.31	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.088	0.007	0.002	< 0.003	0.19	< 0.0005	2.93	< 0.00005	351	0.080	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004
Landowner 8	15-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.31	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.089	0.007	0.001	< 0.003	0.18	< 0.0005	2.94	< 0.00005	353	0.081	< 0.0001	< 0.0005	< 0.001 < 0.001	< 0.001	< 0.001	< 0.004
Landowner 8	21-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.33	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.094	0.008	0.001	< 0.003	< 0.08	< 0.0005	2.93	< 0.00005	369	0.082	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004
Landowner 30	7-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.08	0.000055	< 0.001	0.0099	< 0.0008	1.6	< 0.0005	0.033	0.499	0.019	0.024	< 0.08	< 0.0005	5.66	0.0002	51.9	0.483	< 0.0001	< 0.0005	0.003	0.004	< 0.001	< 0.005
Landowner 30	18-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.06	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.022	< 0.005	0.002	< 0.003	0.16	< 0.0005	5.38	< 0.00005	164	0.002	< 0.0001	< 0.0005	< 0.001	0.004	< 0.001	0.004
Landowner 30	19-Sep-22	< 0.004	< 0.001	0.006	0.06	< 0.0005	0.07	< 0.000032	< 0.0005	0.0011	< 0.0008	1.8	< 0.0001	0.030	0.483	0.002	< 0.003	0.13	< 0.0010	5.89	< 0.00005	49.4	0.522	< 0.0001	< 0.0010	< 0.002	0.003	< 0.001	0.011
Landowner 21	14-Oct-21	0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.44	< 0.000016	< 0.0005	< 0.0009	< 0.0008	0.1	< 0.0002	0.042	0.020	0.003	< 0.003	< 0.08	0.0057	3.89	< 0.00005	273.0	0.152	< 0.0001	< 0.0005	0.001	< 0.001	< 0.001	< 0.005
Landowner 21	16-Jun-22	0.014	< 0.001	< 0.001	< 0.05	< 0.0005	0.38	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.036	0.007	0.003	< 0.003	0.12	< 0.0005	3.53	< 0.00005	245	0.139	< 0.0001	< 0.0005	0.004	< 0.001	< 0.001	0.005
Landowner 21	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.42	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.043	0.012	0.003	< 0.003	0.17	< 0.0005	3.73	< 0.00005	286	0.131	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004
Landowner 13	17-Oct-21	0.018	< 0.001	0.003	< 0.05	< 0.001	0.18	0.000029	0.002	< 0.001	< 0.001	1.3	< 0.0002	0.050	0.219	0.005	< 0.004	-	0.0012	4.34	0.00007	196.0	1.04	< 0.0005	0.0010	0.008	0.005	0.004	0.01
Landowner 13	16-Jun-22	0.005	< 0.001	< 0.001	< 0.05	< 0.0005	0.15	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.041	0.165	0.002	< 0.003	0.09	< 0.0005	4.27	< 0.00005	158	0.989	< 0.0001	< 0.0005	0.004	0.003	< 0.001	0.006
Landowner 13	21-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.16	< 0.000032	< 0.0005	< 0.0009	< 0.0008	0.3	< 0.0001	0.047	0.179	0.002	< 0.003	< 0.08	< 0.0010	4.45	< 0.00005	172	1.03	< 0.0001	< 0.0010	< 0.002	0.003	< 0.001	< 0.004
Landowner 23	6-Oct-21	< 0.004	< 0.001	< 0.001	0.24	< 0.001	0.07	0.000031	< 0.001	< 0.0009	0.0156	< 0.1	< 0.0005	0.041	< 0.005	< 0.001	< 0.003	< 0.08	0.0008	6.84	< 0.0001	31.4	0.618	< 0.0001	< 0.0005	0.003	0.007	< 0.001	0.062
Landowner 23	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.40	< 0.000016	< 0.001	< 0.0009	0.0075	< 0.1	< 0.0005	0.053	0.009	0.001	< 0.003	< 0.08	0.0014	3.39	< 0.0001	323	0.075	< 0.0001	< 0.0005	0.004	< 0.001	< 0.001	0.008
Landowner 23	16-Jun-22	0.007	< 0.001	< 0.001	< 0.05	< 0.0005	0.36	0.000019	< 0.0005	< 0.0009	0.0017	< 0.1	< 0.0001	0.048	< 0.005	0.001	< 0.003	0.13	< 0.0005	3.26	< 0.00005	277	0.070	< 0.0001	< 0.0005	0.005	< 0.001	< 0.001	0.006
Landowner 23	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.38	< 0.000016	< 0.0005	< 0.0009	0.0046	< 0.1	0.0001	0.056	0.007	0.001	< 0.003	0.18	< 0.0005	3.51	< 0.00005	317	0.078	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004
Landowner 20	6-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.38	0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.048	0.006	0.002	< 0.003	< 0.08	< 0.0005	3.48	< 0.0001	276	0.071	< 0.0001	< 0.0005	0.004	< 0.001	< 0.001	< 0.005
Landowner 20	16-Jun-22	0.006	< 0.001	< 0.001	< 0.05	< 0.0005	0.35	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.043	< 0.005	0.002	< 0.003	0.11	< 0.0005	3.25	< 0.00005	229	0.072	< 0.0001	< 0.0005	0.005	< 0.001	< 0.001	0.006
Landowner 20	23-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.37	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.052	0.005	0.002	< 0.003	0.12	< 0.0005	3.46	< 0.00005	278	0.065	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004

INTEGRATED SUSTAINABILITY

Table 2: Water Analytical Results: GW Dissolved Metals

Client Name: Enhance Energy **Project Manager:** Emily Guzman **Project Number:** CP22-EEI-22-00 **Date:** February 9, 2023 **Rev #:** A

Landowner ID	Date (dd-mmm-yy)	Dissolved Aluminum mg/L	Dissolved Antimony mg/L	Dissolved Arsenic mg/L	Dissolved Barium mg/L	Dissolved Beryllium mg/L	Dissolved Boron mg/L	Dissolved Cadmium mg/L	Dissolved Chromium mg/L	Dissolved Cobalt mg/L	Dissolved Copper mg/L	Dissolved Iron mg/L	Dissolved Lead mg/L	Dissolved Lithium mg/L	Dissolved Manganese mg/L	Dissolved Molybdenum mg/L	Dissolved Nickel mg/L	Dissolved Phosphorus mg/L	Dissolved Selenium mg/L	Dissolved Silicon mg/L	Dissolved Silver mg/L	Dissolved Sodium mg/L	Dissolved Strontium mg/L	Dissolved Thallium mg/L	Dissolved Tin mg/L	Dissolved Titanium mg/L	Dissolved Uranium mg/L	Dissolved Vanadium mg/L	Dissolved Zinc mg/L
Landowner 10	8-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.21	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.063	0.015	0.002	< 0.003	-	< 0.0005	4.43	< 0.0001	238.0	0.173	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	0.005
Landowner 10	8-Oct-21	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	0.21	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.067	0.014	0.002	< 0.003	-	0.0008	4.31	< 0.0001	244.0	0.175	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	0.007
Landowner 10	18-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.20	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.064	0.026	0.002	< 0.003	0.15	< 0.0005	3.98	< 0.00005	224	0.162	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	0.004
Landowner 10	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.21	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.069	0.026	0.002	< 0.003	0.12	< 0.0005	4.46	< 0.00005	249	0.170	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	0.005
Landowner 10	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.21	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	-	0.026	0.002	< 0.003	-	< 0.0005	-	< 0.00005	247	-	< 0.0001	-	< 0.001	< 0.001	-	0.006
Landowner 5	14-Oct-21	0.015	< 0.001	0.001	< 0.05	< 0.001	0.17	0.000023	0.002	< 0.001	0.002	< 0.1	< 0.0002	0.030	0.233	0.002	< 0.004	< 0.08	< 0.0005	4.51	< 0.00005	170	0.51	< 0.0005	< 0.0005	0.005	0.008	< 0.001	0.01
Landowner 5	16-Jun-22	0.018	< 0.001	< 0.001	< 0.05	< 0.0005	0.18	0.000031	< 0.0005	< 0.0009	0.0018	< 0.1	< 0.0001	0.029	0.190	0.002	< 0.003	0.19	< 0.0005	4.59	< 0.00005	149	0.491	< 0.0001	< 0.0005	0.004	0.008	< 0.001	0.008
Landowner 5	22-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.20	0.000043	< 0.0005	< 0.0009	0.0019	< 0.1 < 0.1	0.0001	0.035	0.207 0.207	0.002	< 0.003	0.14	< 0.0005	5.21	< 0.00005	166 166	0.518	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.011
Landowner 17	8-Oct-21	0.016	< 0.001	< 0.001	0.11	< 0.001	0.06	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	0.039	0.411	0.002	< 0.003	-	0.0155	6.09	< 0.0001	35.1	0.916	< 0.0001	< 0.0005	0.003	0.002	< 0.001	0.006
Landowner 17	18-Jun-22	< 0.004	< 0.001	< 0.001	0.11	< 0.0005	0.06	< 0.000016	< 0.0005	< 0.0009	< 0.0008	< 0.1	< 0.0001	0.040	0.334	0.002	< 0.003	0.15	< 0.0005	5.47	< 0.00005	27.2	0.970	< 0.0001	< 0.0005	< 0.001	0.003	< 0.001	0.008
Landowner 17	21-Sep-22	< 0.004	< 0.001	< 0.001	0.11	< 0.0005	0.07	< 0.000032	< 0.0005	< 0.0009	< 0.0008	0.3	< 0.0001	0.042	0.316	0.002	< 0.003	< 0.08	< 0.0010	5.60	< 0.00005	30.9	1.03	< 0.0001	< 0.0010	< 0.002	0.002	< 0.001	0.005
Landowner 32	7-Oct-21	0.006	< 0.001	< 0.001	0.08	< 0.001	0.05	< 0.000016	< 0.001	< 0.0009	0.0098	< 0.1	< 0.0005	0.088	< 0.005	0.003	< 0.003	< 0.08	0.0067	7.10	< 0.0001	40.2	1.00	< 0.0001	< 0.0005	0.002	0.028	< 0.001	0.014
Landowner 32	18-Jun-22	< 0.004	< 0.001	< 0.001	0.07	< 0.0005	0.05	< 0.000016	0.0007	< 0.0009	0.0177	< 0.1	0.0003	0.083	< 0.005	0.003	< 0.003	0.16	0.0072	6.07	< 0.00005	32.8	0.999	< 0.0001	< 0.0005	< 0.001	0.023	< 0.001	0.015
Landowner 25	14-Oct-21	< 0.004	< 0.001	< 0.001	0.07	< 0.0005	0.06	0.000016	< 0.0005	< 0.0009	0.0012	< 0.1	< 0.0002	0.045	< 0.005	0.002	< 0.003	< 0.08	< 0.0005	4.97	< 0.00005	36.2	0.819	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.027
Landowner 25	14-Oct-21	0.005	< 0.001	< 0.001	0.07	< 0.0005	0.06	< 0.000016	< 0.0005	< 0.0009	0.0013	< 0.1	< 0.0002	0.046	< 0.005	0.002	< 0.003	< 0.08	< 0.0005	4.82	< 0.00005	34.2	0.818	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.023
Landowner 25	17-Jun-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.05	0.000016	< 0.0005	< 0.0009	0.0029	< 0.1	< 0.0001	0.038	< 0.005	0.002	< 0.003	0.09	0.0016	4.65	< 0.00005	29.3	0.835	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.035
Landowner 25	17-Jun-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.05	0.000017	< 0.0005	< 0.0009	0.0029	< 0.1	0.0001	0.040	< 0.005	0.002	< 0.003	< 0.08	0.0016	4.66	< 0.00005	29.7	0.831	< 0.0001	< 0.0005	< 0.001	0.008	< 0.001	0.034
Landowner 25	20-Sep-22	< 0.004	< 0.001	< 0.001	0.06	< 0.0005	0.06	< 0.000032	< 0.0005	< 0.0009	0.0029	< 0.1	< 0.0001	0.047	< 0.005	0.002	< 0.003	0.12	0.0018	5.37	< 0.00005	33.5	0.889	< 0.0001	< 0.0010	< 0.002	0.008	< 0.001	0.056
Landowner 18	16-Oct-21	0.004	< 0.001	< 0.001	0.08	< 0.0005	0.07	0.000023	< 0.0005	< 0.0009	0.0031	< 0.1	< 0.0002	0.034	0.157	0.004	< 0.003	< 0.08	< 0.0005	5.24	< 0.00005	48.9	1.41	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	0.012
Landowner 18	15-Jun-22	< 0.004	< 0.001	< 0.001	0.08	< 0.0005	0.07	< 0.000016	< 0.0005	< 0.0009	0.0016	0.1	< 0.0001	0.030	0.142	0.004	< 0.003	0.15	< 0.0005	4.38	< 0.00005	40.2	1.36	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	0.009
Landowner 18	19-Sep-22	0.008	< 0.001	< 0.001	0.08	< 0.0005	0.07	< 0.000080	< 0.0005	< 0.0009	< 0.0008	0.3	< 0.0002	0.027	0.130	0.004	< 0.003	0.13	< 0.0025	5.14	< 0.00005	44.9	1.21	< 0.0001	< 0.0025	< 0.005	< 0.001	< 0.001	< 0.005
Landowner 6	17-Jun-21	< 0.004	< 0.001	< 0.001	0.12	< 0.001	0.04	0.000027	< 0.001	< 0.0009	0.0036	< 0.1	< 0.0005	0.05	< 0.005	0.001	< 0.003	< 0.08	< 0.005	6.97	< 0.0001	19.6	0.537	< 0.0001	< 0.0005	0.003	0.008	< 0.001	0.018
Landowner 6	4-Oct-21	0.006	< 0.001	< 0.001	0.11	< 0.001	0.03	0.000023	< 0.001	< 0.0009	0.0035	< 0.1	< 0.0005	0.043	< 0.005	0.001	< 0.003	< 0.08	0.0136	6.00	0.0001	19.3	0.553	< 0.0001	< 0.0005	0.001	0.008	< 0.001	0.015
Landowner 6	14-Jun-22	< 0.004	< 0.001	< 0.001	0.14	< 0.0005	0.04	0.000023	< 0.0005	< 0.0009	0.0052	< 0.1	< 0.0002	0.046	< 0.005	0.001	< 0.003	< 0.08	0.0010	5.78	0.00010	18.5	0.598	< 0.0001	< 0.0005	0.006	0.009	< 0.001	0.026
Landowner 6	19-Sep-22	< 0.004	< 0.001	< 0.001	0.13	< 0.0005	0.04	< 0.000032	< 0.0005	< 0.0009	0.0028	< 0.1 < 0.1	< 0.0001	0.042	< 0.005 < 0.005	0.001	< 0.003	0.15	0.0016	7.12	< 0.00005	20.3 20.3	0.573	< 0.0001	< 0.0010	< 0.002	0.010	< 0.001	0.007
Landowner 22	7-Oct-21	0.007	< 0.001	< 0.001	< 0.05	< 0.001	0.34	< 0.000016	< 0.001	< 0.0009	0.0040	< 0.1	0.0007	0.053	< 0.005	0.002	< 0.003	< 0.08	< 0.0005	3.46	< 0.0001	279	0.044	< 0.0001	< 0.0005	0.003	< 0.001	< 0.001	< 0.005
Landowner 22	15-Jun-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.34	< 0.000016	< 0.0005	< 0.0009	0.0114	< 0.1	0.0007	0.043	< 0.005	0.004	< 0.003	0.18	< 0.0005	2.94	< 0.00005	244	0.043	< 0.0001	< 0.0005	0.001	< 0.001	< 0.001	< 0.004
Landowner 22	20-Sep-22	< 0.004	< 0.001	< 0.001	< 0.05	< 0.0005	0.36	< 0.000016	< 0.0005	< 0.0009	0.0117	< 0.1	0.0007	0.050	< 0.005	0.004	< 0.003	0.17	< 0.0005	3.23	< 0.00005	271	0.046	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.004
12-25-039-24W4	17-Oct-21	0.012	< 0.001	0.002	0.07	< 0.001	0.13	0.000059	0.002	< 0.001	0.001	< 0.1	< 0.0002	0.134	0.019	< 0.001	0.004	0.08	0.0017	10.66	0.00005	77.2	1.78	< 0.0005	0.0008	0.011	0.029	0.003	0.06
12-25-039-24W4	18-Jun-22	< 0.004	< 0.001	< 0.001	0.07	< 0.0005	0.08	0.000033	< 0.0005	< 0.0009	0.0017	< 0.1	< 0.0001	0.112	< 0.005	0.001	< 0.003	0.16	< 0.0005	8.51	< 0.00005	57.8	1.38	< 0.0001	< 0.0005	< 0.001	0.024	< 0.001	0.007 0.007
12-25-039-24W4	18-Jun-22	0.004	< 0.001	< 0.001	0.07	< 0.0005	0.09	0.000051	< 0.0005	< 0.0009	0.0018	< 0.1	< 0.0001	0.114	< 0.005	0.001	< 0.003	0.17	< 0.0005	8.52	< 0.00005	57.3	1.40	< 0.0001	< 0.0005	< 0.001	0.023	< 0.001	0.008
12-25-039-24W4	20-Sep-22	< 0.004	< 0.001	< 0.001	0.09	< 0.0005	0.12	< 0.000080	< 0.0005	< 0.0009	0.0018	< 0.1	< 0.0002	0.126	< 0.005	0.002	< 0.003	0.15	< 0.0025	10.6	< 0.00005	67.3	1.30	< 0.0001	< 0.0025	< 0.005	0.020	< 0.001	< 0.005
Field Blank	9-Oct-19	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	< 0.08	< 0.0005	< 0.032	< 0.00005	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.005
	9-Oct-19	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	< 0.08	< 0.0005	< 0.032	< 0.00005	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.005
	22-Jul-20	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	0.000027	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	-	< 0.0005	-	< 0.0001	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	-	< 0.005
	28-Oct-20	< 0.004	< 0.001	< 0.001	< 0.05	< 0.001	< 0.01	< 0.000016	< 0.001	< 0.0009	< 0.0008	< 0.1	< 0.0005	< 0.001	< 0.005	< 0.001	< 0.003	-	< 0.0005	< 0.032	< 0.0001	< 0.6	< 0.001	< 0.0001	< 0.0005	< 0.001	< 0.001	< 0.001	< 0.005

Table 3: Water Analytical Results: Isotopic Abundance

INTEGRATED SUSTAINABILITY

Client Name: Enhance Energy Inc.
Project Number: CP22-EEI-01-00

Date: February 9, 2023
Rev: A

		Groundwater Isotopes	Free Gas Isotopes			
Landowner ID	Date	d13C DIC	d13C-CH4	d13C-CO2	d18O-BaSO4	d34S
Landowner 2	8-Aug-19	-	-	-	-	-
Landowner 2	9-Oct-19	-	-	-	-	-
Landowner 2	7-Oct-21	-12.5	-	-	-	-
Landowner 2	7-Oct-21	-12.2	-	-	-	-
Landowner 2	15-Jun-22	-11.9	-	-	-	-
Landowner 2	20-Sep-22	-12.7	-	-	-	-
Landowner 12	8-Aug-19	-	-	-	-	-
Landowner 12	8-Oct-19	-	-	-	-	-
Landowner 12	7-Aug-19	-	-	-	-	-
Landowner 12	7-Aug-19	-	-	-	-	-
Landowner 1	9-Oct-19	-	-	-	-	-
Landowner 1	7-Oct-21	-12.6	-	-	-	-
Landowner 1	17-Jun-22	-	-	-19.61	-	-
Landowner 1	17-Jun-22	-	-	-	-	-
Landowner 1	29-Jun-22	-	-	-21.7	-	-
Landowner 1	19-Sep-22	-	-	-	-	-0.3
Landowner 1	10-Oct-22	-	-67.8	-20.6	-	-
Landowner 25	7-Aug-19	-	-	-	-	-
Landowner 25	9-Oct-19	-	-	-	-	-
Landowner 25	6-Oct-21	-12.2	-	-	-	-
Landowner 33	7-Aug-19	-	-	-	-	-
Landowner 33	8-Oct-19	-	-	-	-	-
Landowner 33	8-Oct-19	-	-	-	-	-
Landowner 33	16-Jun-21	-	-	-	-	-
Landowner 33	7-Oct-21	-13.1	-	-	-	-
Landowner 33	15-Jun-22	-13.3	-	-	-	-
Landowner 33	21-Sep-22	-12.9	-	-	-	-
Landowner 33	10-Oct-22	-	-	-21.6	-	-
Landowner 33	15-Jun-22	-12.4	-	-	-	-
Landowner 27	9-Aug-19	-	-	-	-	-
Landowner 27	9-Aug-19	-	-	-	-	-
Landowner 27	9-Aug-19	-	-	-	-	-
Landowner 27	8-Oct-19	-	-	-	-	-
Landowner 4	8-Aug-19	-	-	-	-	-
Landowner 4	8-Oct-19	-	-	-	-	-
Landowner 4	8-Oct-21	-12.6	-	-	-9.2	-5.2
Landowner 4	18-Jun-22	-12.7	-	-	-	-
Landowner 4	29-Jun-22	-	-	-22.2	-	-
Landowner 4	19-Sep-22	-13.3	-	-	-	-5.3
Landowner 31	8-Aug-19	-	-	-	-	-
Landowner 31	8-Oct-21	-13	-	-	-1.6	0.7
Landowner 31	17-Jun-22	-12.5	-	-	-	-
Landowner 31	29-Jun-22	-	-	-22.2	-	-
Landowner 31	19-Sep-22	-13.1	-	-	-	0.5
Landowner 31	19-Sep-22	-13.0	-	-	-	0.6

Table 3: Water Analytical Results: Isotopic Abundance

INTEGRATED SUSTAINABILITY

Client Name: Enhance Energy Inc.
Project Number: CP22-EEI-01-00

Date: February 9, 2023
Rev: A

Landowner ID	Date	Groundwater Isotopes	Free Gas Isotopes			
		d13C DIC	d13C-CH4	d13C-CO2	d18O-BaSO4	d34S
Landowner 24	8-Aug-19	-	-	-	-	-
Landowner 24	7-Oct-21	-12.8	-	-	-	-
Landowner 24	8-Oct-21	-	-	-	0.3	1
Landowner 24	17-Jun-22	-	-	0	-	-
Landowner 24	17-Jun-22	-14.1	-	-	-	-
Landowner 24	29-Jun-22	-	-88.8	-	-	-
Landowner 24	10-Oct-22	-	-40.7	-13.3	-	-
UL1 - Development	11-Jul-19	-	-	-	-	-
UL1 - Development	15-Jul-19	-	-	-	-	-
UL1 - Development	15-Jul-19	-	-	-	-	-
UL1 - Development	6-Aug-19	-	-	-	-	-
UL1 - Development	6-Aug-19	-	-	-	-	-
UL1 - Development	7-Oct-19	-	-	-	-	-
UL1 - Development	7-Oct-19	-	-	-	-	-
UL1 - Development	21-Jul-20	-	-	-	-	-
UL1 - Development	21-Jul-20	-	-	-	-	-
UL1 - Development	28-Oct-20	-	-	-	-	-
UL1 - Development	28-Oct-20	-	-	-	-	-
UL1 - Development	15-Jun-21	-	-	-	-	-
UL1 - Development	5-Oct-21	-12.8	-	-	-	-
UL1 - Development	26-Jun-22	-12.8	-	-	-	-
UL2 - Development	7-Aug-19	-	-	-	-	-
UL2 - Development	7-Oct-19	-	-	-	-	-
UL2 - Development	22-Jul-20	-	-	-	-	-
UL2 - Development	22-Jul-20	-	-	-	-	-
UL2 - Development	27-Oct-20	-	-	-	-	-
UL2 - Development	15-Jun-21	0.410	-	-	-	-
UL2 - Development	5-Oct-21	-12.4	-	-	-	-
UL2 - Development	26-Jun-22	-12.7	-	-	-	-
UL3 - Development	7-Aug-19	-	-	-	-	-
UL3 - Development	7-Oct-19	-	-	-	-	-
UL3 - Development	22-Jul-20	-	-	-	-	-
UL3 - Development	22-Jul-20	-	-	-	-	-
UL3 - Development	28-Oct-20	-	-	-	-	-
UL3 - Development	28-Oct-20	-	-	-	-	-
UL3 - Development	15-Jun-21	-	-	-	-	-
UL3 - Development	5-Oct-21	-15.8	-	-	-	-
UL3 - Development	26-Jun-22	-15.0	-	-	-	-
Landowner 19	16-Jun-21	-	-	-	-	-
Landowner 19	8-Oct-21	-13.4	-	-	-	-
Landowner 29	17-Jun-21	0.595	-	-	-	-
Landowner 29	23-Jun-22	-12.2	-	-	-	-
Landowner 29	23-Jun-22	-12.2	-	-	-	-
Landowner 29	24-Jun-22	-13.3	-	-20.49	-	-
Landowner 29	24-Sep-22	-11.9	-	-	-	-
273157 (Enhance Facility Well)	15-Jun-21	0.503	-	-	-	-
273157 (Enhance Facility Well)	5-Oct-21	-12.2	-	-	-	-
273157 (Enhance Facility Well)	14-Jun-22	-12.1	-	-	-	-
273157 (Enhance Facility Well)	19-Sep-22	-12.6	-	-	-	-

INTEGRATED SUSTAINABILITY

Table 3: Water Analytical Results: Isotopic Abundance

Client Name: Enhance Energy Inc.
Project Number: CP22-EEI-01-00

Date: February 9, 2023
Rev: A

		Groundwater Isotopes	Free Gas Isotopes			
Landowner ID	Date	d13C DIC	d13C-CH4	d13C-CO2	d18O-BaSO4	d34S
Landowner 14	6-Oct-21	-12.7	-	-	-	-
Landowner 14	18-Jun-22	-12.9	-	-	-	-
Landowner 14	21-Sep-22	-13.0	-	-	-	-
Landowner 26	8-Oct-21	-12.6	-	-	-4	-1.6
Landowner 26	21-Sep-22	-13.1	-	-	-	-
Landowner 7	16-Oct-21	-11.9	-	-	-	-
Landowner 7	16-Jun-22	-12.3	-	-	-	-
Landowner 7	20-Sep-22	-13.0	-	-	-	-
Landowner 11	6-Oct-21	-12.4	-	-	-	-
Landowner 11	15-Jun-22	-	-	-12.1	-	-
Landowner 11	15-Jun-22	-12.1	-	-	-	-
Landowner 11	20-Sep-22	-12.4	-	-	-	-
Landowner 16	6-Oct-21	-13	-	-	-	-
Landowner 16	16-Jun-22	-12.8	-	-	-	-
Landowner 16	20-Sep-22	-	-	-	-	-
Landowner 9	16-Jun-21	0.580	-	-	-	-
Landowner 9	16-Jun-21	0.588	-	-	-	-
Landowner 9	6-Oct-21	-12.6	-	-	-	-
Landowner 9	15-Jun-22	-12.5	-	-	-	-
Landowner 9	19-Sep-22	-12.7	-	-	-	-
Landowner 3	6-Oct-21	-11.8	-	-	-	-
Landowner 3	6-Oct-21	-11.8	-	-	-	-
Landowner 3	17-Jun-22	-	-	-12.4	-	-
Landowner 3	17-Jun-22	-	-	-	-	-
Landowner 3	21-Sep-22	-12.5	-	-	-	-4.1
Landowner 3	6-Oct-21	-11.9	-	-	-	-
Landowner 20	14-Oct-21	-13.7	-	-	-	-
Landowner 20	23-Jun-22	-13.4	-	-	-	-
Landowner 20	21-Sep-22	-13.9	-	-	-	-
Landowner 28	8-Oct-21	-12.3	-	-	-	-
Landowner 28	15-Jun-22	-11.8	-	-	-	-
Landowner 28	19-Sep-22	-12.5	-	-	-	0.8
Landowner 8	8-Oct-21	-12.6	-	-	-	-
Landowner 8	15-Jun-22	-12.6	-	-	-	-
Landowner 8	15-Jun-22	-12.6	-	-	-	-
Landowner 8	21-Sep-22	-12.9	-	-	-	-8.3
Landowner 30	7-Oct-21	-11.9	-	-	-	-
Landowner 30	18-Jun-22	-	-	-19.22	-	-
Landowner 30	18-Jun-22	-12.3	-	-	-	-
Landowner 30	29-Jun-22	-	-	-21.7	-	-
Landowner 30	19-Sep-22	-12.5	-	-	-	-
Landowner 21	14-Oct-21	-13.7	-	-	-	-
Landowner 21	16-Jun-22	-13.2	-	-	-	-
Landowner 21	20-Sep-22	-13.6	-	-	-	-
Landowner 13	17-Oct-21	-12.6	-	-	-	-
Landowner 13	16-Jun-22	-12.3	-	-	-	-
Landowner 13	21-Sep-22	-12.6	-	-	-	-

Table 3: Water Analytical Results: Isotopic Abundance

Client Name: Enhance Energy Inc.
Project Number: CP22-EEI-01-00

Date: February 9, 2023
Rev: A

		Groundwater Isotopes	Free Gas Isotopes			
Landowner ID	Date	d13C DIC	d13C-CH4	d13C-CO2	d18O-BaSO4	d34S
Landowner 23	6-Oct-21	-12.9	-	-	-	-
Landowner 23	6-Oct-21	-	-	-	-	-
Landowner 23	16-Jun-22	-12.1	-	-	-	-
Landowner 23	20-Sep-22	-12.5	-	-	-	-
Landowner 20	6-Oct-21	-12.6	-	-	-	-
Landowner 20	8-Oct-21	-12.3	-	-	-	-
Landowner 20	16-Jun-22	-12.2	-	-	-	-
Landowner 20	23-Sep-22	-12.6	-	-	-	1.5
Landowner 10	8-Oct-21	-12.2	-	-	-	-
Landowner 10	18-Jun-22	-11.9	-	-	-	-
Landowner 10	29-Jun-22	-	-	-20.9	-	-
Landowner 10	20-Sep-22	-12.4	-	-	-	-4.4
Landowner 5	14-Oct-21	-12.5	-	-	-	-
Landowner 5	16-Jun-22	-12.6	-	-	-	-
Landowner 5	22-Sep-22	-12.8	-	-	-	-9.6
Landowner 5	10-Oct-22	-	-87.1	-20.9	-	-
Landowner 17	8-Oct-21	-12.2	-	-	-	-
Landowner 17	18-Jun-22	-12.0	-	-	-	-
Landowner 17	21-Sep-22	-12.2	-	-	-	-
Landowner 32	7-Oct-21	-12.1	-	-	-	-
Landowner 32	18-Jun-22	-11.6	-	-	-	-
Landowner 25	14-Oct-21	-12	-	-	-	-
Landowner 25	14-Oct-21	-12	-	-	-	-
Landowner 25	17-Jun-22	-12.4	-	-	-	-
Landowner 25	17-Jun-22	-12.2	-	-	-	-
Landowner 25	20-Sep-22	-12.6	-	-	-	0.1
Landowner 18	16-Oct-21	-12.4	-	-	-	-
Landowner 18	15-Jun-22	-12.4	-	-	-	-
Landowner 18	19-Sep-22	-12.5	-	-	-	-
Landowner 6	17-Jun-21	0.571	-	-	-	-
Landowner 6	4-Oct-21	-12.3	-	-	-	-
Landowner 6	14-Jun-22	-12.5	-	-	-	-
Landowner 6	19-Sep-22	-13.6	-	-	-	2.2
Landowner 22	7-Oct-21	-12	-	-	-	-
Landowner 22	15-Jun-22	-11.1	-	-	-	-
Landowner 22	20-Sep-22	-	-	-	-	-

INTEGRATED SUSTAINABILITY

Table 4: Water Analytical Results: Microbiology Parameters

Client Name: Enhance Energy Inc. **Date** February 9, 2023
Project: CP22-EEI-01-00 **Rev:** A

		Bacteria					
Landowner ID	Date (dd-mmm-yy)	IRB Approximate Population Count cfu/ml	Iron Related Bacteria None	Sulfate Reducing Bacteria None	Sulfate Reducing Bacteria Count cfu/ml	Slime Forming Bacteria cfu/ml	Slime Forming Bacteria (Aggressivity) None
Landowner 2	8-Aug-19	2200	Present	Absent	< 1	-	-
Landowner 2	9-Oct-19	-	-	-	-	-	-
Landowner 2	7-Oct-21	9000	-	< 1	-	2500	Medium
Landowner 2	7-Oct-21	< 1	-	< 1	-	500	Medium
Landowner 2	15-Jun-22	-	-	-	-	-	-
Landowner 2	20-Sep-22	500	-	-	< 1	500	-
Landowner 12	8-Aug-19	< 1	Absent	Present	20	-	-
Landowner 12	8-Oct-19	-	-	-	-	-	-
Landowner 1	7-Aug-19	9000	Present	Absent	< 1	-	-
Landowner 1	7-Aug-19	9000	Present	Absent	< 1	-	-
Landowner 1	9-Oct-19	-	-	-	-	-	-
Landowner 1	7-Oct-21	2200	-	< 1	-	13000	Medium
Landowner 1	17-Jun-22	2200	-	75	75	-	-
Landowner 1	19-Sep-22	2200	2200	5	5	67000	-
Landowner 25	7-Aug-19	25	Present	Absent	< 1	-	-
Landowner 25	6-Oct-21	2200	-	< 1	-	< 20	Low
Landowner 33	7-Aug-19	150	Present	Absent	< 1	-	-
Landowner 33	8-Oct-19	-	-	-	-	-	-
Landowner 33	8-Oct-19	-	-	-	-	-	-
Landowner 33	16-Jun-21	-	-	-	-	2500	-
Landowner 33	7-Oct-21	2200	-	< 1	-	13000	Medium
Landowner 33	15-Jun-22	2200	2200	< 1	< 1	< 1	-
Landowner 33	21-Sep-22	2200	-	-	< 1	67000	-
Landowner 33	15-Jun-22	2200	2200	< 1	< 1	< 1	-
Landowner 27	9-Aug-19	2200	Present	Present	20	-	-
Landowner 27	9-Aug-19	< 1	Absent	Absent	< 1	-	-
Landowner 27	9-Aug-19	< 1	Absent	Absent	< 1	-	-
Landowner 27	8-Oct-19	-	-	-	-	-	-
Landowner 4	8-Aug-19	2200	Present	Present	5	-	-
Landowner 4	8-Oct-19	-	-	-	-	-	-
Landowner 4	8-Oct-21	2200	-	325	-	440000	High
Landowner 4	18-Jun-22	-	2200	< 1	-	-	-
Landowner 4	19-Sep-22	9000	-	-	< 1	67000	-
Landowner 31	8-Aug-19	500	Present	Present	20	-	-
Landowner 31	8-Oct-21	500	-	< 1	-	440000	High
Landowner 31	17-Jun-22	< 1	-	5	5	100	-
Landowner 31	19-Sep-22	500	-	-	< 1	2500	-
Landowner 31	19-Sep-22	< 1	-	-	< 1	2500	-

Table 4: Water Analytical Results: Microbiology Parameters

INTEGRATED SUSTAINABILITY

Client Name: Enhance Energy Inc. **Date** February 9, 2023
Project: CP22-EEI-01-00 **Rev:** A

		Bacteria					
Landowner ID	Date	IRB Approximate Population Count	Iron Related Bacteria	Sulfate Reducing Bacteria	Sulfate Reducing Bacteria Count	Slime Forming Bacteria	Slime Forming Bacteria (Aggressivity)
	(dd-mmm-yy)	cfu/ml	None	None	cfu/ml	cfu/ml	None
Landowner 24	8-Aug-19	150	Present	Present	5	-	-
Landowner 24	7-Oct-21	< 1	-	5	-	2500	Medium
Landowner 24	8-Oct-21	-	-	-	-	-	-
Landowner 24	17-Jun-22	-	-	20	-	-	-
Landowner 24	29-Jun-22	-	-	-	-	-	-
Landowner 24	10-Oct-22	-	-	-	-	-	-
UL1 - Development	11-Jul-19	9000	Present	Absent	< 1	-	-
UL1 - Development	15-Jul-19	9000	Present	Present	5	-	-
UL1 - Development	15-Jul-19	9000	Present	Present	5	-	-
UL1 - Development	6-Aug-19	35000	Present	Present	115000	-	-
UL1 - Development	6-Aug-19	35000	Present	Present	115000	-	-
UL1 - Development	7-Oct-19	-	-	-	-	-	-
UL1 - Development	7-Oct-19	-	-	-	-	-	-
UL1 - Development	21-Jul-20	9000	-	-	115000	-	-
UL1 - Development	21-Jul-20	-	-	-	-	-	-
UL1 - Development	28-Oct-20	9000	Present	Present	27000	-	-
UL1 - Development	28-Oct-20	9000	Present	Present	27000	-	-
UL1 - Development	15-Jun-21	-	-	-	-	-	-
UL1 - Development	5-Oct-21	2200	-	325	-	440000	High
UL1 - Development	26-Jun-22	2200	2200	6000	6000	-	-
UL2 - Development	7-Aug-19	9000	Present	Present	1400	-	-
UL2 - Development	7-Oct-19	-	-	-	-	-	-
UL2 - Development	22-Jul-20	9000	-	-	27000	-	-
UL2 - Development	22-Jul-20	2200	-	-	< 1	-	-
UL2 - Development	27-Oct-20	2200	Present	Absent	< 1	-	-
UL2 - Development	15-Jun-21	-	-	-	-	-	-
UL2 - Development	5-Oct-21	2200	-	115000	-	440000	High
UL2 - Development	26-Jun-22	2200	2200	6000	6000	-	-
UL3 - Development	7-Aug-19	9000	Present	Present	1400	-	-
UL3 - Development	7-Oct-19	-	-	-	-	-	-
UL3 - Development	22-Jul-20	9000	-	-	115000	-	-
UL3 - Development	22-Jul-20	9000	-	-	115000	-	-
UL3 - Development	28-Oct-20	2200	Present	Present	5	-	-
UL3 - Development	28-Oct-20	150	Present	Absent	< 1	-	-
UL3 - Development	15-Jun-21	-	-	-	-	-	-
UL3 - Development	5-Oct-21	< 1	-	< 1	-	67000	High
UL3 - Development	26-Jun-22	9000	9000	11500	11500	-	-
Landowner 19	16-Jun-21	-	-	-	-	2500	-
Landowner 19	8-Oct-21	2200	-	< 1	-	440000	High

Table 4: Water Analytical Results: Microbiology Parameters

INTEGRATED SUSTAINABILITY

Client Name: Enhance Energy Inc. **Date** February 9, 2023
Project: CP22-EEI-01-00 **Rev:** A

Landowner ID	Date	Bacteria					
		IRB Approximate Population Count	Iron Related Bacteria	Sulfate Reducing Bacteria	Sulfate Reducing Bacteria Count	Slime Forming Bacteria	Slime Forming Bacteria (Aggressivity)
	(dd-mmm-yy)	cfu/ml	None	None	cfu/ml	cfu/ml	None
Landowner 29	17-Jun-21	-	-	-	-	13000	-
Landowner 29	23-Jun-22	2200	2200	< 1	< 1	-	-
Landowner 29	23-Jun-22	2200	2200	325	325	-	-
Landowner 29	24-Jun-22	2200	-	-	325	-	-
Landowner 29	24-Sep-22	2200	-	-	< 1	100	-
273157 (Enhance Facility Well)	15-Jun-21	-	-	-	-	-	-
273157 (Enhance Facility Well)	5-Oct-21	< 1	-	< 1	-	100	Low
273157 (Enhance Facility Well)	14-Jun-22	-	-	-	-	-	-
273157 (Enhance Facility Well)	19-Sep-22	500	-	-	-	2500	-
Landowner 14	6-Oct-21	25	-	< 1	-	2500	Medium
Landowner 14	21-Sep-22	2200	-	-	< 1	500	-
Landowner 26	8-Oct-21	2200	-	< 1	-	440000	High
Landowner 26	21-Sep-22	2200	-	-	< 1	13000	-
Landowner 7	16-Oct-21	500	-	< 1	-	67000	High
Landowner 7	16-Jun-22	-	-	-	-	-	-
Landowner 7	20-Sep-22	2200	-	-	< 1	2500	-
Landowner 11	6-Oct-21	2200	-	< 1	-	2500	Medium
Landowner 11	20-Sep-22	2200	-	-	< 1	67000	-
Landowner 16	6-Oct-21	9000	-	< 1	-	2500	Medium
Landowner 16	16-Jun-22	9000	-	-	< 1	< 1	-
Landowner 16	20-Sep-22	2200	-	-	< 1	500	-
Landowner 9	16-Jun-21	-	-	-	-	0	-
Landowner 9	16-Jun-21	-	-	-	-	0	-
Landowner 9	6-Oct-21	500	-	< 1	-	2500	Medium
Landowner 9	19-Sep-22	2200	-	-	< 1	13000	-
Landowner 3	6-Oct-21	500	-	< 1	-	2500	Medium
Landowner 3	6-Oct-21	2200	-	< 1	-	13000	Medium
Landowner 3	17-Jun-22	-	-	5	-	-	-
Landowner 3	21-Sep-22	2200	-	-	< 1	2200	-
Landowner 3	6-Oct-21	500	-	< 1	-	67000	High
Landowner 20	14-Oct-21	2200	-	< 1	-	67000	High
Landowner 20	21-Sep-22	2200	-	-	< 1	500	-
Landowner 28	8-Oct-21	2200	-	< 1	-	440000	High
Landowner 28	15-Jun-22	-	-	-	-	-	-
Landowner 28	19-Sep-22	2200	-	-	< 1	2500	-
Landowner 8	8-Oct-21	2200	-	5	-	440000	High
Landowner 8	15-Jun-22	-	-	-	-	-	-
Landowner 8	15-Jun-22	-	-	-	-	-	-
Landowner 8	21-Sep-22	9000	-	-	< 1	67000	-
Landowner 30	7-Oct-21	< 1	-	< 1	-	2500	Medium
Landowner 30	18-Jun-22	25	-	< 1	< 1	-	-
Landowner 30	19-Sep-22	< 1	-	-	< 1	20	-

INTEGRATED SUSTAINABILITY

Table 4: Water Analytical Results: Microbiology Parameters

Client Name: Enhance Energy Inc. **Date** February 9, 2023
Project: CP22-EEI-01-00 **Rev:** A

		Bacteria					
Landowner ID	Date (dd-mmm-yy)	IRB Approximate Population Count cfu/ml	Iron Related Bacteria None	Sulfate Reducing Bacteria None	Sulfate Reducing Bacteria Count cfu/ml	Slime Forming Bacteria cfu/ml	Slime Forming Bacteria (Aggressivity) None
Landowner 21	14-Oct-21	500	-	< 1	-	67000	High
Landowner 21	20-Sep-22	2200	-	-	< 1	67000	-
Landowner 13	17-Oct-21	500	-	115000	-	67000	High
Landowner 13	21-Sep-22	500	-	-	< 1	< 1	-
Landowner 23	6-Oct-21	9000	-	< 1	-	13000	Medium
Landowner 23	6-Oct-21	9000	-	< 1	-	< 20	Low
Landowner 23	20-Sep-22	2200	-	-	< 1	2500	-
Landowner 20	6-Oct-21	9000	-	< 1	-	2500	Medium
Landowner 20	8-Oct-21	500	-	< 1	-	440000	High
Landowner 20	16-Jun-22	500	500	< 1.0	< 1	-	-
Landowner 20	23-Sep-22	2200	-	-	< 1	100	-
Landowner 10	8-Oct-21	9000	-	< 1	-	440000	High
Landowner 10	20-Sep-22	2200	-	-	< 1	13000	-
Landowner 5	14-Oct-21	2200	-	75	-	440000	High
Landowner 5	16-Jun-22	500	500	75	75	< 1	-
Landowner 5	22-Sep-22	2200	2200	115000	115000	67000	-
Landowner 5	10-Oct-22	-	-	-	-	-	-
Landowner 17	8-Oct-21	2200	-	< 1	-	67000	High
Landowner 17	18-Jun-22	-	-	-	-	-	-
Landowner 17	21-Sep-22	9000	-	-	< 1	2500	-
Landowner 32	7-Oct-21	9000	-	< 1	-	13000	Medium
Landowner 32	18-Jun-22	-	-	-	-	-	-
Landowner 25	14-Oct-21	500	-	< 1	-	67000	High
Landowner 25	14-Oct-21	2200	-	< 1	-	67000	High
Landowner 25	17-Jun-22	500	-	-	-	< 1	-
Landowner 25	17-Jun-22	500	-	-	-	100	-
Landowner 25	20-Sep-22	< 1	-	-	< 1	500	-
Landowner 18	16-Oct-21	2200	-	< 1	-	67000	High
Landowner 18	19-Sep-22	500	-	-	< 1	2500	-
Landowner 6	17-Jun-21	-	-	-	-	13000	-
Landowner 6	4-Oct-21	2200	-	20	-	440000	High
Landowner 6	14-Jun-22	-	2200	1400	-	< 1	-
Landowner 6	19-Sep-22	-	2200	115000	-	67000	-
Landowner 22	7-Oct-21	2200	-	< 1	-	500	Medium
Landowner 22	20-Sep-22	2200	-	-	< 1	500	-
12-25-039-24W4	17-Oct-21	500	-	115000	-	4400000	High
12-25-039-24W4	20-Sep-22	9000	-	-	1400	4400000	-

INTEGRATED SUSTAINABILITY

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date (dd-mmm-yy)	CH4 ppm	CO2 ppm	Carbon Dioxide (CO2) -BA ppmv	Carbon Monoxide (CO) - BA ppmv	Methane - BA ppmv	Nitrogen (N2) - BA ppmv	Oxygen (O2) - BA ppmv	vHH - BA ppmv	vNMH - BA ppmv	2,2,4-Trimethylpentane ppm	Benzene ppm	Cyclohexane ppm	Cyclopentane ppm	Ethylbenzene ppm	Methylcyclohexane ppm	Toluene ppm	Xylenes ppm	d13C-C1 ‰	d13C-C2 ‰	d13C-C3 ‰	d13C-CH4 ‰	d13C-CO2 ‰	d13C-iC4 ‰	d13C-nC4 ‰	14C in CO2 yr BP	14C-CH4 yr BP	del14C in CO2 ‰	del14C-CH4 ‰	F14C in CO2 None	F14C-CH4 None	Normalised 14C in CH4 ‰	Normalised 14C in CO2 ‰
North Data																																	
01-02-040-24W4	7-Aug-19	0.767885	84486.5	67200		1			< 1	1													-9.2			303.7354719		-45.099686		0.962894943			
01-02-040-24W4	9-Oct-19	0.263422	65301.4	55900	< 2	< 1	770000	150000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
01-02-040-24W4	27-Jun-21	< 1000	5500	427	< 2	2	780000	220000	< 1	3	< 10	< 10	< 10	< 10	< 10	12.3	26.4	< 10					-18.7							0.937751558			
01-02-040-24W4	13-Oct-21	1.06445	17813.5	17200	< 2	2	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
01-02-040-24W4	18-Jun-22	0.52045	25209.025	18200	< 2	2.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.70										
01-02-040-24W4	23-Sep-22	1.98645	14500	24700	< 2	2.00	770000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.85			531.5963596		-72.15121119		0.935965019			-64.03441057
02-10-040-24W4	1-Oct-20	0.12328	23172	19300	< 2	< 1	780000	210000	< 1	< 1												N/A	-20.36			2004		-220.8		0.7792			
02-10-040-24W4	29-Jun-21	< 1000	26500	26500	< 2	< 1	770000	200000	< 1	1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.85							0.773775482			
02-10-040-24W4	15-Oct-21	0.0872	13127	13050	< 2	2	790000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.66			1994.58		-226.537		0.780127			-219.873
02-10-040-24W4	24-Jun-22	< 1000	20000	13200	< 2	1.00	780000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.47			2051.186491		-232.0699971		0.774647365			-225.3508124
03-15-040-24W4	28-Sep-20	0.0729677	34248.8	28400	< 2	< 1	780000	190000	< 1	< 1												N/A	-20.02			2603		-276.8		0.7232			
03-15-040-24W4	29-Jun-21	< 1000	51000	29200	< 2	< 1	780000	190000	< 1	2	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
03-15-040-24W4	15-Oct-21	0.0927	17759	18000	< 2	1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.08			2535.32		-276.889		0.729341			-270.659
03-15-040-24W4	25-Jun-22	< 1000	12000	16600	< 2	1.00	780000	200000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-19.85			2644.733381		-286.7661584		0.719472757			-280.5250608
03-15-040-24W4	24-Sep-22	2.0608	27000	24300	< 2	1.00	790000	190000	< 1	1.00	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-18.52										
04-01-040-24W4	3-Jun-19	0.099644	71489.3	50700		< 1																	-22.04			2327		-251.52		0.7485			
04-01-040-24W4	3-Jun-19								< 1	< 1																							
04-01-040-24W4	1-Aug-19			60000		< 1																											
04-01-040-24W4	7-Aug-19	0.31947	77350.5						< 1	1																							
04-01-040-24W4	11-Aug-19	1.7898	101620	63700		1			< 1	1													-15.66			2489.125033		-272.5425919		0.733547837			
04-01-040-24W4	9-Oct-19	0.0575734	55339.5	45400	< 2	< 1	790000	16000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-19.39			2293		-254.56		0.7517			
04-01-040-24W4	9-Oct-19	0.268925	59324.9																														
04-01-040-24W4	9-Oct-19			43200	< 2	< 1	780000	180000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
04-01-040-24W4	12-Oct-19	0.995735	19464.2	14500	< 2	1	770000	210000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-8.08			4507		-434.16		0.5706			
04-01-040-24W4	23-Sep-20	0.0771208	71257	43500	< 2	< 1	780000	180000	< 1	< 1																							
04-01-040-24W4	23-Sep-20	0.325837	148094	115000	< 2	< 1	760000	130000	< 1	< 1												N/A	-21.25			574		-68.99		0.931			
04-01-040-24W4	1-Oct-20	0.962734	55768.5	44700	< 2	2	770000	190000	< 1	< 1												N/A	-20.9			11148		-750.36		0.2496			
04-01-040-24W4	27-Jun-21	/A - Vacuur	/A - Vacuur	50100	< 2	1	780000	170000	< 1	< 1													-22.36							0.755444464			
04-01-040-24W4	28-Jun-21								< 1	< 1													-7.38							1.003242457			
04-01-040-24W4	11-Oct-21	0.7509	20855	676	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
04-01-040-24W4	15-Oct-21	1.7797	355	414	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-7.32			>Modern		-2.91444		1.00568			5.67638
04-01-040-24W4	17-Oct-21	1.2165	7556	8820	< 2	3	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
04-01-040-24W4	19-Jun-22	0.8797	8609.75																														
04-01-040-24W4	19-Jun-22																									3719.699949		-376.1005086		0.629356967			-370.6403484
04-01-040-24W4	19-Jun-22			12000	< 2	1.00	820000	170000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.05										
04-02-040-24W4	7-Aug-19	0.15247	99237.5	75200		1			< 1	1													-11.72			2010.816457		-227.9120929		0.778551992			
04-02-040-24W4	2-Oct-19	0.50962	53253.1	42300	< 2	< 1	760000	190000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
04-02-040-24W4	27-Jun-21	< 1000	56000	59400	< 2	1	780000	160000	< 1	2	< 10	< 10	< 10	< 10	< 10	< 10	15.4	< 10					-21.59							0.792163151			
04-02-040-24W4	13-Oct-21	0.6063	25381.5	29000	< 2	2	770000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
04-02-040-24W4	24-Jun-22	< 1000	49000	39100	< 2	1.00	800000	160000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-20.76										
04-02-040-24W4	23-Sep-22	1.296	58500	43800	< 2	1.00	770000	190000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-22.81			1671.730535		-194.9244182		0.81211787			-187.8805729
04-12-040-24W4	3-Jun-19	0.437848	14589	14100		< 1																	-19.3			1444		-164.54		0.8355			
04-12-040-24W4	3-Jun-19								< 1	< 1																							
04-12-040-24W4	1-Aug-19			28200		1																											
04-12-040-24W4	8-Aug-19	0.1136	36528						< 1	1																							
04-12-040-24W4	2-Oct-19	1.0851	10565.5	24300	< 2	13	780000	200000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
04-12-040-24W4	23-Sep-20	0.324699	23923.5	20200	< 2	1	770000	210000	< 1	< 1																							
04-12-040-24W4	27-Jun-21	< 1000	19000	24100	< 2	1	770000	200000	< 1	2	< 10	< 10	< 10	< 10	< 10	11	22.1	< 10					-23.15							0.872147652			
04-12-040-24W4	13-Oct-21	1.0451	8415	11600	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
04-12-040-24W4	18-Jun-22	0.91115	9429.595	10500	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.37										
04-12-040-24W4	17-Sep-22	1.3921	22000	13800	< 2	2.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.94			776.7609913		-100.0413571		0.907830908			-92.16828356
07-02-040-24W4	3-Jun-19	0.238932	45478.3	46600		< 1																	-21.08			2980		-309.92		0.6901			
07-02-040-24W4	3-Jun-19	0.147437	34931.1	34800		< 1																	-20.22			2271		-246.29		0.7537			
07-02-040-24W4	3-Jun-19								< 1	< 1																							
07-02-040-24W4	3-Jun-19								< 1	< 1																							
07-02-040-24W4	1-Aug-19			48200		1																											
07-02-040-24W4	1-Aug-19			36900		1																											
07-02-040-24W4	8-Aug-19	0.8732	33356						< 1	1																							

INTEGRATED SUSTAINABILITY

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date (dd-mmm-yy)	CH4 (ppm)	CO2 (ppm)	Carbon Dioxide (CO2) -BA (ppmv)	Carbon Monoxide (CO) - BA (ppmv)	Methane - BA (ppmv)	Nitrogen (N2) - BA (ppmv)	Oxygen (O2) - BA (ppmv)	vHH - BA (ppmv)	vNMH - BA (ppmv)	2,2,4-Trimethylpentane (ppm)	Benzene (ppm)	Cyclohexane (ppm)	Cyclopentane (ppm)	Ethylbenzene (ppm)	Methylcyclohexane (ppm)	Toluene (ppm)	Xylenes (ppm)	d13C-C1 (‰)	d13C-C2 (‰)	d13C-C3 (‰)	d13C-CH4 (‰)	d13C-CO2 (‰)	d13C-iC4 (‰)	d13C-nC4 (‰)	14C in CO2 (yr BP)	14C-CH4 (yr BP)	del14C in CO2 (‰)	del14C-CH4 (‰)	F14C in CO2 (None)	F14C-CH4 (None)	Normalised 14C in CH4 (‰)	Normalised 14C in CO2 (‰)
07-02-040-24W4	8-Aug-19	0.0495415	46875.5						< 1	1																							
07-02-040-24W4	12-Oct-19	0.0959722	36151.6	28200	< 2	< 1	780000	180000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
07-02-040-24W4	12-Oct-19	0.0752263	29838.8	22800	< 2	< 1	770000	190000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
07-02-040-24W4	24-Sep-20	0.101765	43961.3	39400	< 2	< 1	770000	190000	< 1	< 1												N/A	-21.57			2753		-290.18		0.7098			
07-02-040-24W4	24-Sep-20	0.0987719	37470.4	44000	< 2	< 1	770000	190000	< 1	< 1																							
07-02-040-24W4	1-Oct-20	2.00878	420.635	1180	< 1	2	780000	220000	< 1	< 1												N/A	-8.62			>Modern		5.73		1.0057			
07-02-040-24W4	13-Oct-21	1.7627	1445	1890	< 2	4	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-26.31			2185.52		-244.705		0.761803			-238.197
07-10-040-24W4	28-Sep-20	0.330199	21130.3	15700	< 2	< 1	780000	210000	< 1	< 1												N/A	-20.68			3304		-337.2		0.6628			
07-10-040-24W4	28-Sep-20	0.361482	11253.8	8470	< 2	< 1	780000	210000	< 1	< 1												N/A	-22.81			2508		-268.18		0.7318			
07-10-040-24W4	29-Jun-21	/A - Vacuur	/A - Vacuur	13700	< 2	1	770000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.04							0.722437537			
07-10-040-24W4	15-Oct-21	0.27105	6054.5	6540	< 2	1	790000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-23.17			2561.52		-279.244		0.726966			-273.034
07-10-040-24W4	16-Sep-22	1.8969	6500	4900	< 2	3.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.83										
08-09-040-24W4	24-Sep-22	0.5712	15000	9660	< 2	1.00	790000	200000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-20.71										
Field Duplicate	24-Sep-22	0.5712	15000																														
Field Duplicate	24-Sep-22			6070	< 2	2.00	790000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-23.01										
09-10-040-24W4	1-Oct-20	0.517242	122268	83600	< 2	< 1	780000	140000	< 1	< 1		Untraceable			Untraceable		Untraceable	Untraceable				N/A	-20.55			6993		-581.27		0.4187			
09-10-040-24W4	21-Jun-21	/A - Vacuur	/A - Vacuur	7020	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.05							0.422452024			
09-10-040-24W4	29-Jun-21	/A - Vacuur	/A - Vacuur	7020	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.05							0.422452024			
09-10-040-24W4	16-Oct-21	0.3624	64251	67900	< 2	2	790000	140000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.37			7273.47		-599.094		0.404361			-595.639
09-10-040-24W4	16-Oct-21	0.3624	64251	53000	< 2	2	800000	140000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
09-10-040-24W4	16-Sep-22	1.51315	114500	46900	< 2	3.00	780000	180000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.54										
10-02-040-24W4	3-Jun-19	0.038579	14248.9	13700		< 1																	-19.48			1405		-160.47		0.8395			
10-02-040-24W4	3-Jun-19								< 1	< 1																							
10-02-040-24W4	1-Aug-19			16700		1																											
10-02-040-24W4	8-Aug-19	0.50488	19381						< 1	1																							
10-02-040-24W4	2-Oct-19	1.20664	5146.32	18400	< 2	< 1	760000	200000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-8.71			1322		-158.74		0.8483			
10-02-040-24W4	23-Sep-20	0.0111133	22737.9	19600	< 2	< 1	770000	210000	< 1	< 1												N/A	-19.64			1257		-144.85		0.8551			
10-02-040-24W4	27-Jun-21	< 1000	17500	23500	< 2	< 1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	14.8	< 10															
10-02-040-24W4	27-Jun-21										< 10	< 10	< 10	< 10	< 10	< 10	13.9	< 10															
10-02-040-24W4	13-Oct-21	0.0763	11901.5	14400	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.28			1245.73		-150.965		0.85635			-143.65
10-02-040-24W4	17-Sep-22	1.25225	22500	16200	< 2	2.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.55										
12-01-040-24W4	3-Jun-19	0.16141	56510.1	53000		< 1																	-20.64			1283		-147.63		0.8524			
12-01-040-24W4	3-Jun-19								< 1	< 1																							
12-01-040-24W4	1-Aug-19			70200		1																											
12-01-040-24W4	8-Aug-19	0.32771	87096						< 1	1																							
12-01-040-24W4	9-Oct-19	0.321719	61533.4																														
12-01-040-24W4	9-Oct-19			50800	< 2	< 1	760000	170000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
12-01-040-24W4	13-Oct-21	1.37865	21392	24500	< 2	2	780000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.81			2799.87		-300.315		0.705713			-294.287
12-01-040-24W4	18-Jun-22	0.18285	43214.17	44100	< 2	1.00	790000	170000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.39			2777.34488		-298.4439177		0.707692848			-292.3048978
12-02-040-24W4	9-Aug-19	0.398995	55768.5	41200		1			< 1	1													-19.62			5121.221823		-475.7886556		0.528600154			
12-02-040-24W4	2-Oct-19	0.713648	28447.2	30800	< 2	< 1	780000	170000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
12-02-040-24W4	23-Sep-20	0.409584	45034.3	37800	< 2	< 1	780000	180000	< 1	< 1																							
12-02-040-24W4	27-Jun-21	1000	40500	43700	< 2	1	780000	170000	< 1	3	< 10	< 10	< 10	< 10	< 10	< 10	26.1	< 10					-7.53							0.524085809			
12-02-040-24W4	15-Oct-21	0.48415	21737.5	27200	< 2	2	790000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.53			5022.2		-469.415		0.535156			-464.844
12-02-040-24W4	24-Jun-22	< 1000	36000	29600	< 2	1.00	790000	180000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.57			5046.370266		-471.0810392		0.533545607			-466.451305
16-03-040-24W4	9-Aug-19	0.023823	38860	36000		1			< 1	1													-16.4			1402.302225		-167.1527762		0.839819999			
16-03-040-24W4	2-Oct-19	0.054491	23273	20500	3	< 1	770000	190000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
16-03-040-24W4	15-Oct-21	0.20865	9649.5	9140	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.74			1307.9		-157.511		0.849747			-150.253
16-03-040-24W4	24-Sep-22	0.61925	23000	20800	< 2	< 1	780000	200000	< 1	2.00	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-19.91										
16-09-040-24W4	28-Sep-20	0.429879	11009.7	9100	< 2	< 1	780000	210000	< 1	< 1												N/A	-19.95			1423		-162.34		0.8377			
16-09-040-24W4	26-Jun-21	< 1000	14000	16200	< 2	< 1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	11.2	23	< 10															
16-09-040-24W4	15-Oct-21	0.41215	5725.5	6190	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.24			1258.25		-152.288		0.855016			-144.984
16-09-040-24W4	25-Jun-22	< 1000	9000	54500	< 2	1.00	790000	160000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-10.76			1375.135604		-164.6435111		0.842663655			-157.3350158
16-09-040-24W4	22-Sep-22	1.29655	7500	3730	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.98										
North 2 Data																																	
09-16-040-24W4	23-Jun-21	< 1000	42500	32700	< 2	< 1	800000	170000															-13.42							0.803520194			
09-16-040-24W4	17-Oct-21	0.9794	17846	18500	< 2	2	780000	210000																									
09-16-040-24W4	22-Jun-22	< 1000	38500	33400	< 2	1.00	790000	180000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.10										

INTEGRATED SUSTAINABILITY

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date	CH4	CO2	Carbon Dioxide (CO2) -BA	Carbon Monoxide (CO) - BA	Methane - BA	Nitrogen (N2) - BA	Oxygen (O2) - BA	vHH - BA	vNMH - BA	2,2,4-Trimethylpentane	Benzene	Cyclohexane	Cyclopentane	Ethylbenzene	Methylcyclohexane	Toluene	Xylenes	d13C-C1	d13C-C2	d13C-C3	d13C-CH4	d13C-CO2	d13C-iC4	d13C-nC4	14C in CO2	14C-CH4	dell 14C in CO2	dell 14C-CH4	F14C in CO2	F14C-CH4	Normalised 14C in CH4	Normalised 14C in CO2
	(dd-mmm-yy)	ppm	ppm	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppmv	ppm	ppm	ppm	ppm	ppm	ppm	ppm	ppm	‰	‰	‰	‰	‰	‰	‰	yr BP	yr BP	‰	‰	None	None	‰	‰
09-16-040-24W4	18-Sep-22	0.87705	39000	25800	2.00	3.00	770000	210000	< 1	< 1	14.9	< 10	< 10	< 10	< 10	25.3	< 10	< 10					-25.10			2788.213534		-299.3924903		0.706735978			-293.2617621
07-21-040-24W4	24-Jun-21	< 1000	24000	70920	< 2	1	840000	9000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.05							0.491303071			
07-21-040-24W4	7-Oct-21			15600	< 2	203	930000	50000	< 1	< 1	< 10	33.8	31	11	< 10	26.9	21.9	< 10															
07-21-040-24W4	14-Oct-21	0.5949	56397	59400	< 2	2	840000	100000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1															
07-21-040-24W4	22-Jun-22	1000	60000	49300	< 2	1.00	810000	140000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.69			5903.699607	Failed	-524.622930	Failed	0.479535365	Failed		-520.4613874
07-21-040-24W4	24-Sep-22	1.9708	64000																														
12-15-040-24W4	29-Jun-21	0.0 - 0.1	27000	29900	< 2	< 1	780000	190000	< 1	1	< 10	< 10	< 10	< 10	< 10	15.8	13.7	< 10					-20.65							0.549594841			
12-15-040-24W4	17-Oct-21	0.05365	13916	14300	< 2	2	790000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
12-15-040-24W4	22-Jun-22	< 1000	18000	12900	< 2	1.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.35										
12-15-040-24W4	22-Sep-22	0.785	23500	15000	4.00	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.94			4266.753004		-417.1744345		0.587923752			-412.0733707
12-21-040-24W4	24-Jun-21	< 1000	5000	6930	< 2	2	780000	220000	< 1	< 1													-20.25							0.821489118			
12-21-040-24W4	16-Oct-21	0.1827	20456	26600	< 2	1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
12-21-040-24W4	21-Jun-22	0.1344	14966.33	16900	< 2	2.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.43										
12-21-040-24W4	14-Sep-22	0.6722	30500	17500	< 2	2.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-16.17			1165.745388		-142.5824179		0.864917725			-135.0811188
Field Duplicate	14-Sep-22	0.6722	30500																														
Field Duplicate	14-Sep-22			18600	< 2	2.00	770000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-17.60			1196.43503		-145.851916		0.861619627			-138.3791905
13-16-040-24W4	24-Jun-21	< 1000	10500	11340	< 2	< 1	780000	210000			< 10	< 10	25.2	20.6	< 10	54.7	12.2	< 10					-20.73							0.979663148			
13-16-040-24W4	14-Oct-21	0.0338	5201	5560	< 2	1	780000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1															
13-16-040-24W4	21-Jun-22	0.00635	7807.575	8630	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.28										
13-16-040-24W4	14-Sep-22	0.11005	9000	6140	< 2	2.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.35										
14-21-040-24W4	24-Jun-21	< 1000	4000	4100	< 2	< 1	780000	220000	< 1	< 1													-16.75							0.631778275			
14-21-040-24W4	14-Oct-21	0.07315	2076.5	2650	< 2	1	790000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1															
14-21-040-24W4	21-Jun-22	0.00345	2647.63	2650	< 2	1.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-16.84										
14-21-040-24W4	14-Sep-22	0.0865	4000	2070	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-17.04			1943.207891		-221.6777916		0.785130475			-214.867775
16-16-040-24W4	17-Oct-21	1.6371	5345.5	6040	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
16-16-040-24W4	22-Jun-22	< 1000	29500	22600	< 2	1.00	790000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.02										
16-16-040-24W4	16-Sep-22	0.59195	32500	25300	< 2	3.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.23			2672.396205		-289.218083		0.716999384			-282.998418
16-20-040-24W4	24-Jun-21	< 1000	24000	27100	< 2	1	790000	190000	< 1	1	< 10	< 10	< 10	< 10	< 10	15.9	12.6	< 10					-20.85										
16-20-040-24W4	14-Oct-21	0.08695	13377	14500	< 2	1	770000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1															
16-20-040-24W4	21-Jun-22	0.0088	10873.22	11000	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.05										
16-20-040-24W4	22-Sep-22	< 1000	28500	17200	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.98			526.2078987		-71.52860442		0.936593072			-63.40636304
North 3 Data																																	
01-32-040-24W4	28-Jun-21	< 1000	23000	26600	< 2	< 1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	14.4	10.7	< 10															
01-32-040-24W4	12-Oct-21	0.0391	15081	17500	< 2	1	780000	200000	< 1	129	14	< 10	< 10	< 10	< 10	26	< 10	< 10					-19.82			3017.01		-318.975		0.686893			-313.107
01-32-040-24W4	18-Jun-22	0.3294	7240.895	13200	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.07			3220.472528		-336.0964204		0.669710985			-330.2865412
01-32-040-24W4	14-Sep-22			20300	< 2	2.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.25			2926.989483		-311.392158		0.694631345			-305.3663234
Field Duplicate	14-Sep-22			21600	< 2	2.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.80			2933.426715		-311.9437568		0.694074921			-305.922744
01-32-040-24W4	15-Sep-22	0.5613	26000																														
Field Duplicate	15-Sep-22	0.5613	26000																														
02-05-041-24W4	28-Jun-21	< 1000	48500	45700	< 2	1	790000	170000	< 1	1	< 10	< 10	< 10	< 10	< 10	19.1	13.1	< 10															
02-05-041-24W4	12-Oct-21	0.37445	17671.5	19500	< 2	1	770000	210000	< 1	< 1	10.3	< 10	< 10	< 10	< 10	21.8	< 10	< 10					-19.37			365.441		-52.6357		0.955527			-44.4733
02-05-041-24W4	18-Jun-22	0.126	20128.38	20400	< 2	1.00	790000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.34										
02-05-041-24W4	14-Sep-22	< 1000	37000	24100	< 2	2.00	770000	210000	< 1	1.00	< 10	< 10	< 10	< 10	< 10	13.9	11.8	< 10					-18.71			350.4601825		-50.99127577		0.957310048			-42.68956739
05-33-040-24W4	28-Jun-21	< 1000	25000	27800	< 2	< 1	780000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	13.2	10.6	< 10															
05-33-040-24W4	12-Oct-21	0.03305	14918.5	16200	< 2	1	790000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.72			2852.07		-304.847		0.701142			-298.858
05-33-040-24W4	18-Jun-22	0.0042	71490.94	11600	< 2	1.00	790000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.72										
Field Duplicate	18-Jun-22	0.0042	71490.94	13600	< 2	1.00	790000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.59										
05-33-040-24W4	16-Sep-22	0.7625	26500	17000	< 2	2.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.61			2812.308429		-301.4908256		0.704619288			-295.3784397
06-05-041-24W4	28-Jun-21	< 1000	18500	15800	< 2	2	770000	210000	< 1	2	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
06-05-041-24W4	12-Oct-21	0.20505	22875.5	27500	< 2	1	770000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.05			1646.67		-192.302		0.814657			-185.343
06-05-041-24W4	18-Jun-22	0.0294	25017.0705	15800	< 2	2.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-18.35										
06-05-041-24W4	14-Sep-22			392	< 2	4.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-9.41										
06-05-041-24W4	16-Sep-22	0.4439	45000	31100	< 2	1.00	780000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-18.18			1637.258042		-191.4620937		0.815610481			-184.3879877
Field Duplicate	16-Sep-22	0.4439	45000																														
Field Duplicate	16-Sep-22			35900	< 2	2.00	770000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.17			1631.611114		-190.8935137		0.816184034			-183.8144384
06-08-041-24W4	28-Jun-21	< 1000	94500	76100	< 2	< 1	800000	130000	< 1	1																							
06-08-041-24W4	10-Oct-21	0.5657	43276.5	65600	< 2	1	800000	140000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	10.2	< 10	< 10					-22.57			3590.66		-365.912		0.639551			-360.449

INTEGRATED SUSTAINABILITY

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date (dd-mmm-yy)	CH4 ppm	CO2 ppm	Carbon Dioxide (CO2) -BA ppmv	Carbon Monoxide (CO) - BA ppmv	Methane - BA ppmv	Nitrogen (N2) - BA ppmv	Oxygen (O2) - BA ppmv	vHH - BA ppmv	vNMH - BA ppmv	2,2,4-Trimethylpentane ppm	Benzene ppm	Cyclohexane ppm	Cyclopentane ppm	Ethylbenzene ppm	Methylcyclohexane ppm	Toluene ppm	Xylenes ppm	d13C-C1 ‰	d13C-C2 ‰	d13C-C3 ‰	d13C-CH4 ‰	d13C-CO2 ‰	d13C-iC4 ‰	d13C-nC4 ‰	14C in CO2 yr BP	14C-CH4 yr BP	dell14C in CO2 ‰	dell14C-CH4 ‰	F14C in CO2 None	F14C-CH4 None	Normalised 14C in CH4 ‰	Normalised 14C in CO2 ‰
06-08-041-24W4	18-Jun-22	1.784	337.51	366	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-8.04										
06-08-041-24W4	25-Jun-22	0.1369	61436.335	6640	< 2	1.00	790000	200000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.14			3639.188128		-369.8158927		0.635696556			-364.3007903
06-08-041-24W4	14-Sep-22	< 1000	30500	35600	2.00	5.00	780000	190000	< 1	5.00	< 10	< 10	< 10	< 10	< 10	10.1	< 10	< 10					-21.10			3308.903188		-343.3649378		0.662378887			-337.6185988
06-08-041-24W4	14-Sep-22	< 1000	2000																														
06-08-041-24W4	14-Sep-22																									>Modern		-4.148163967		1.004562913			4.562871165
06-28-040-24W4	28-Jun-21	< 1000	8000	10020	< 2	1	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.06							0.810390754			
06-28-040-24W4	29-Jun-21			390	< 2	2	780000	220000	< 1	< 1													-7.53							0.999526705			
06-28-040-24W4	13-Oct-21	0.02655	10416.5	12100	< 2	1	780000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	17.7	13.2															
06-28-040-24W4	18-Jun-22	0.0057	9401.22	10200	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.21										
06-28-040-24W4	18-Jun-22	1.76375	337.18	366	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-8.02										
06-28-040-24W4	14-Sep-22			16600	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.67			1550.716684		-182.7043582		0.824444823			-175.5537103
06-28-040-24W4	15-Sep-22	0.05285	17500																														
06-28-040-24W4	17-Sep-22	< 1000	2000	388	< 2	3.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	16.5	< 10	< 10					-7.52			>Modern		-4.895639813		1.003808899			3.808863852
10-32-040-24W4	28-Jun-21	< 1000	27500	31500	< 2	< 1	780000	190000	< 1	1	< 10	< 10	< 10	< 10	< 10	17.5	14.6	< 10															
10-32-040-24W4	12-Oct-21	0.04685	19064	20200	< 2	2	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.07			1344.16		-161.305		0.845921			-154.079
10-32-040-24W4	18-Jun-22	0.01445	15395.76	15200	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.62										
10-32-040-24W4	14-Sep-22	< 1000	30000	24000	< 2	2.00	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-18.86			1317.295965		-158.6069706		0.848752999			-151.2457182
12-28-040-24W4	21-Jun-21	< 1000	13500	12050	< 2	< 1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	11	< 10	< 10															
12-28-040-24W4	23-Jun-21	< 1000	13500	14200	< 2	1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	11	< 10	< 10															
12-28-040-24W4	13-Oct-21	0.3478	4503.5	4010	< 2	3	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.36			968.164		-121.116		0.886456			-113.544
12-28-040-24W4	18-Jun-22	0.02875	7173.1	6990	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.77			936.1812053		-117.7257368		0.889991836			-110.0072081
Field Duplicate	18-Jun-22	0.02875	7173.1	5710	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.90			934.4221539		-117.5325151		0.890186748			-109.8122978
12-28-040-24W4	14-Sep-22			5050	< 2	3.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-18.64										
12-28-040-24W4	15-Sep-22	< 1000	6500																														
13-05-041-24W4	28-Jun-21	< 1000	8000	8170	< 2	< 1	780000	210000	< 1	1																							
13-05-041-24W4	16-Oct-21	0.11825	3019	2850	< 2	3	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.26			935.693		-117.556		0.890047			-109.953
13-05-041-24W4	18-Jun-22			44900	< 2	1.00	790000	170000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.02										
13-05-041-24W4	24-Sep-22	< 1000	6000	5460	< 2	< 1	780000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-19.83										
Field Duplicate	24-Sep-22	< 1000	6000																														
Field Duplicate	24-Sep-22			4970	< 2	1.00	780000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-19.85										
14-28-040-24W4	28-Jun-21	< 1000	8500	5880	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
14-28-040-24W4	13-Oct-21	0.89835	16243.5	16800	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.31			1110.85		-136.589		0.87085			-129.15
14-28-040-24W4	18-Jun-22	0.7133	11663.625	12500	< 2	1.00	790000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.35			1187.969781		-144.9513242		0.862528097			-137.470728
14-28-040-24W4	18-Sep-22	1.60035	20500	13700	2.00	3.00	770000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.59										
South Data																																	
01-35-039-24W4	10-Oct-19			8610	< 2	< 1	770000	210000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15				-44.67	-19.33			1722		-199.68		0.807			
01-35-039-24W4	12-Oct-19	1.99396	423.831	506	< 2	2	780000	220000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-11.55			31		-12.16		0.9961			
01-35-039-24W4	27-Sep-20	0.268849	11666.5	9200	< 2	1	780000	210000	< 1	< 1												N/A	-20.73			1547		-175.13		0.8249			
01-35-039-24W4	26-Jun-21	< 1000	13000	13600	< 2	< 1	780000	210000	< 1	< 1													-19.26										
01-35-039-24W4	11-Oct-21	0.2938	6572	7700	< 2	1	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
01-35-039-24W4	21-Jun-22	0.0519	13235.525	7250	< 2	1.00	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.44			973.0458309		-121.7653848		0.885916852			-114.0821593
02-23-039-24W4	27-Sep-20	0.951996	36129.1	33200	< 2	2	770000	190000	< 1	< 1												N/A	-9.6			2944		-306.85		0.6932			
02-23-039-24W4	26-Jun-21	< 1000	26500	29100	< 2	< 1	780000	190000	< 1	< 1		15.3	10.1	< 10																			
02-23-039-24W4	11-Oct-21	0.54275	25928	25700	< 2	< 1	780000	200000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-23.38			3137.09		-329.079		0.676702			-323.298
02-23-039-24W4	24-Jun-22	< 1000	< 1000																														
02-23-039-24W4	18-Sep-22	< 1000	2000																														
04-26-039-24W4	1-Jun-19			37800		< 1																	-19.38			2719		-287.17		0.7128			
04-26-039-24W4	3-Jun-19								< 1	< 1																							
04-26-039-24W4	3-Jun-19	1.97482	417.153	470		< 1																	-7.65			0		32.13		1.0321			
04-26-039-24W4	3-Jun-19								< 1	< 1																							
04-26-039-24W4	1-Aug-19			36800		1																											
04-26-039-24W4	1-Aug-19			461		2																	-11.26			Insufficient Carbon							
04-26-039-24W4	9-Aug-19	0.092998	48714						< 1	1																							
04-26-039-24W4	9-Aug-19	1.9473	397.69						< 1	1													-11.26			Insufficient Carbon							
04-26-039-24W4	12-Oct-19	0.125568	28663	23600	< 2	< 1	780000	200000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
04-26-039-24W4	12-Oct-19	1.9858	420.196	520	< 2	2	780000	222000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-8.39			>Modern		-5.47		1.0029			
04-26-039-24W4	24-Sep-20	0.0821111	41908.7	30900	< 2	1	770000	200000	< 1	< 1																							
04-26-039-24W4	28-Oct-20	0.139806	31917.8																				-19.38			2719		-287.17		0.7128			
04-26-039-24W4	27-Jun-21	< 1000	35500	34100	< 2	< 1	790000	170000	< 1	2	< 10	10	< 10	< 10	< 10	< 10	17.4	< 10					-20.55							0.74143998			

Integrated Sustainability

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date (dd-mmm-yy)	CH4 ppm	CO2 ppm	Carbon Dioxide (CO2) -BA ppmv	Carbon Monoxide (CO) - BA ppmv	Methane - BA ppmv	Nitrogen (N2) - BA ppmv	Oxygen (O2) - BA ppmv	vHH - BA ppmv	vNMH - BA ppmv	2,2,4-Trimethylpentane ppm	Benzene ppm	Cyclohexane ppm	Cyclopentane ppm	Ethylbenzene ppm	Methylcyclohexane ppm	Toluene ppm	Xylenes ppm	d13C-C1 ‰	d13C-C2 ‰	d13C-C3 ‰	d13C-CH4 ‰	d13C-CO2 ‰	d13C-iC4 ‰	d13C-nC4 ‰	14C in CO2 yr BP	14C-CH4 yr BP	del14C in CO2 ‰	del14C-CH4 ‰	F14C in CO2 None	F14C-CH4 None	Normalised 14C in CH4 ‰	Normalised 14C in CO2 ‰
04-26-039-24W4	10-Oct-21	0.155	19929																														
04-26-039-24W4	24-Jun-22	< 1000	25000	18700	< 2	1.00	800000	190000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.26										
04-35-039-24W4	11-Aug-19	0.525345	77192.5	61800		1			< 1	1													-19.74			2479.35227		-271.6570453		0.734440798			
04-35-039-24W4	10-Oct-19	0.19423	65921																														
04-35-039-24W4	10-Oct-19			56400	< 2	< 1	780000	170000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
04-35-039-24W4	27-Sep-20	0.186115	86900.4	64400	< 2	< 1	770000	170000	< 1	< 1																							
04-35-039-24W4	12-Oct-21	1.39885	6045	15700	< 2	2	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.43			2930.61		-311.611		0.694321			-305.679
04-35-039-24W4	21-Jun-22	0.086	24190.77	25200	< 2	1.00	790000	180000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.23			2803.865872		-300.7563108		0.705360227			-294.6375042
05-36-039-24W4	11-Oct-19	0.730816	133695	96900	< 2	1	800000	90000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-10.4			10755		-740.02		0.2622			
05-36-039-24W4	2-Oct-20	1.07178	133640	93000	< 2	2	780000	130000	< 1	< 1												N/A	-21.77			9855		-706.76		0.2932			
05-36-039-24W4	26-Jun-21	I/A - Vacuum	I/A - Vacuum	120000	< 2	1	780000	100000	< 1	1	< 10	10.1	< 10	< 10	< 10	15.4	30.5	< 10					-21.06							0.29367064			
05-36-039-24W4	11-Oct-21	0.9654	46082	49200	< 2	1	780000	170000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
05-36-039-24W4	18-Sep-22	1.9462	107500	75200	< 2	3.00	770000	160000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.22			9612.099926		-700.3969848		0.302223751			-697.7729166
08-34-039-24W4	3-Jun-19	0.0961044	36448.8	31000		< 1																	-21.74			917		-107.92		0.8921			
08-34-039-24W4	3-Jun-19								< 1	< 1																							
08-34-039-24W4	3-Jun-19	1.924	412.355	800		2																	-10.04			0		5.27		1.0053			
08-34-039-24W4	3-Jun-19								< 1	< 1																							
08-34-039-24W4	1-Aug-19			32600		1																											
08-34-039-24W4	1-Aug-19			444		2																	-9.18			Insufficient Carbon							
08-34-039-24W4	10-Aug-19	0.2086	55109						< 1	1																							
08-34-039-24W4	10-Aug-19	1.9185	383.82						< 1	1													-9.18			Insufficient Carbon							
08-34-039-24W4	12-Oct-19	0.034054	27839.6	22700	< 2	< 1	780000	200000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
08-34-039-24W4	12-Oct-19	2.09322	432.192	605	< 2	2	780000	220000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-12.33			53		-14.87		0.9934			
08-34-039-24W4	24-Sep-20	0.090277	32940.6	35000	< 2	< 1	770000	190000	< 1	< 1																							
08-34-039-24W4	21-Jun-21	< 1000	32000	35100	< 2	< 1	770000	190000	< 1	1																							
08-34-039-24W4	29-Jun-21	< 1000	32000								< 10	< 10	< 10	< 10	< 10	13	12.1	< 10															
08-34-039-24W4	12-Oct-21	0.17455	14429	14700	< 2	1	780000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-21.82			735.293		-95.2649		0.91253			-87.4697
08-34-039-24W4	18-Sep-22	1.59655	10000	6720	2.00	4.00	770000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-18.15										
08-26-039-24W4	3-Jun-19	0.0587193	88956.9	88900		< 1																	-21.63			4432		-424.05		0.576			
08-26-039-24W4	3-Jun-19								< 1	< 1																							
08-26-039-24W4	1-Aug-19			92600		1																											
08-26-039-24W4	9-Aug-19	0.180551	118827						< 1	1																							
08-26-039-24W4	11-Oct-19	0.255841	92799.3	80200	< 2	< 1	790000	130000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-8.33			4395		-426.18		0.5786			
08-26-039-24W4	24-Sep-20	0.177008	112232	75500	< 2	2	780000	140000	< 1	< 1																							
08-26-039-24W4	26-Jun-21	< 1000	84000	79800	< 2	< 1	800000	120000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
08-26-039-24W4	11-Oct-21	0.25	60567	72700	< 2	1	790000	140000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.53			4620.3		-442.194		0.562612			-437.388
08-26-039-24W4	24-Sep-22	0.99185	94000	85400	< 2	1.00	790000	130000	< 1	1.00	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-20.91										
08-35-039-24W4	3-Jun-19	0.214609	63264.5	63600		< 1																	-22.04			9033		-675.17		0.3248			
08-35-039-24W4	3-Jun-19								< 1	< 1																							
08-35-039-24W4	26-Jun-21	I/A - Vacuum	I/A - Vacuum	58400	< 2	1	830000	110000	< 1	1	< 10	17.3	12.9	12.6	< 10	26.8	28	< 10															
08-35-039-24W4	11-Oct-21	0.55265	38819	38900	< 2	1	790000	170000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-22.85			6725.39		-570.786		0.432912			-567.088
10-22-039-24W4	27-Sep-20	0.560427	71224.5	55500	< 2	< 1	800000	140000	< 1	< 1												N/A	-23.33			5741		-510.68		0.4893			
10-22-039-24W4	29-Jun-21	I/A - Vacuum	I/A - Vacuum	44000	< 2	3	770000	180000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
10-22-039-24W4	10-Oct-21	0.43875	36615	43300	< 2	2	780000	180000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-23.41			4871.78		-459.386		0.545272			-454.728
10-22-039-24W4	24-Jun-22	< 1000	23000																														
10-22-039-24W4	23-Sep-22	2.0739	64500	50800	< 2	1.00	770000	180000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-23.45										
11-26-039-24W4	3-Jun-19	14.0135	94861.8	85200		13																	-15.97			5476		-494.24		0.5058			
11-26-039-24W4	3-Jun-19								< 1	< 1																							
11-26-039-24W4	5-Oct-19	25.8001	97264.9	70600	< 2	7	790000	140000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-8.93			14470		-836.3		0.1651			
11-26-039-24W4	5-Oct-19	1.57969	6116.06	20400	< 2	< 1	770000	190000	< 1	2		< 0.05			< 0.05		< 0.05	< 0.15					-9.25			5246		-483.9		0.5204			
11-26-039-24W4	5-Oct-19	0.255403	81632.4	2850	< 2	< 1	930000	70000	< 1	< 1		0.05			< 0.05		< 0.05	< 0.15															
11-26-039-24W4	5-Oct-19	0.943454	15943.5	64100	< 2	< 1	780000	140000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
11-26-039-24W4	5-Oct-19	0.0164544	74684.1	57800	< 2	< 1	790000	140000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
11-26-039-24W4	10-Oct-19	0.10926	7128.9	6460	< 2	< 1	770000	210000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15				-48.49	-10.85			2680		-289.6		0.7164			
11-26-039-24W4	5-Aug-20			70000	< 2	65	770000	170000	< 1	< 1		< 10			< 10		< 10	< 10					-11.13			12452		-789.57		0.2122			
11-26-039-24W4	5-Aug-20																						-8.38										
11-26-039-24W4	5-Aug-20			50000	< 2	3	790000	160000	< 1	< 1																							
11-26-039-24W4	5-Aug-20			20000	< 2	2	780000	200000	< 1	< 1																							
11-26-039-24W4	5-Aug-20			110000	< 2	1	810000	80000	< 1	< 1																							

INTEGRATED SUSTAINABILITY

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date (dd-mmm-yy)	CH4 ppm	CO2 ppm	Carbon Dioxide (CO2) -BA ppmv	Carbon Monoxide (CO) - BA ppmv	Methane - BA ppmv	Nitrogen (N2) - BA ppmv	Oxygen (O2) - BA ppmv	vHH - BA ppmv	vNMH - BA ppmv	2,2,4-Trimethylpentane ppm	Benzene ppm	Cyclohexane ppm	Cyclopentane ppm	Ethylbenzene ppm	Methylcyclohexane ppm	Toluene ppm	Xylenes ppm	d13C-C1 ‰	d13C-C2 ‰	d13C-C3 ‰	d13C-CH4 ‰	d13C-CO2 ‰	d13C-iC4 ‰	d13C-nC4 ‰	14C in CO2 yr BP	14C-CH4 yr BP	del14C in CO2 ‰	del14C-CH4 ‰	F14C in CO2 None	F14C-CH4 None	Normalised 14C in CH4 ‰	Normalised 14C in CO2 ‰
11-26-039-24W4	5-Aug-20			110000	< 2	< 1	830000	60000	< 1	6																							
11-26-039-24W4	26-Sep-20	103.658	98266.8	59900	< 2	10	780000	160000	< 1	< 1		Untraceable			Untraceable		Untraceable	Untraceable				-39.02	-21.43			13620	N/A	-816.49	N/A	0.1835	N/A		
11-26-039-24W4	26-Sep-20	0.677159	27394.7	22500	< 2	1	770000	210000	< 1	< 1																							
11-26-039-24W4	26-Sep-20	0.07639	22180.8	19200	< 2	2	770000	210000	< 1	< 1																							
11-26-039-24W4	26-Sep-20	1.06858	17091.1	12900	< 2	2	780000	210000	< 1	< 1																							
11-26-039-24W4	25-Jun-21	1000	20500	25900	< 2	3	770000	200000	< 1	8													-20.77							0.147954832			
11-26-039-24W4	26-Jun-21			388	< 2	2	780000	220000	< 1	< 1													-7.61							1.003627932			
11-26-039-24W4	11-Oct-21	1.2117	9004.5	12100	< 2	2	790000	200000	< 1	< 1													-22.62			16157.4		-867.339		0.133804			-866.196
11-26-039-24W4	17-Oct-21	1.817	350	466	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-9.08			>Modern		-6.93945		1.00162			1.61669
11-35-039-24W4	3-Jun-19	0.063251	41225.7	39300		< 1																	-22.12			1845		-205.18		0.7948			
11-35-039-24W4	3-Jun-19								< 1	< 1																							
11-35-039-24W4	1-Aug-19			42500		1																											
11-35-039-24W4	10-Aug-19	0.13073	57335.5						< 1	1																							
11-35-039-24W4	29-Jun-21	< 1000	23000	21500	< 2	1	790000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
11-35-039-24W4	15-Oct-21	0.48355	14995	19100	< 2	2	770000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-19.47			1672.75		-194.92		0.812017			-187.983
11-35-039-24W4	18-Jun-22	1.802	338.27	361	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-7.51			>Modern	Failed	5.54237315	Failed	1.00315650	Failed		3.156479334
11-35-039-24W4	22-Sep-22	< 1000	1500	407	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-9.44										
11-35-039-24W4	23-Sep-22	1.8198	23000	14200	< 2	1.00	780000	210000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.44										
12-23-039-24W4	26-Jun-21	< 1000	102000	111000	< 2	< 1	790000	100000	< 1	< 1	< 10	12.2	< 10	< 10	< 10	16.7	24.8	< 10															
12-23-039-24W4	10-Oct-21	0.26695	53343	70000	< 2	1	800000	130000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-23.5			5089.72		-473.856		0.530677			-469.323
12-23-039-24W4	24-Jun-22	< 1000	1500	39400	< 2	1.00	790000	170000	< 1	2.00	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-22.27			5046.889899		-471.1152528		0.533511094			-466.4858177
12-23-039-24W4	24-Sep-22	2.12375	84000	78000	< 2	2.00	780000	140000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-21.22										
12-25-039-24W4	12-Aug-19	438.265	196835	117000		364			< 1	1												-75.36	-24.27			4705.944955		-447.9761255		0.556645536			
12-25-039-24W4	4-Oct-19	0.0863987	137269	36700	< 2	< 1	910000	50000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-9.76			4633		-442.94		0.5617			
12-25-039-24W4	4-Oct-19	1438.38	49475.7	71800	< 2	49500	820000	50000	1	4550		6.41			4.31		0.06	9.84				-60.05	-11.36			8161		-640.96		0.362			
12-25-039-24W4	4-Oct-19	4467.31	78640.1	75200	< 2	17300	850000	60000	< 1	1080		0.67			0.56		< 0.05	0.77				-49.7	-10.66			4689		-446.84		0.5578			
12-25-039-24W4	4-Oct-19	2285.84	122938	104000	< 2	25900	820000	40000	< 1	15		< 0.05			0.05		< 0.05	< 0.15				-46.2	-9.81			1536		-180.94		0.8259			
12-25-039-24W4	4-Oct-19	0.275639	98277.2	23000	< 2	< 1	950000	30000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
12-25-039-24W4	11-Oct-19	2165.12	100305	66500	< 2	1920	820000	110000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15				-17.6	-8.51			6387		-552.24		0.4515			
12-25-039-24W4	5-Aug-20			422	< 2	6	780000	220000	< 1	< 1		< 10			< 10		< 10	< 10					-8.81			257		-39.66		0.9685			
12-25-039-24W4	6-Aug-20			190000	< 2	3200	790000	20000	< 1	7		< 10			< 10		< 10	< 10															
12-25-039-24W4	6-Aug-20			100000	< 2	108000	750000	40000	1	6880		< 10			19		< 10	28															
12-25-039-24W4	6-Aug-20			120000	< 2	44600	810000	30000	< 1	1280		< 10			< 10		18	< 10															
12-25-039-24W4	6-Aug-20			210000	< 2	50300	730000	10000	< 1	81		< 10			< 10		< 10	< 10				-59.07	-18.52			1352		-162.07		0.8451			
12-25-039-24W4	26-Sep-20	17056.1	163845	127000	< 2	34800	770000	70000	< 1	29		Untraceable			Untraceable		Untraceable	Untraceable				-48.54	-19.09			1453	2040	-165.42	-224.26	0.8346	0.7757		
12-25-039-24W4	29-Sep-20	0.00177878	159234	120000	< 2	< 1	800000	90000	< 1	< 1																							
12-25-039-24W4	2-Oct-20	2.00041	431.136	734	< 2	2	780000	220000	< 1	< 1		Untraceable			Untraceable		Untraceable	Untraceable					-9			>Modern		6.9		1.0069			
12-25-039-24W4	25-Jun-21	474500	101500	81000	< 2	38440	810000	60000	2	3188	< 10	24.9	28.1	27.5	< 10	< 10	17.2	< 10				-59.87	-17.86										
12-25-039-24W4	11-Oct-21	9842.5	65217.5	77800	< 2	17900	850000	60000	3	3990	79	< 10	53	11	< 10	125	< 10	< 10	-36.77	-27.23			-21.29			7536.25	10088.3	-611.996	-717.6	0.391347	0.284833	-715.167	-608.653
12-25-039-24W4	13-Oct-21			440	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-6.86										
12-25-039-24W4	16-Oct-21	1.81885	362.5	452	< 2	3	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-8.83			>Modern		-5.89651		1.00267			2.66861
12-25-039-24W4	18-Jun-22	1.7995	353.02	363	< 2	2.00	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-7.93			>Modern	Failed	6.91088362	Failed	1.00177602	Failed		1.776010753
12-25-039-24W4	22-Jun-22	277350	193000	64700	< 2	11000.00	840000	80000	18.00	3810.00	79.7	< 10	52.0	11.0	< 10	121.00	< 10	< 10	-51.34	-29.36			-20.73			6567.772491	9510.944205	-562.3412688	-693.943052	0.441487091	0.306053609		-558.5095834
Field Duplicate	22-Jun-22	277350	193000																														
Field Duplicate	22-Jun-22			58500	< 2	9780.00	840000	90000	18.00	3650.00	91.9	< 10	59.2	11.6	< 10	147.00	< 10	< 10	-51.25	-30.60	-25.70		-21.35	-31.09	-28.22	6458.54099	9492.021211	-556.349351	-693.221237	0.447531422	0.306775423		-552.465263
12-25-039-24W4	18-Sep-22	14534.57525	118000	73300	< 2	23100.00	810000	90000	10.00	3320.00	39.9	< 10	< 10	10.3	< 10	94.5	35.5	< 10	-44.23	-30.05	-27.52		-20.20	-26.33	-26.06	7308.73166	9653.55756	-600.905115	-699.328667	0.402585913	0.300668004		-597.4107126
12-25-039-24W4	23-Sep-22	2.0678	2000	407	< 2	3.00	780000	220000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-7.99										
12-36-039-24W4	3-Jun-19	0.0618263	44438	37800		< 1																	-20.43			2948		-307.19		0.6928			
12-36-039-24W4	3-Jun-19	0.0618263	44438						< 1	< 1																							
12-36-039-24W4	1-Aug-19			43700		1																											
12-36-039-24W4	9-Aug-19	0.5848	46800						< 1	1																							
12-36-039-24W4	9-Oct-19	0.171169	42716.7																			-53.64	-15.09			2528		-276.05		0.73			
12-36-039-24W4	9-Oct-19	0.171169	42716.7	33700	< 2	< 1	760000	180000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15															
12-36-039-24W4	24-Sep-20	0.133067	56888.2	45200	< 2	< 1	770000	180000	< 1	< 1																							
12-36-039-24W4	26-Jun-21	N/A - Vacuum	N/A - Vacuum	21000	< 2	1	790000	190000	< 1	2	< 10	15.2	10.5	11.4	< 10	22	29	< 10															
12-36-039-24W4	16-Oct-21	0.2967	24094	29800	< 2	1	780000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-20.45			2410.9		-265.601		0.740726			-259.274
12-36-039-24W4	22-Jun-22	< 1000	36500	24400	< 2	1.00	780000	190000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-24.60			2506.587362		-274.3942617		0.731952875			-268.0450207
14-23-039-24W4	27-Sep-20	3447.65	101339	62500	< 2	2400	820000	120000	< 1	< 1		Untraceable			Untraceable		Untraceable	Untraceable				-42.7	-22.92			10814	N/A	-739.78	N/A	0.2602	N/A		
14-23-039-24W4	25-Jun-21	N/A - Vacuum	N/A - Vacuum	74500	< 2	473	780000	140000			< 10	< 10	< 10	30	< 10	< 10	< 10	< 10															

INTEGRATED SUSTAINABILITY

Table 5: SOIL GAS ANALYTICAL RESULTS: MENTHANE ISOTOPE ABUNDANCE

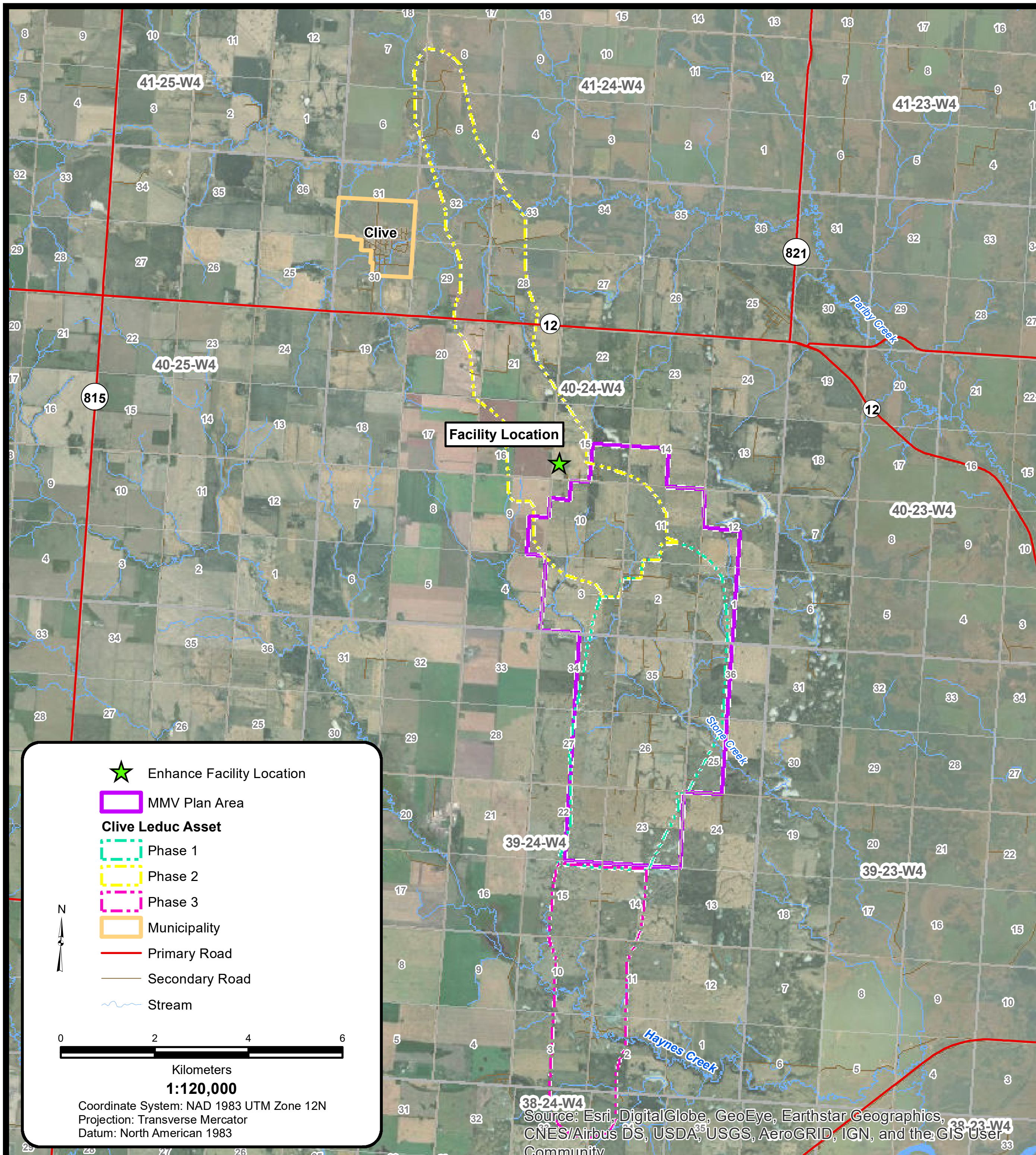
Client Name: Enhance Energy Inc **Project Number:** CP22-EEI-01-00 **Date:** February 10, 2023 **Rev #:** A

		Field Parameters		AGAT Breathing Air							AGAT VOC Gas								Carbon 13 - U of A							Carbon 14 - University of Ottawa							
Sampling ID	Date (dd-mmm-yy)	CH4 ppm	CO2 ppm	Carbon Dioxide (CO2) -BA ppmv	Carbon Monoxide (CO) - BA ppmv	Methane - BA ppmv	Nitrogen (N2) - BA ppmv	Oxygen (O2) - BA ppmv	vHH - BA ppmv	vNMH - BA ppmv	2,2,4-Trimethylpentane ppm	Benzene ppm	Cyclohexane ppm	Cyclopentane ppm	Ethylbenzene ppm	Methylcyclohexane ppm	Toluene ppm	Xylenes ppm	d13C-C1 ‰	d13C-C2 ‰	d13C-C3 ‰	d13C-CH4 ‰	d13C-CO2 ‰	d13C-iC4 ‰	d13C-nC4 ‰	14C in CO2 yr BP	14C-CH4 yr BP	del14C in CO2 ‰	del14C-CH4 ‰	F14C in CO2 None	F14C-CH4 None	Normalised 14C in CH4 ‰	Normalised 14C in CO2 ‰
14-23-039-24W4	26-Jun-21	/A - Vacuu	/A - Vacuu	74500	< 2	473	780000	140000	< 1	13																							
14-23-039-24W4	27-Jun-21			397	< 2	2	780000	220000	< 1	< 1													-6.87							1.000834257			
14-23-039-24W4	10-Oct-21	140.5	21514	31000	< 2	167	790000	180000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	-69.37				-24.04			12437.4		-789.204		0.212612			-787.388
14-23-039-24W4	16-Oct-21	1.7469	354.5	426	< 2	2	780000	220000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10					-7.52			>Modern		-6.6152		1.00194			1.94373
14-23-039-24W4	22-Jun-22	2500	11000	9680	< 2	11.00	780000	210000	< 1	< 1	12.0	< 10	< 10	< 10	< 10	22.3	< 10	< 10					-22.20			9461.735815	Failed	-694.736057	Failed	0.307934197	Failed		-692.0624608
Field Duplicate	22-Jun-22	2500	11000																														
Field Duplicate	22-Jun-22			8470	< 2	21.00	780000	210000	< 1	< 1	10.0	< 10	< 10	< 10	< 10	17.4	< 10	< 10					-21.82			9461.30312	Failed	-694.719613	Failed	0.307950785	Failed		-692.0458734
14-23-039-24W4	18-Sep-22	17.09325	21500	17400	2.00	13.00	780000	200000	< 1	1.00	14.9	< 10	< 10	< 10	< 10	25.3	< 10	< 10					-22.54			11614.35157		-766.4951766		0.235547375			-764.4494874
Field Duplicate	18-Sep-22	17.09325	21500																														
Field Duplicate	18-Sep-22			15800	2.00	16.00	780000	210000	< 1	< 1	14.9	< 10	< 10	< 10	< 10	25.3	< 10	< 10					-25.57			11645.77121		-767.4067135		0.234627864			-765.3690016
14-26-039-24W4	10-Oct-19	0.561715	56301.5	47900	6	< 1	790000	160000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15				-53.99	-10.25			9993		-714.17		0.2882			
14-26-039-24W4	26-Sep-20	0.39961	90800.6	66800	< 2	2	760000	180000	< 1	< 1												N/A	-25			6795		-570.81		0.4292			
14-26-039-24W4	11-Oct-21	1.4016	11418.5	17900	< 2	1	770000	210000	< 1	< 1	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10															
14-26-039-24W4	23-Sep-22	1.0837	54000	45200	< 2	1.00	770000	190000	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1					-22.52			3715.553718		-375.778397		0.629681896			-370.3154207
08-27-039-24W4	1-Aug-19			85700		7																	-15.75			0							
08-27-039-24W4	12-Aug-19	8.0666	127710						< 1	1													-15.75			0							
08-27-039-24W4	6-Oct-19	1.89603	73680.9	52100	3	2	880000	40000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-8.34			1198		-145.7		0.8615			
08-27-039-24W4	6-Oct-19	31.7778	68075.1	55100	< 2	26	880000	50000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-10.86			1648		-192.25		0.8145			
08-27-039-24W4	12-Oct-19	0.264965	35408.8	28500	< 2	< 1	800000	170000	< 1	< 1		< 0.05			< 0.05		< 0.05	< 0.15					-12.3			4058		-401.59		0.6034			

Notes 1. - in detail data row(s) denotes parameter not analyzed.

INTEGRATED SUSTAINABILITY

Figures



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

enhance

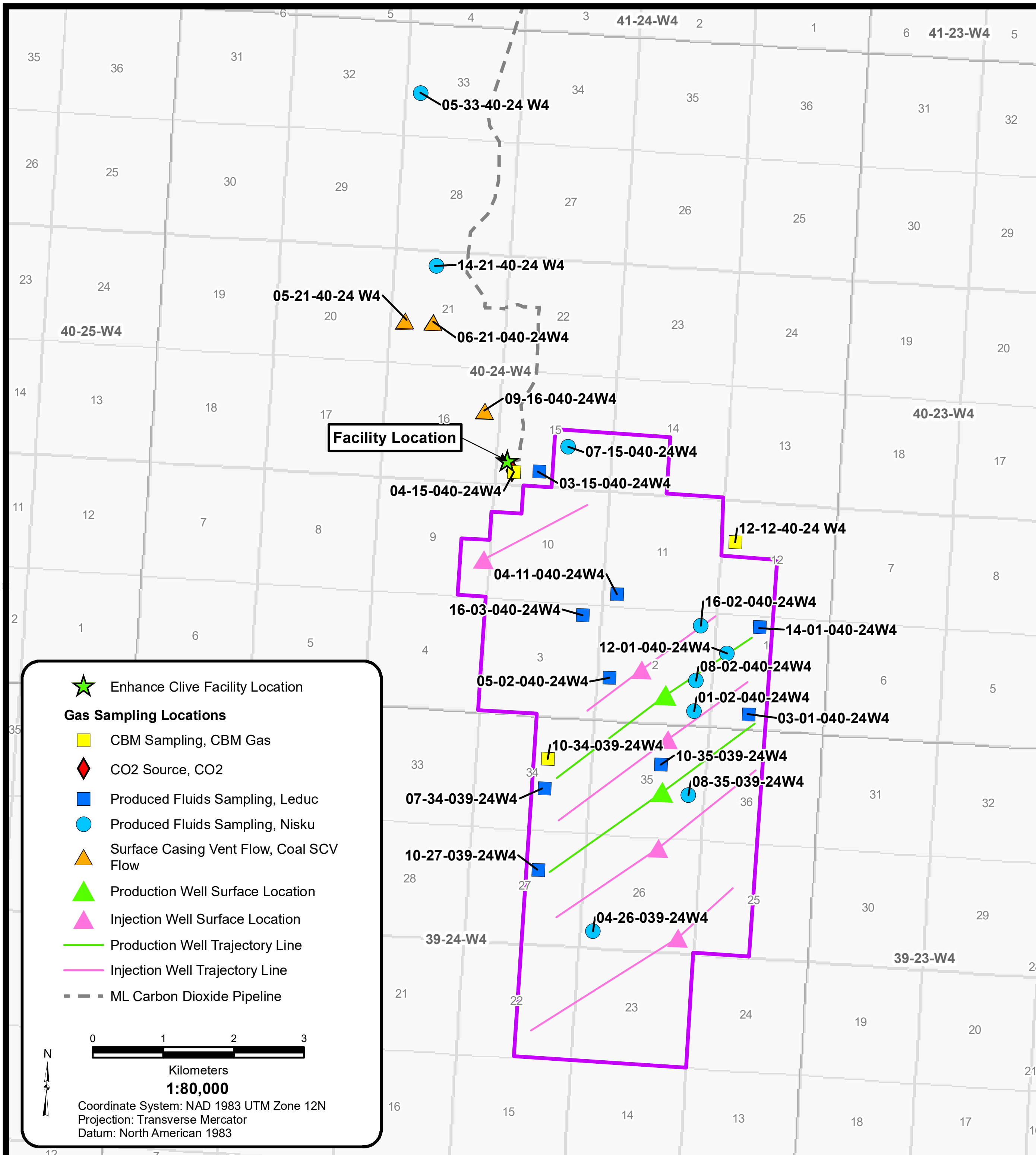
ENHANCE ENERGY INC.
MMV SOIL & GROUNDWATER MONITORING 2022 ANNUAL REPORT
MMV PLAN AREA

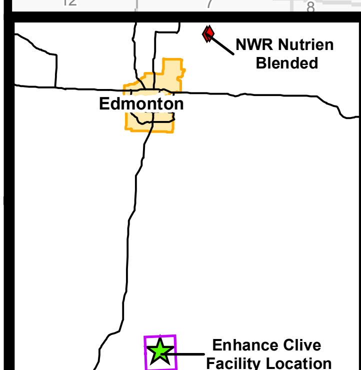
DRAWN BY:	CHECKED BY:	APPROVED BY:
K.MATEUSH	I.GRANT	J.FENNELL

PROJECT NO.	FIGURE NO.	REVISION:
CP22-EEI-01-00	1	0

NOTES: 6-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.
Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig1-CP21-EEI-01-00-MMV_PlanArea-Rev0.mxd





PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

enhance

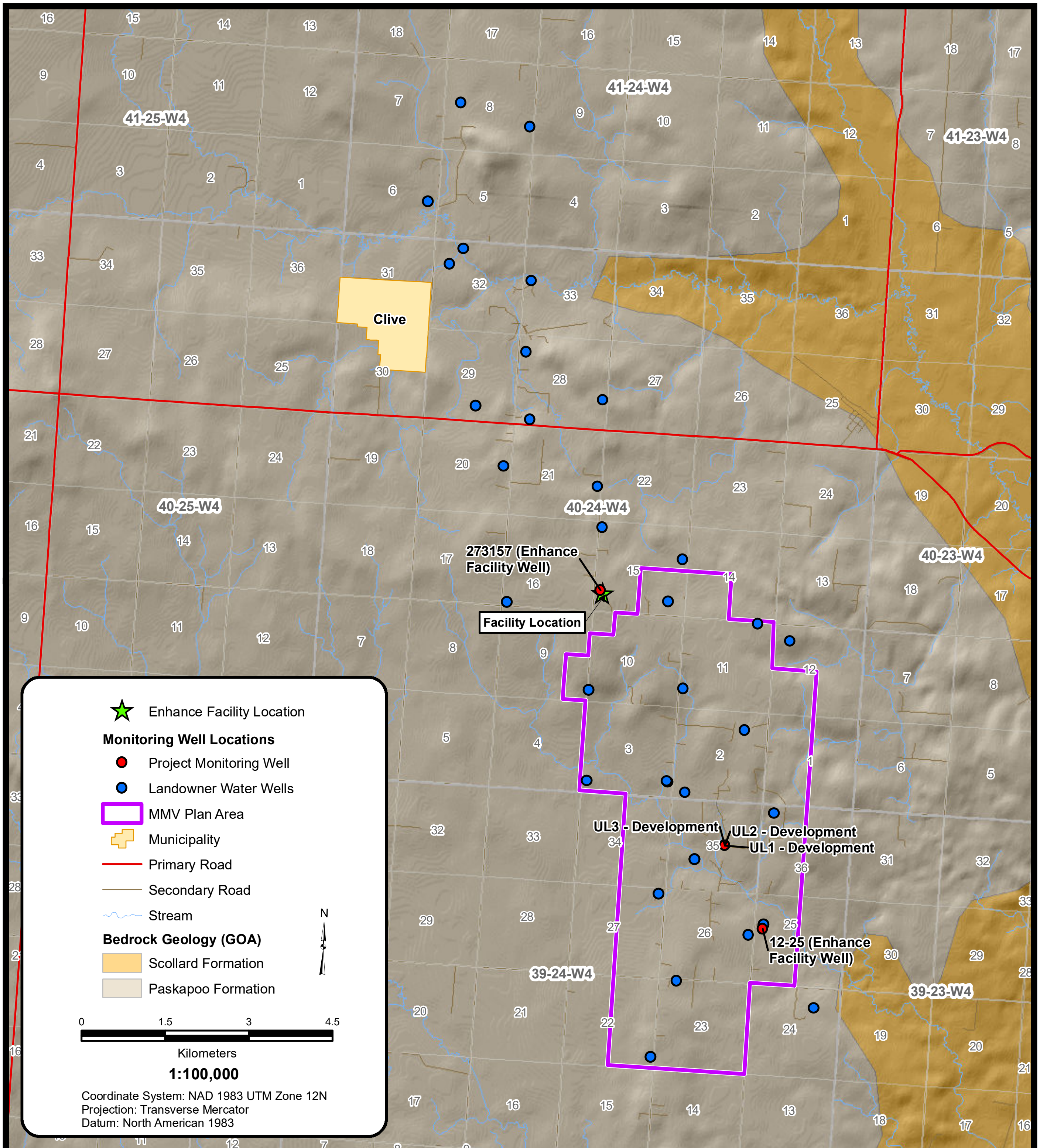
ENHANCE ENERGY INC.
MMV SOIL & GROUNDWATER MONITORING 2022 ANNUAL REPORT
GAS SAMPLING LOCATIONS

DRAWN BY:	CHECKED BY:	APPROVED BY:
K.MATEUSH	J.FENNELL	I.GRANT

PROJECT NO.	FIGURE NO.	REVISION:
CP22-EEI-01-00	2	0

NOTES: 15-MAR-23
Source: MMV Plan Area provided by Enhance. Production and Injection data, georeferenced in from Enhance_Final_2020HMP_MAR2021_PublicVersion.pdf. Pipelines providedd by the Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig2-CP21-EEI-01-00-GasSamplingLocations-Rev0.mxd.



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

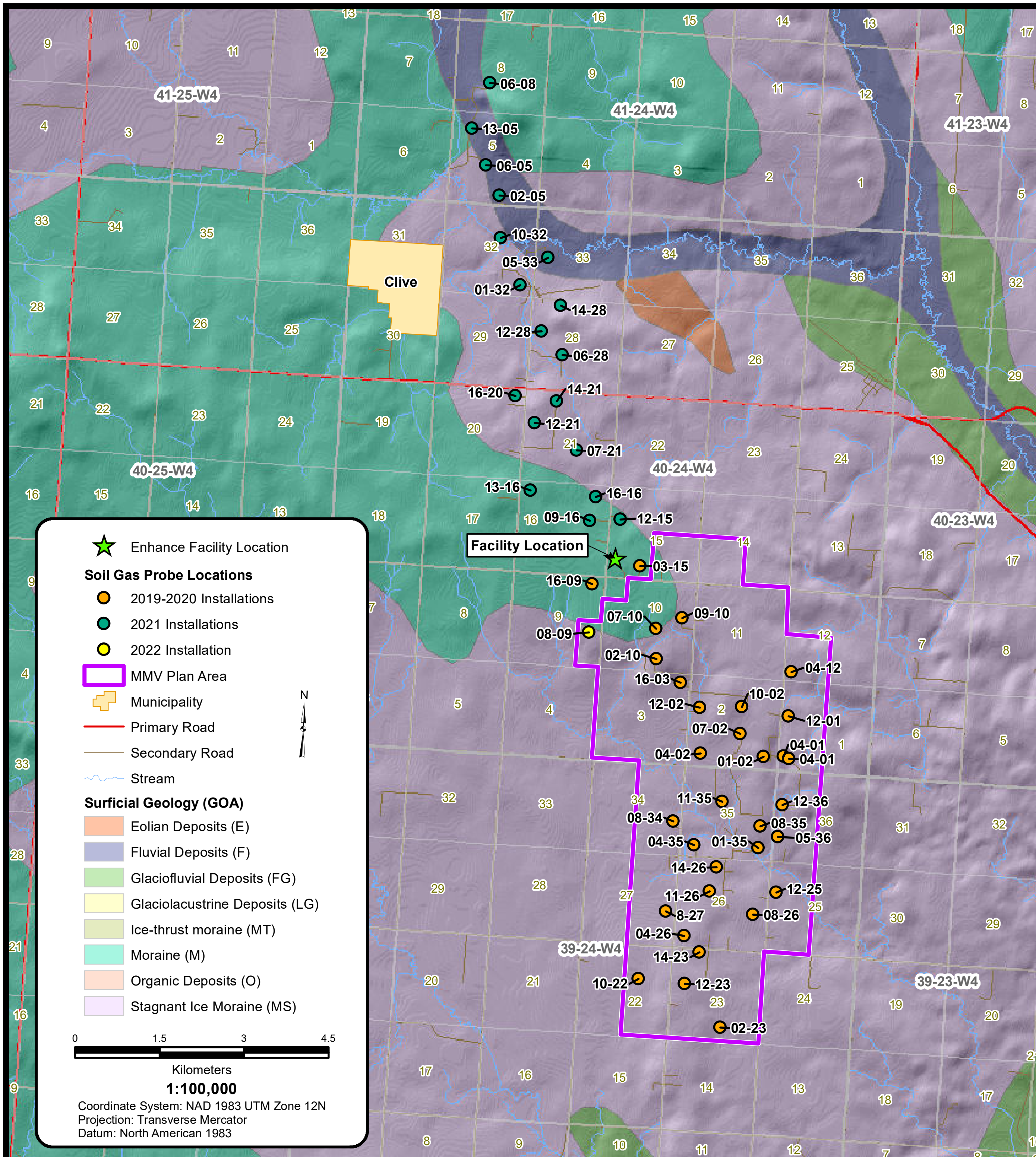
enhance

ENHANCE ENERGY INC.
MMV SOIL & GROUNDWATER MONITORING 2022 ANNUAL REPORT
MONITORING WELL NETWORK

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 3	REVISION: 1

NOTES: 21-MAR-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams and Bedrock Geology from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig3-CP21-EEI-01-00-MonitoringWellNetwork-Rev1.mxd.



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

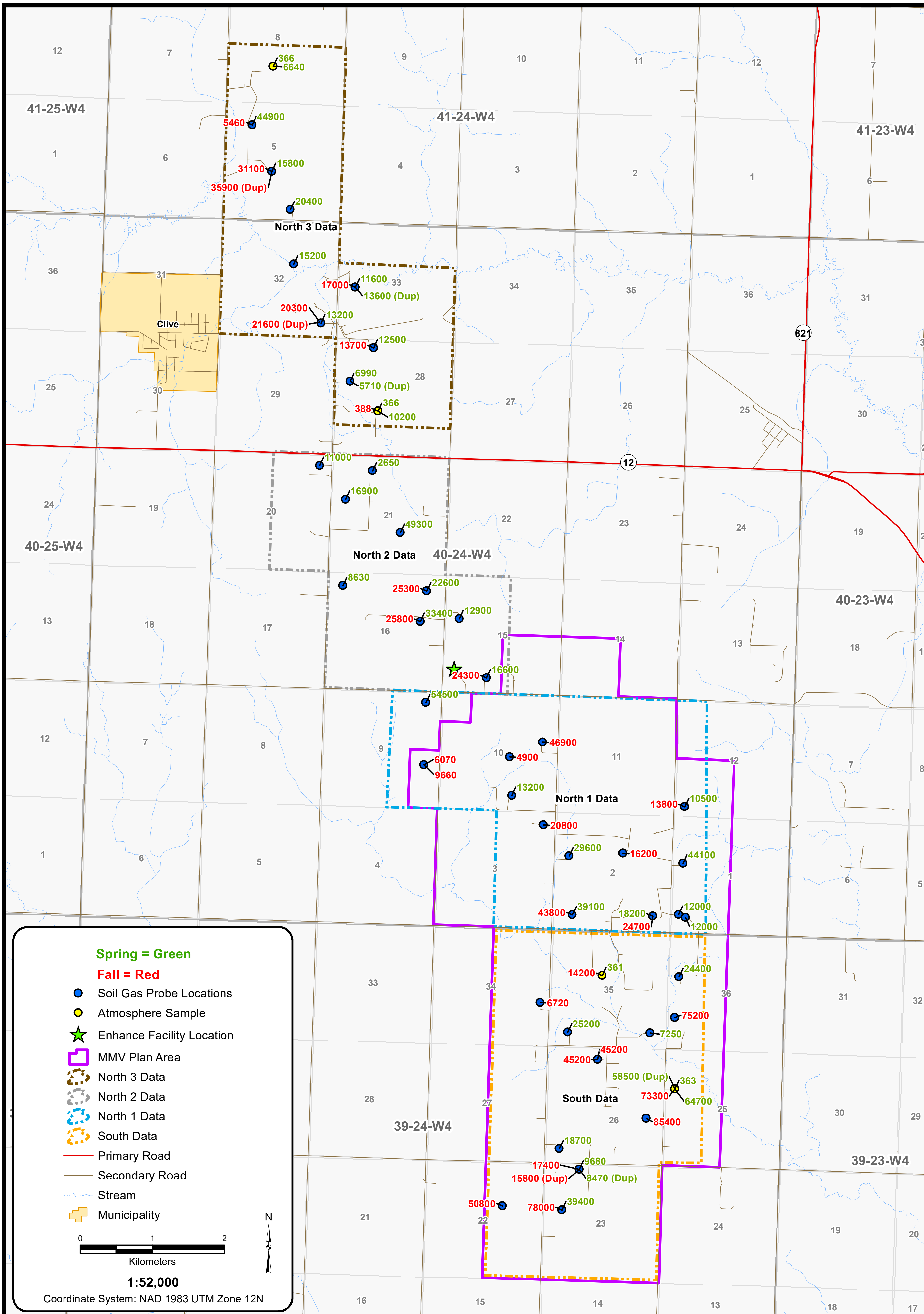
enhance

ENHANCE ENERGY INC.
MMV SOIL & GROUNDWATER MONITORING 2022 ANNUAL REPORT
SOIL GAS PROBE NETWORK

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 4	REVISION: 0

NOTES: 27-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams and Surficial Geology from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig4-CP21-EEI-01-00-SoilGasProbes-Rev0.mxd



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

enhance

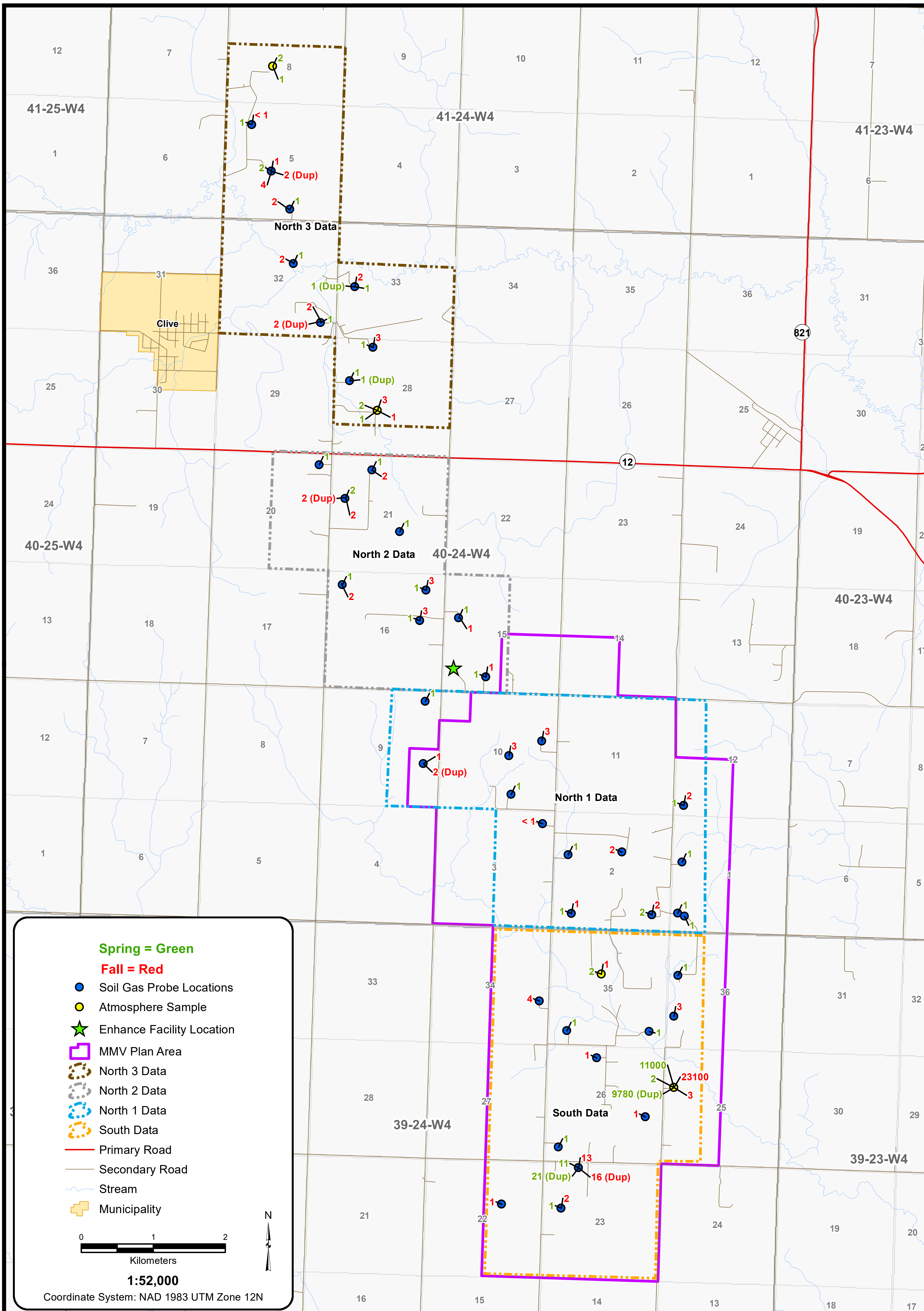
ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
CO_2 SPRING AND FALL 2022 RESULTS

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 5	REVISION: 0

NOTES: 28-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Saved: 2/28/2023 8:03:51 AM

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig5-CP22-EEI-01-00-SoilGas_CO2_Fall_Spring_2022_Rev0.mxd.



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

enhance

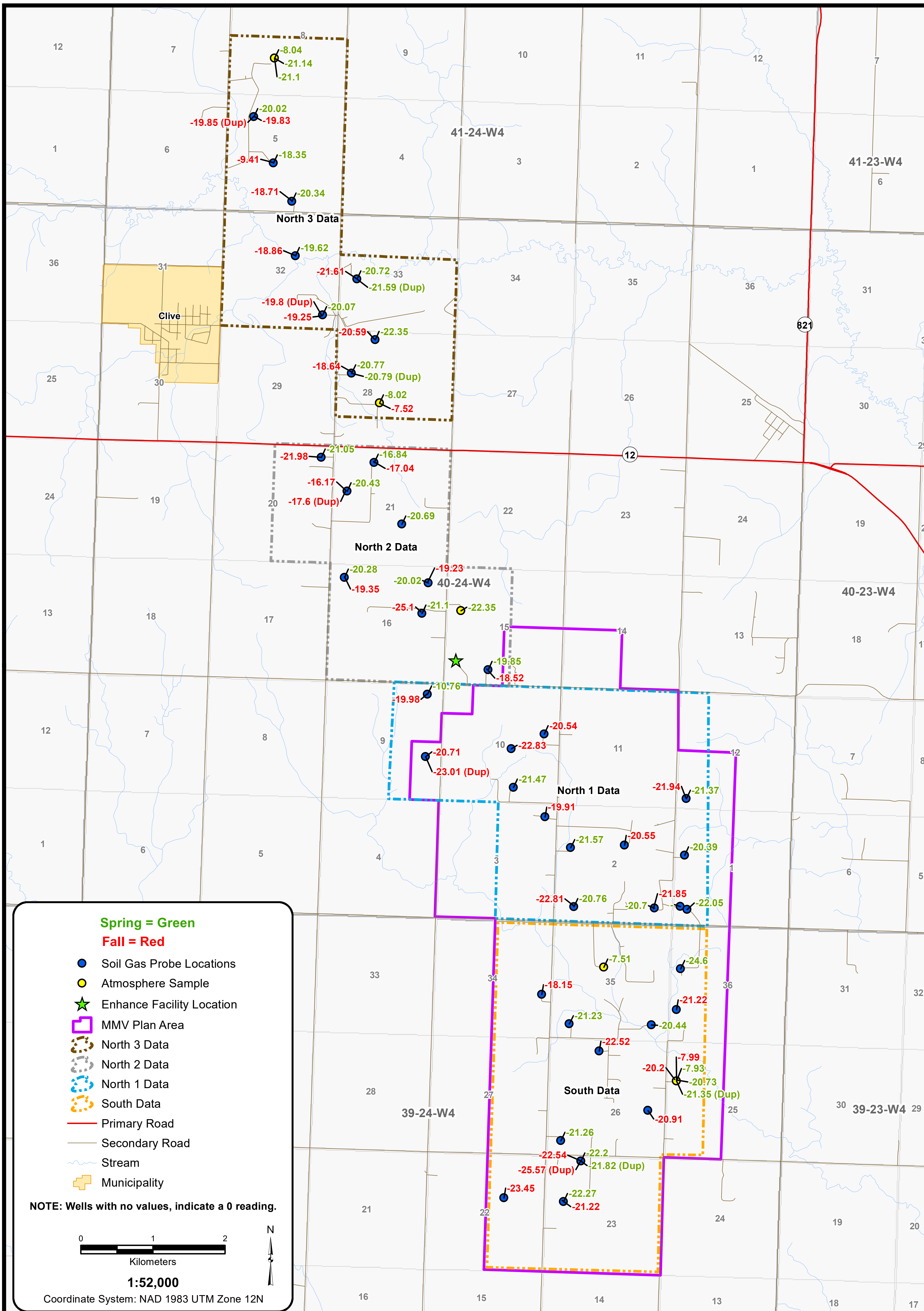
ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
CH4 SPRING AND FALL 2022 RESULTS

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 6	REVISION: 0

NOTES: 28-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig6-CP22-EEI-01-00-SoilGas_CH4_Fall_Spring2022_Rev0.mxd

Saved: 2/28/2023 8:07:03 AM



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

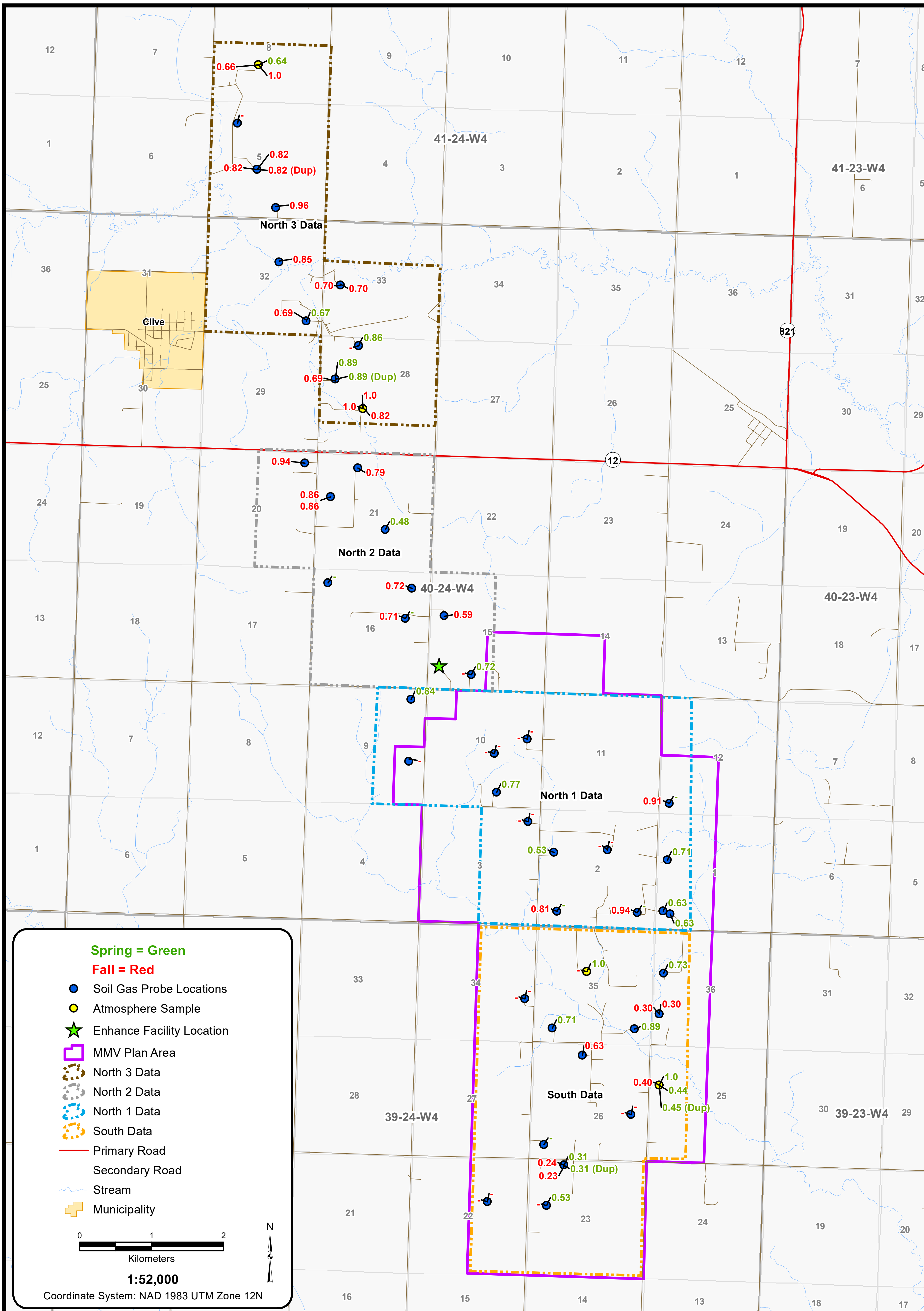
enhance

ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
D13C-CO2 SPRING AND FALL 2022 RESULTS

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 7	REVISION: 0

NOTES: 28-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig7-CP22-EEI-01-00-SoilGas_D13C_CO2_Spring_and_Fall_2022_Rev0.mxd, Saved: 2/28/2023 8:07:23 AM



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

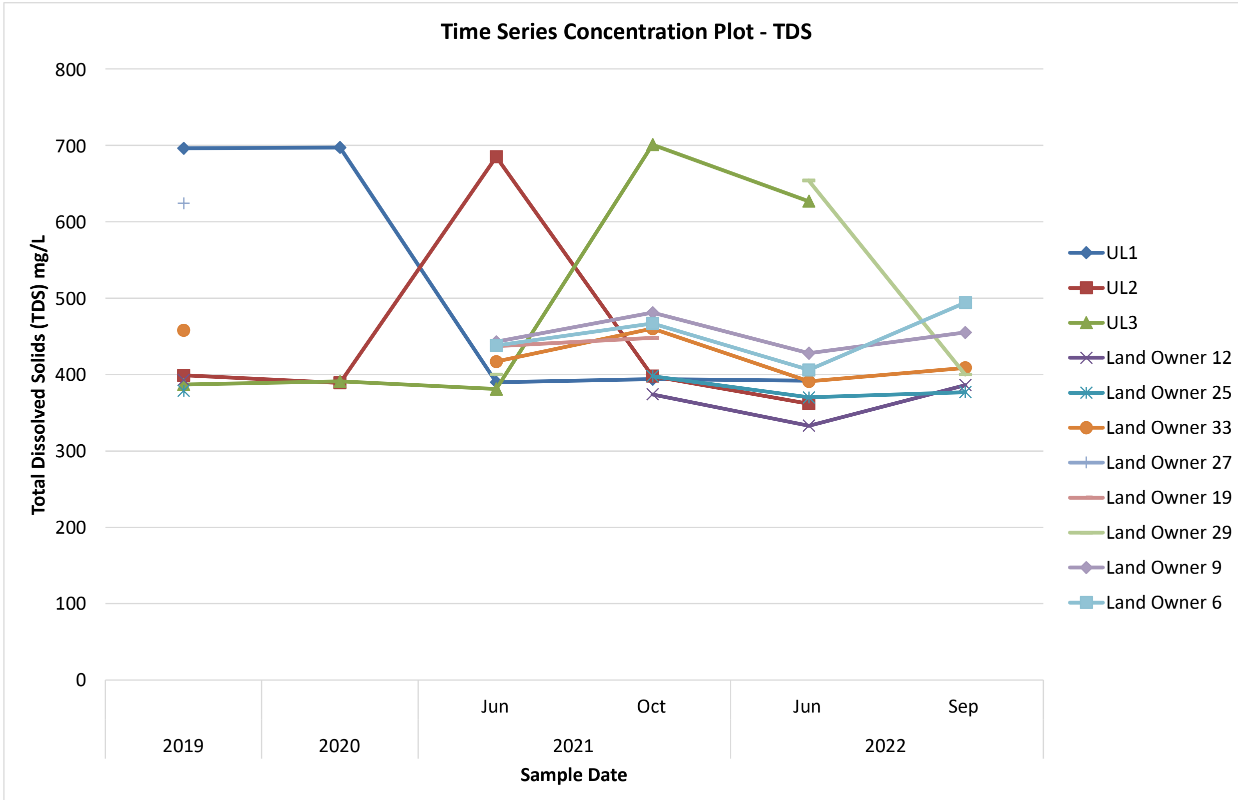
enhance

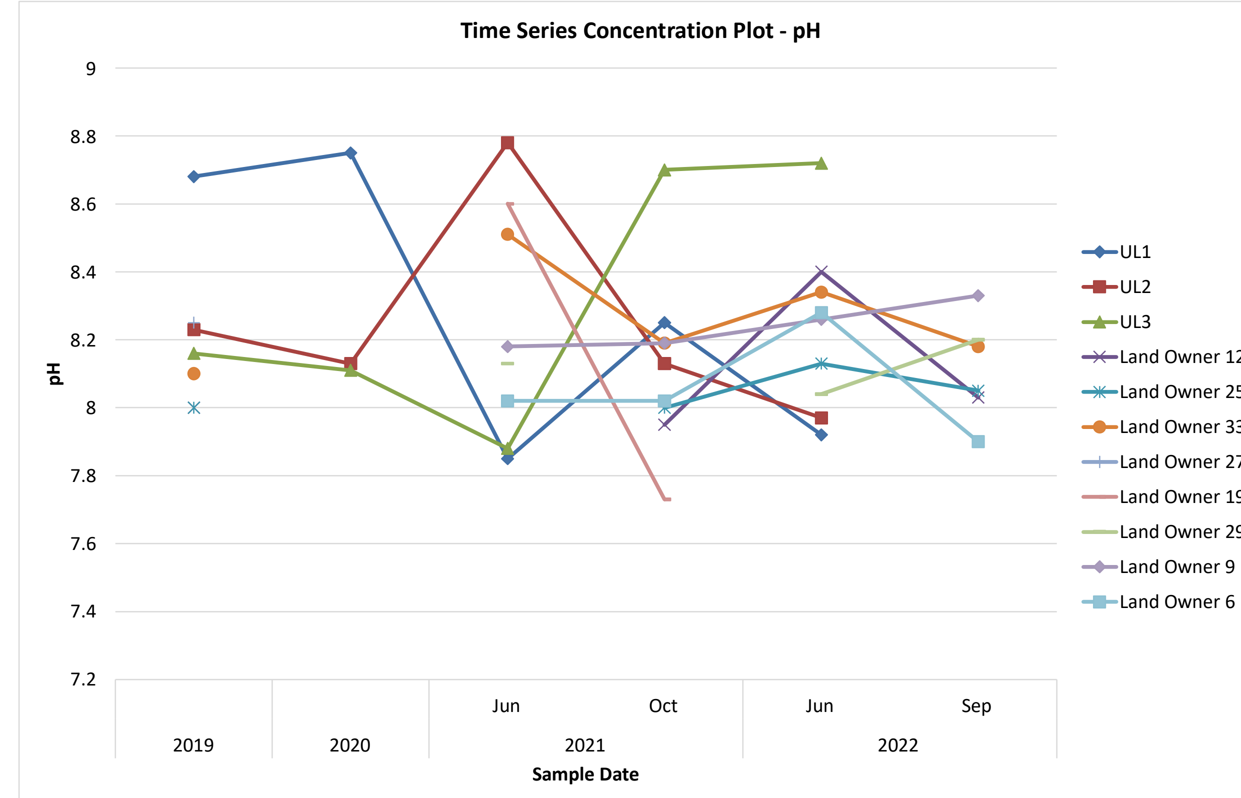
ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
F14C CO2 SPRING AND FALL 2021 RESULTS

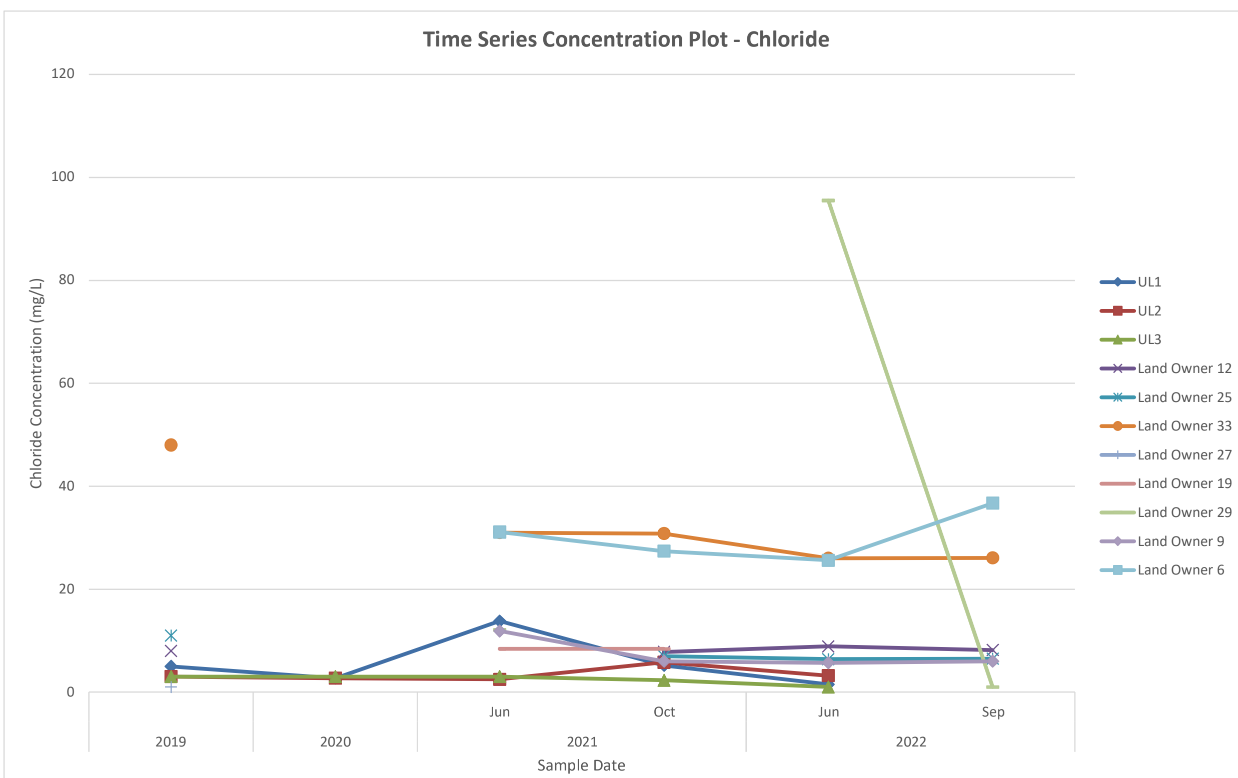
DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 8	REVISION: 0

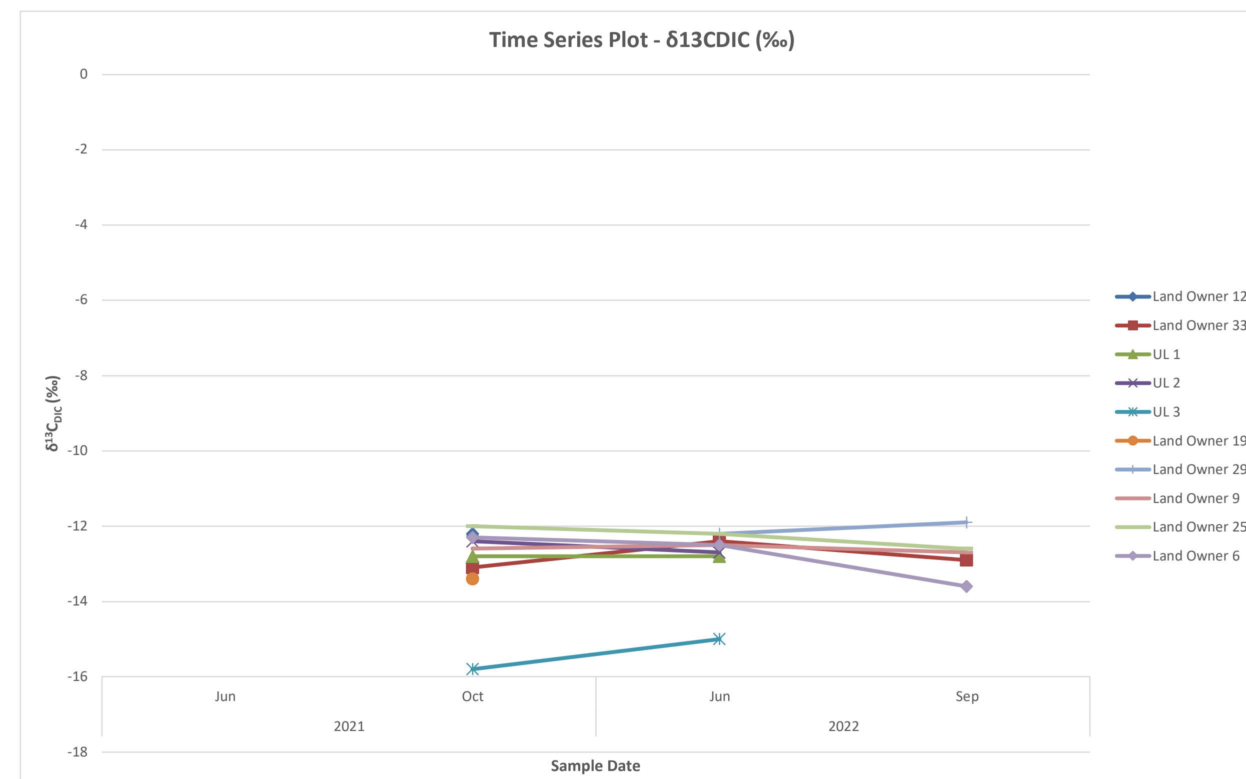
NOTES: 28-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Fig8-CP22-EEI-01-00-SoilGas_F14C_CO2_Spring_and_Fall_2022_Rev0.mxd. Saved: 2/28/2023 8:07:47 AM



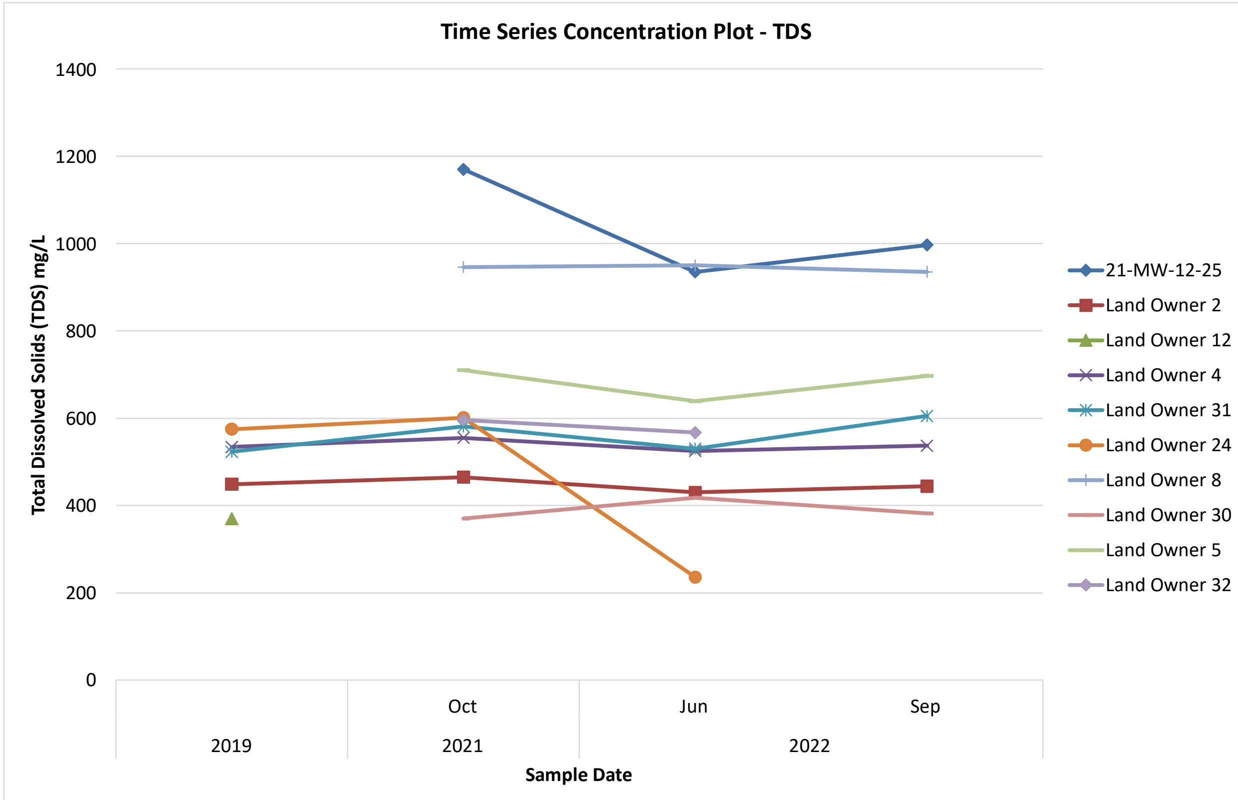


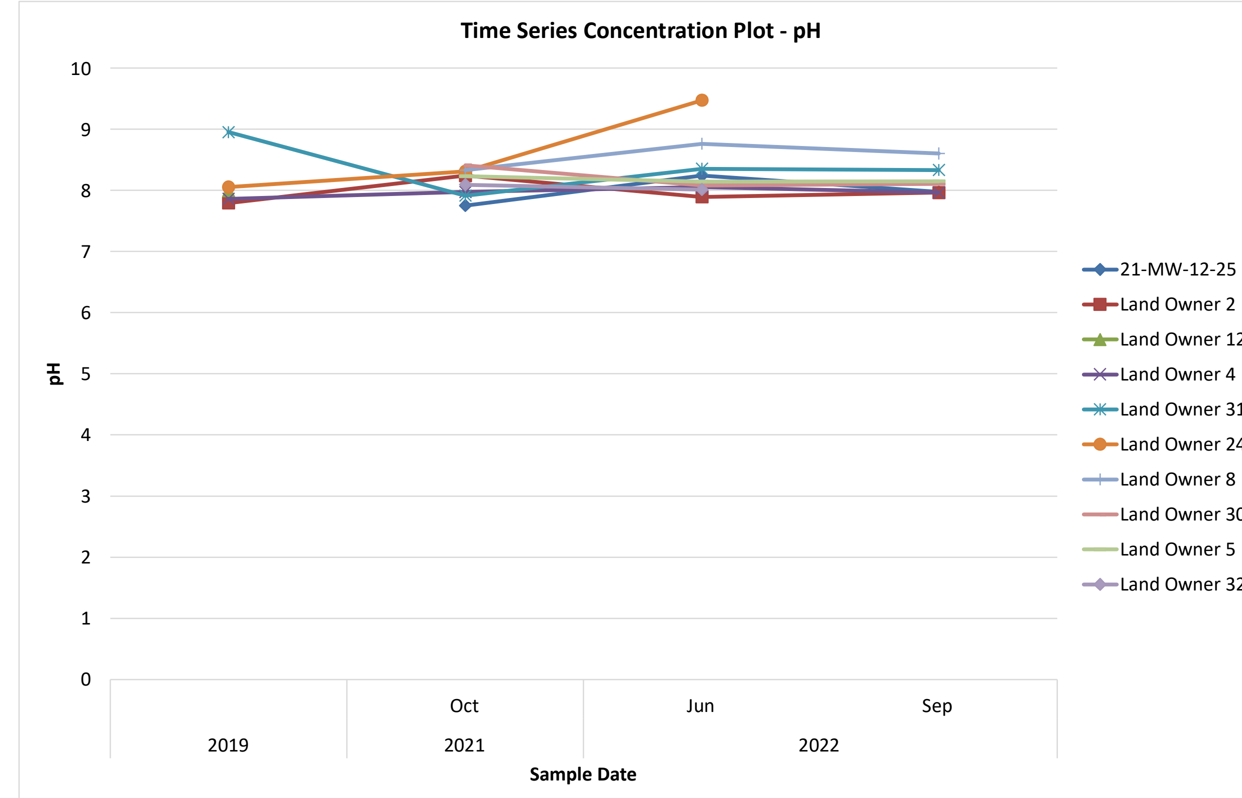


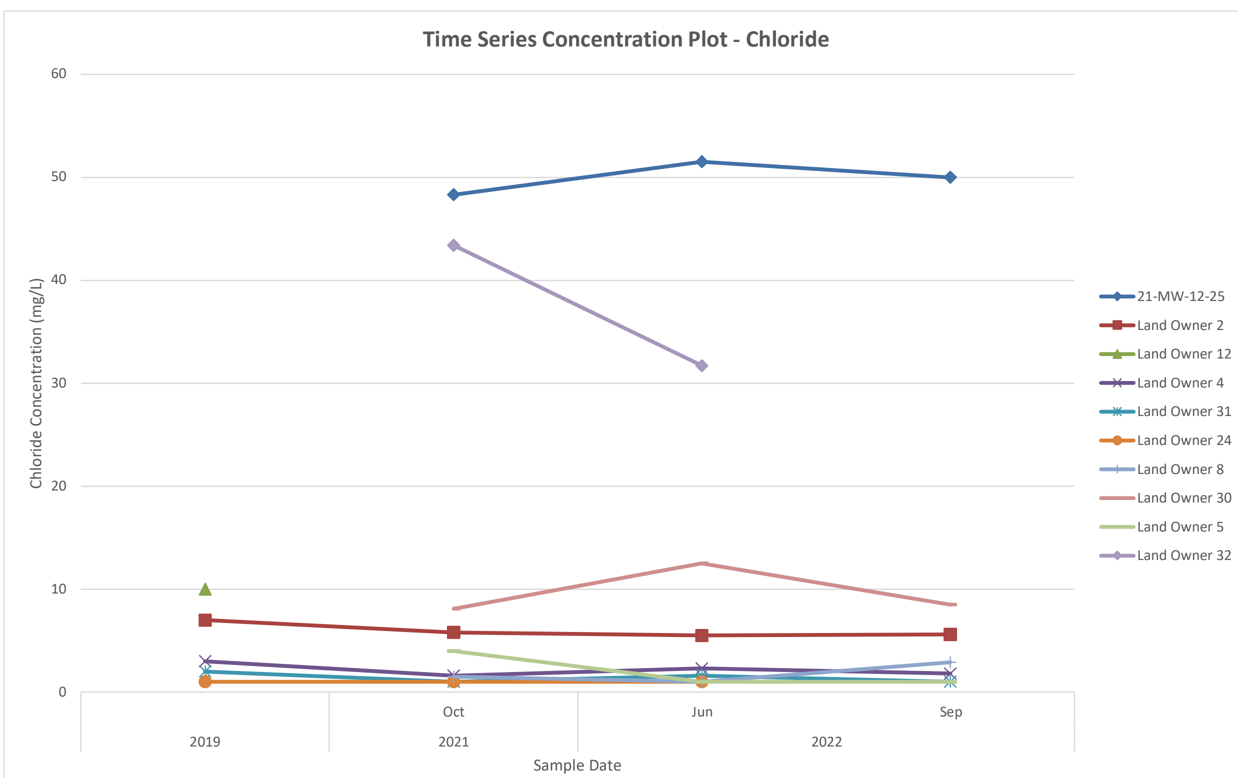


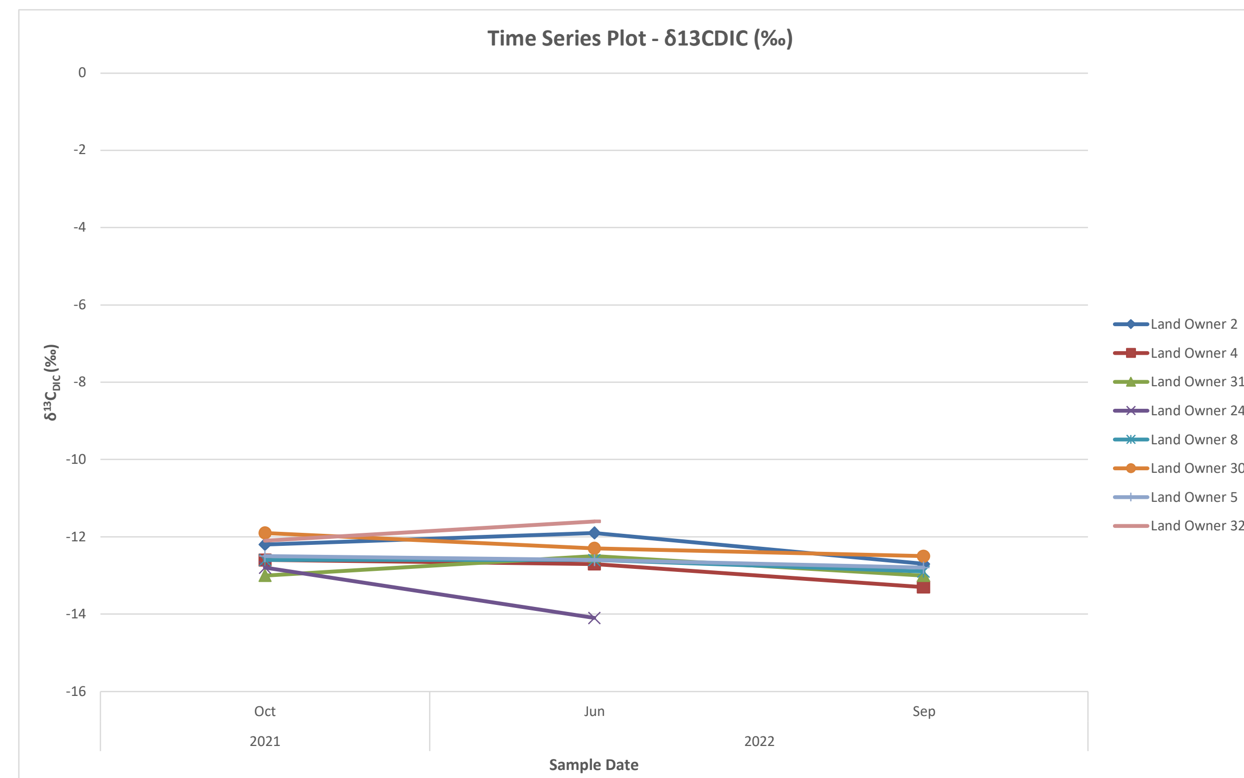
Notes:

PREPARED BY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Groundwater Time Series Concentration Plot - North 1 Data
CLIENT	DRAWN BY: J. Cruz; CHECKED BY: J. Fennell; APPROVED BY: E. Guzman; DATE: February 13, 2023
	SCALE: -; PROJECT NO.: CP22-EEI-01-00; FIGURE NO.: FIGURE 9; REVISION: B



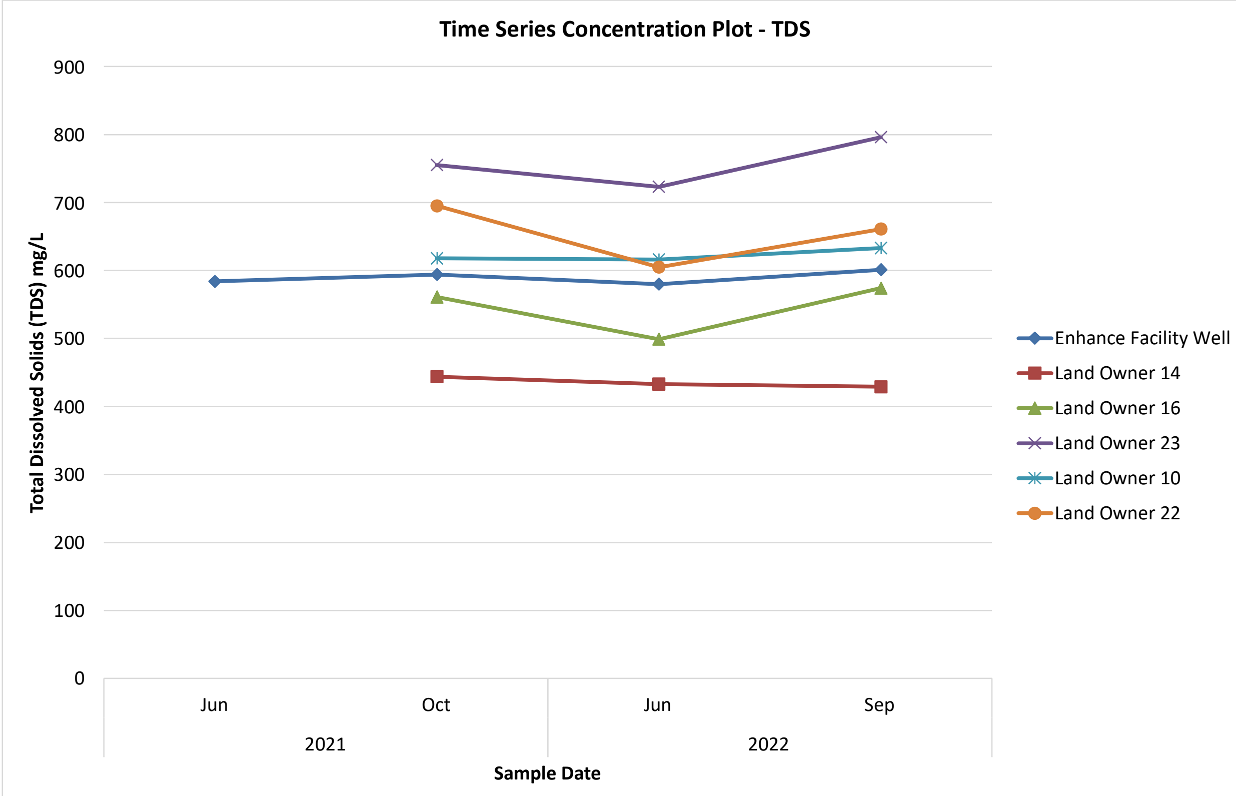


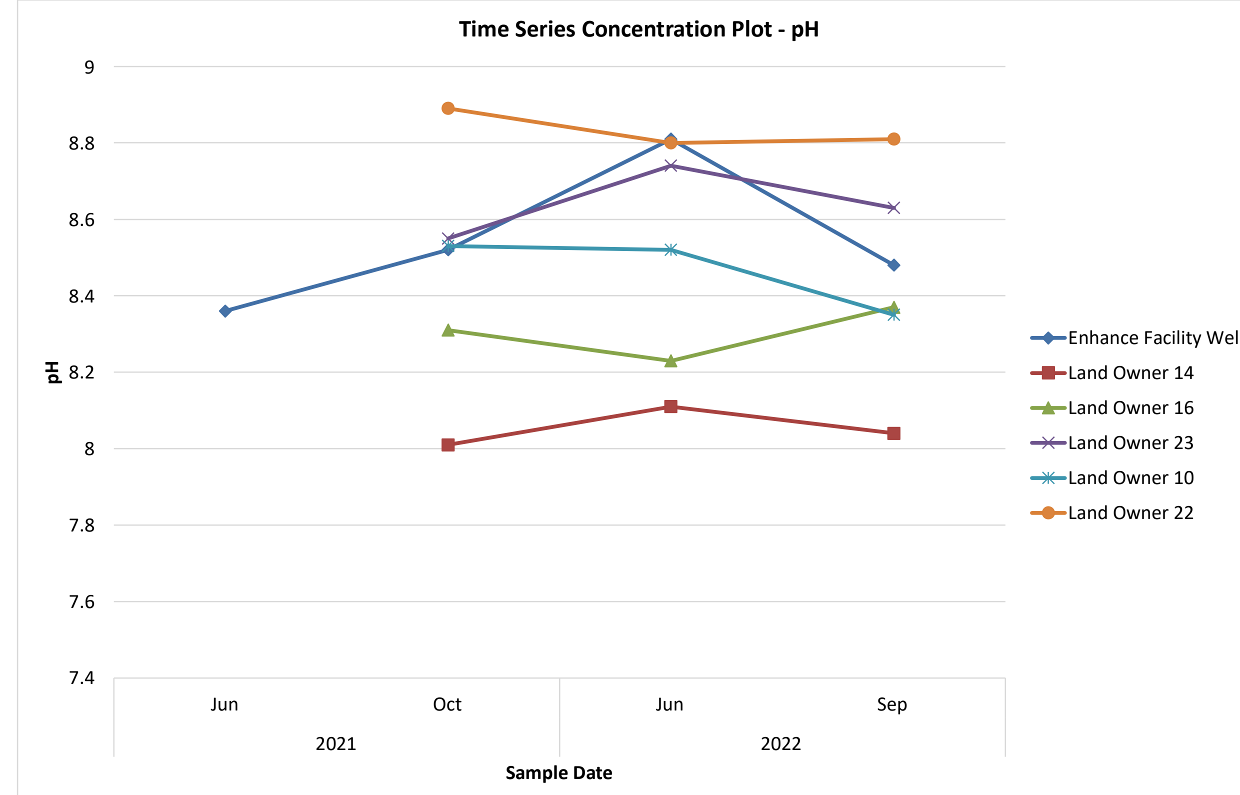


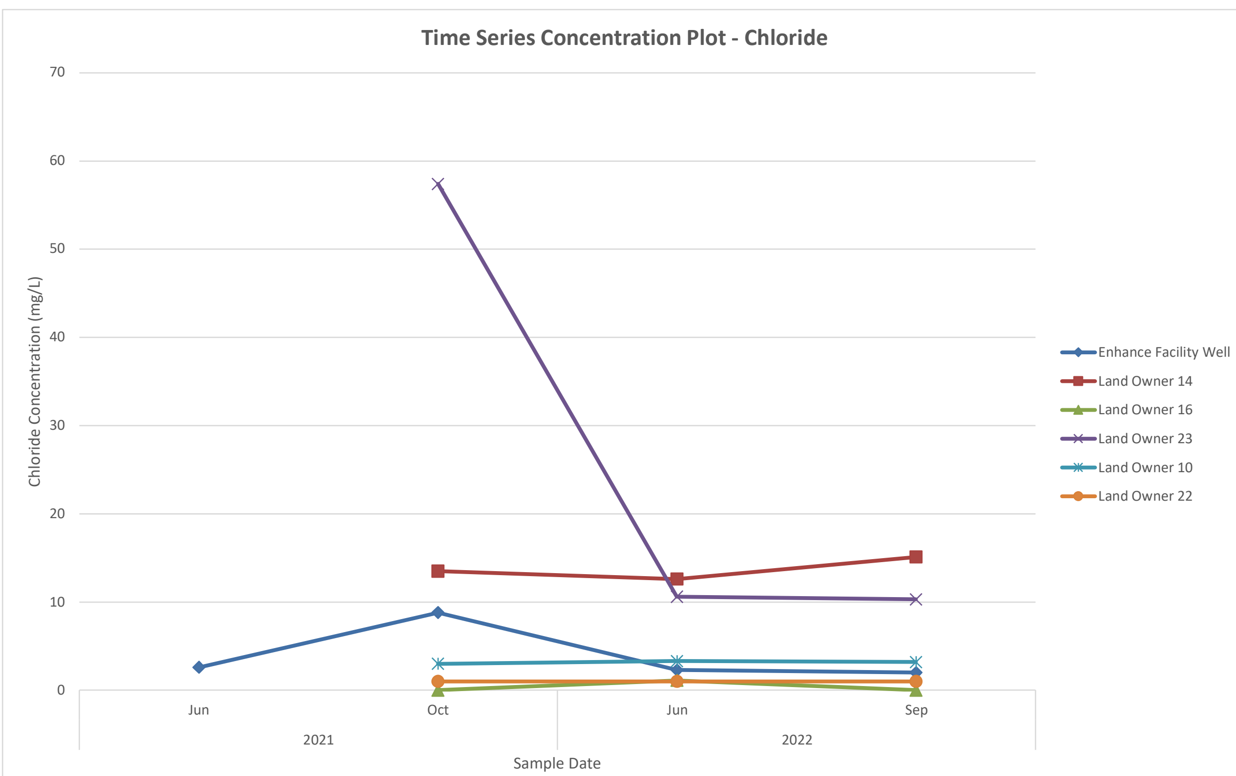


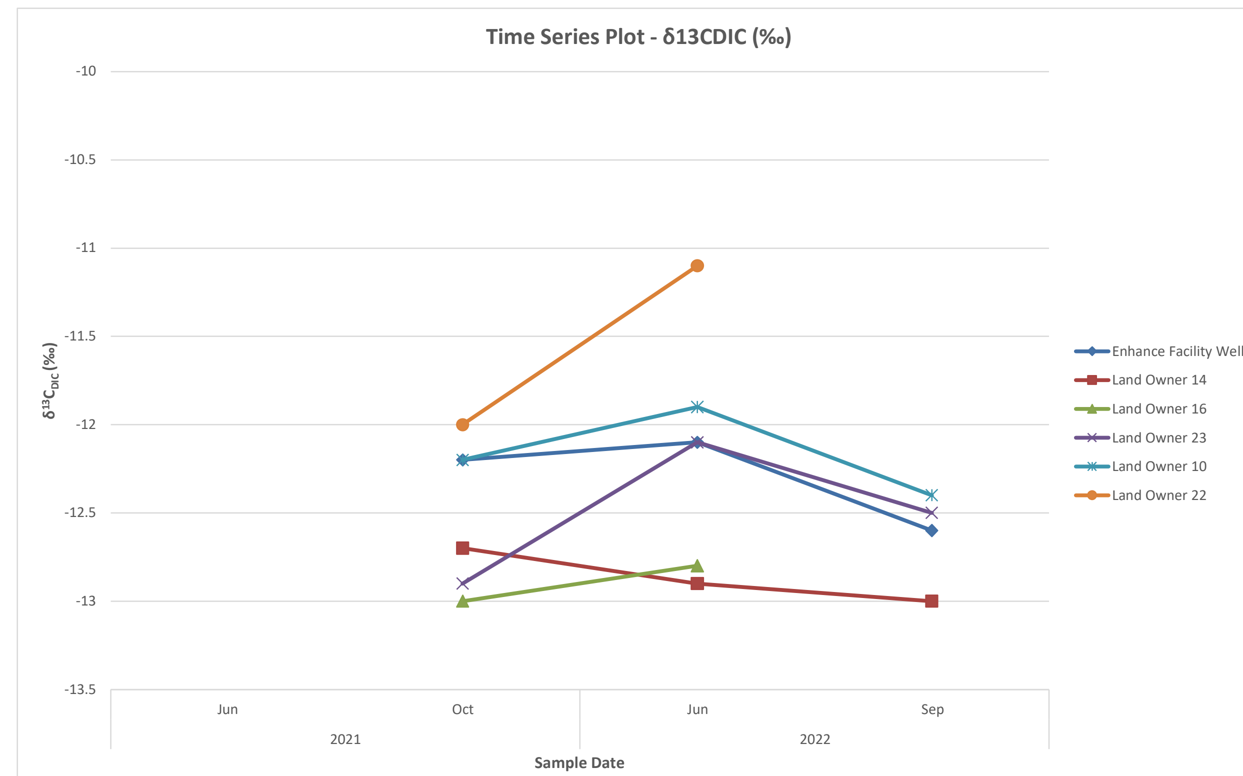
Notes:

PREPARED BY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Groundwater Time Series Concentration Plot - South Data			
INTEGRATED SUSTAINABILITY				
CLIENT: enhance	DRAWN BY: J. Cruz	CHECKED BY: J. Fennell	APPROVED BY: E. Guzman	DATE: February 13, 2023
	SCALE: -	PROJECT NO: CP22-EEI-01-00	FIGURE NO: FIGURE 10	REVISION: B



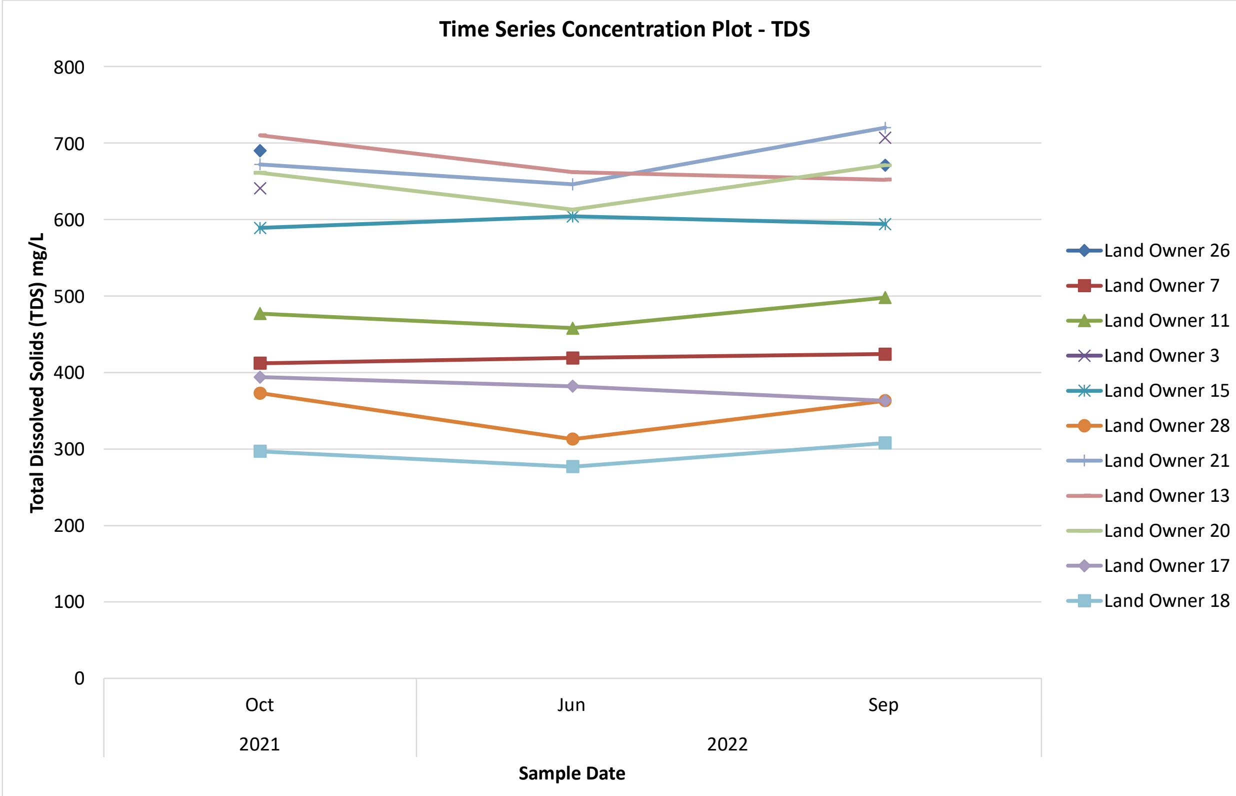


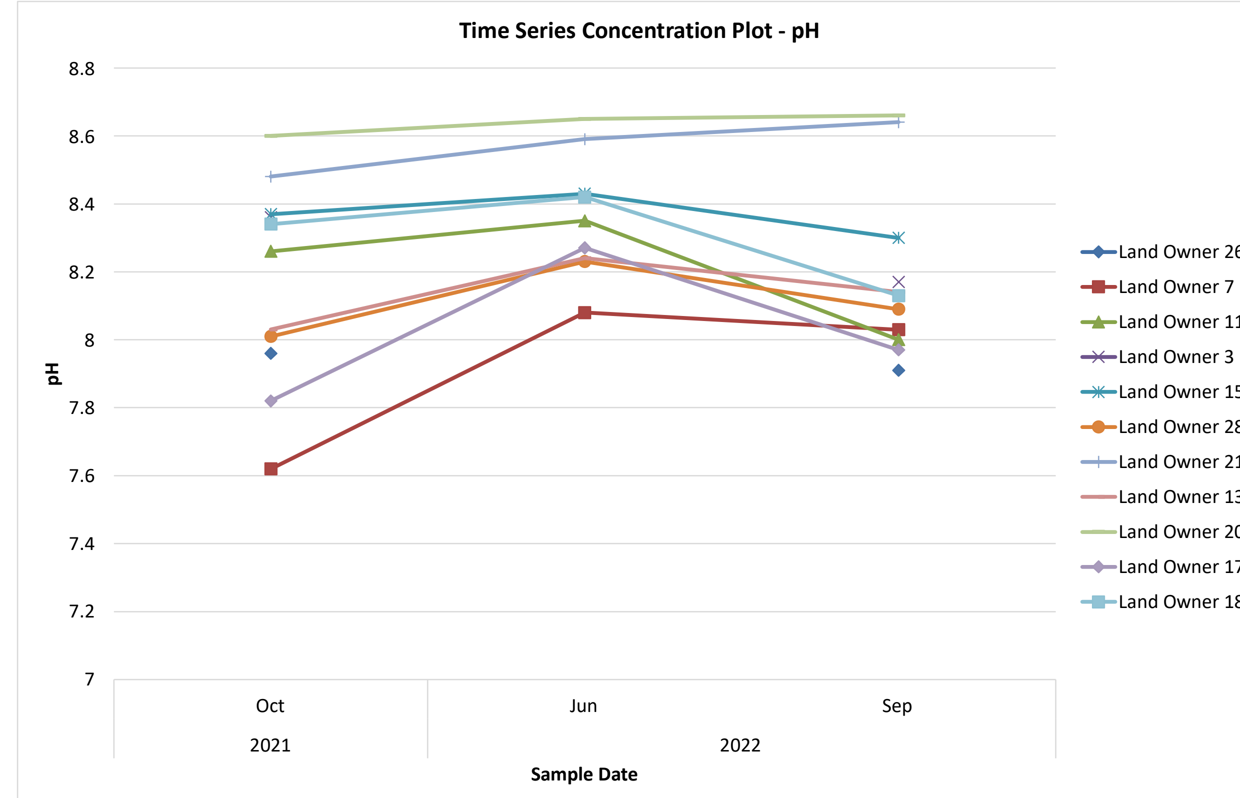


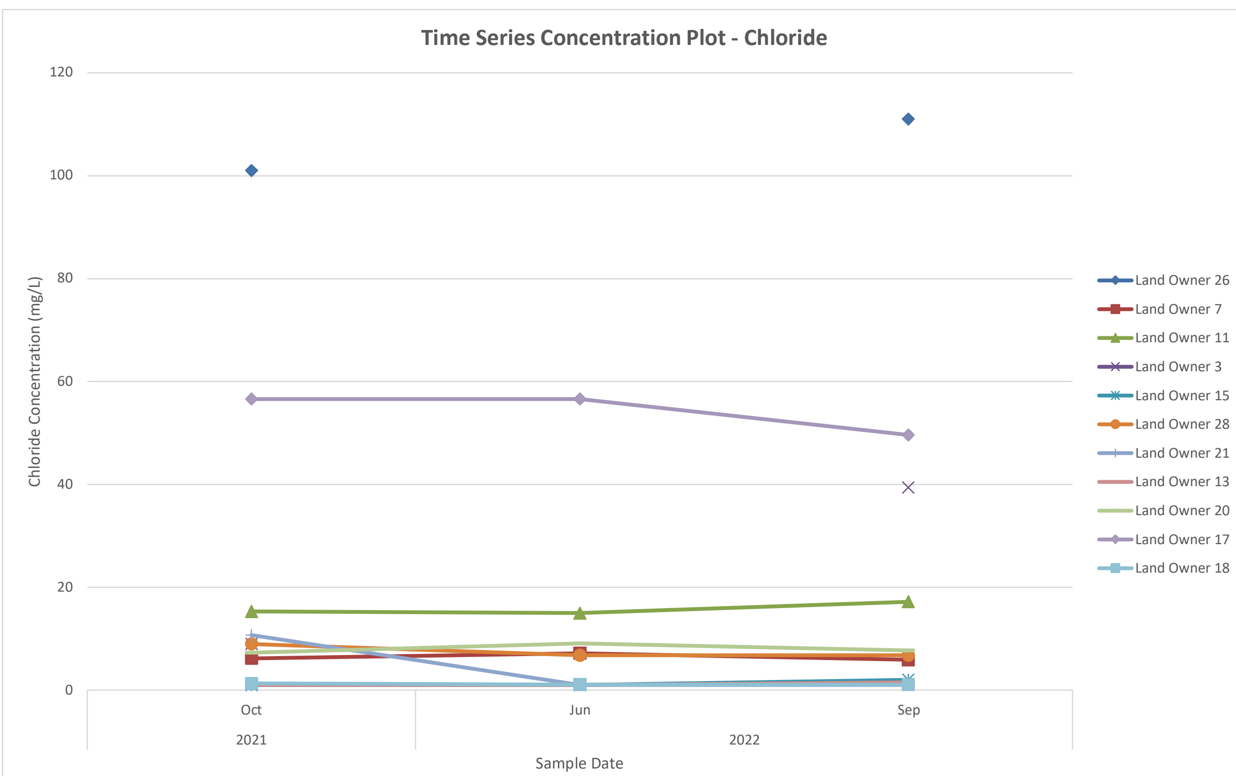


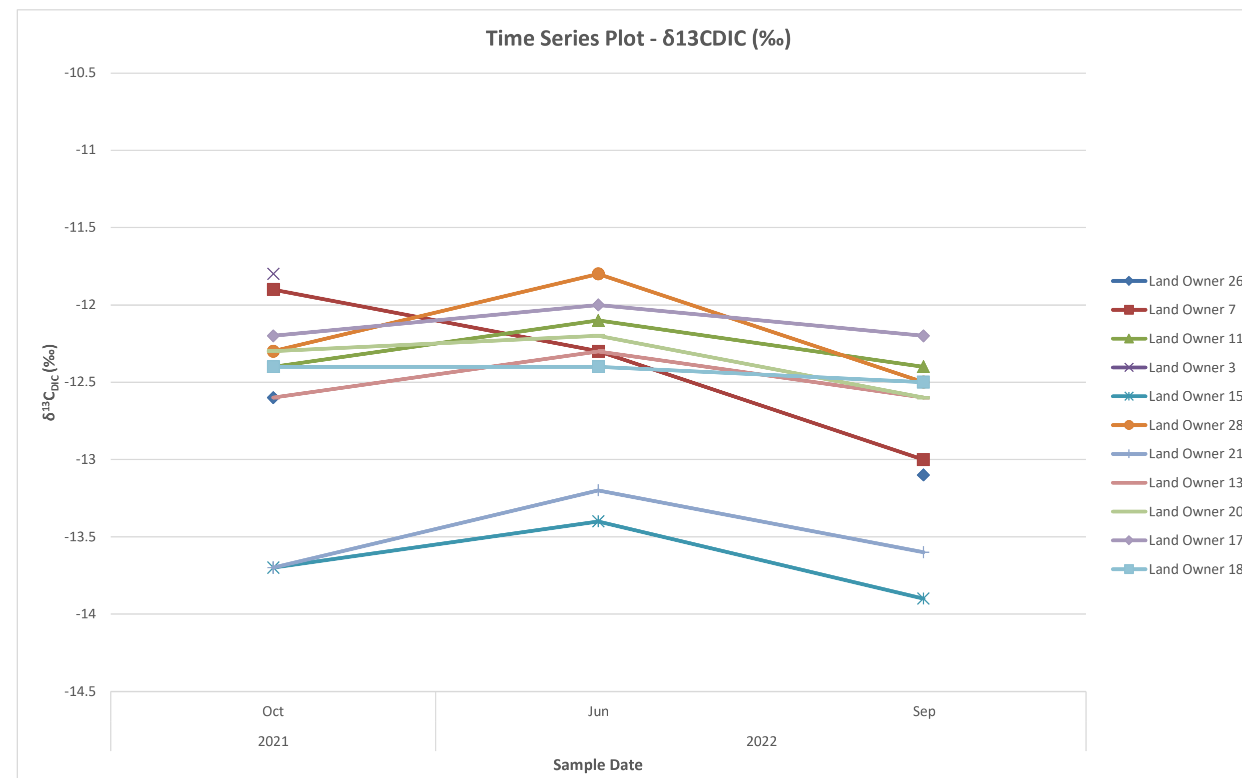
Notes:

PREPARED BY: INTEGRATED SUSTAINABILITY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Groundwater Time Series Concentration Plot - North 2 Data			
CLIENT: enhance	DRAWN BY: J. Cruz	CHECKED BY: J. Fennell	APPROVED BY: E. Guzman	DATE: February 13, 2023
	SCALE: -	PROJECT NO.: CP22-EEI-01-00	FIGURE NO.: FIGURE 11	REVISION: B



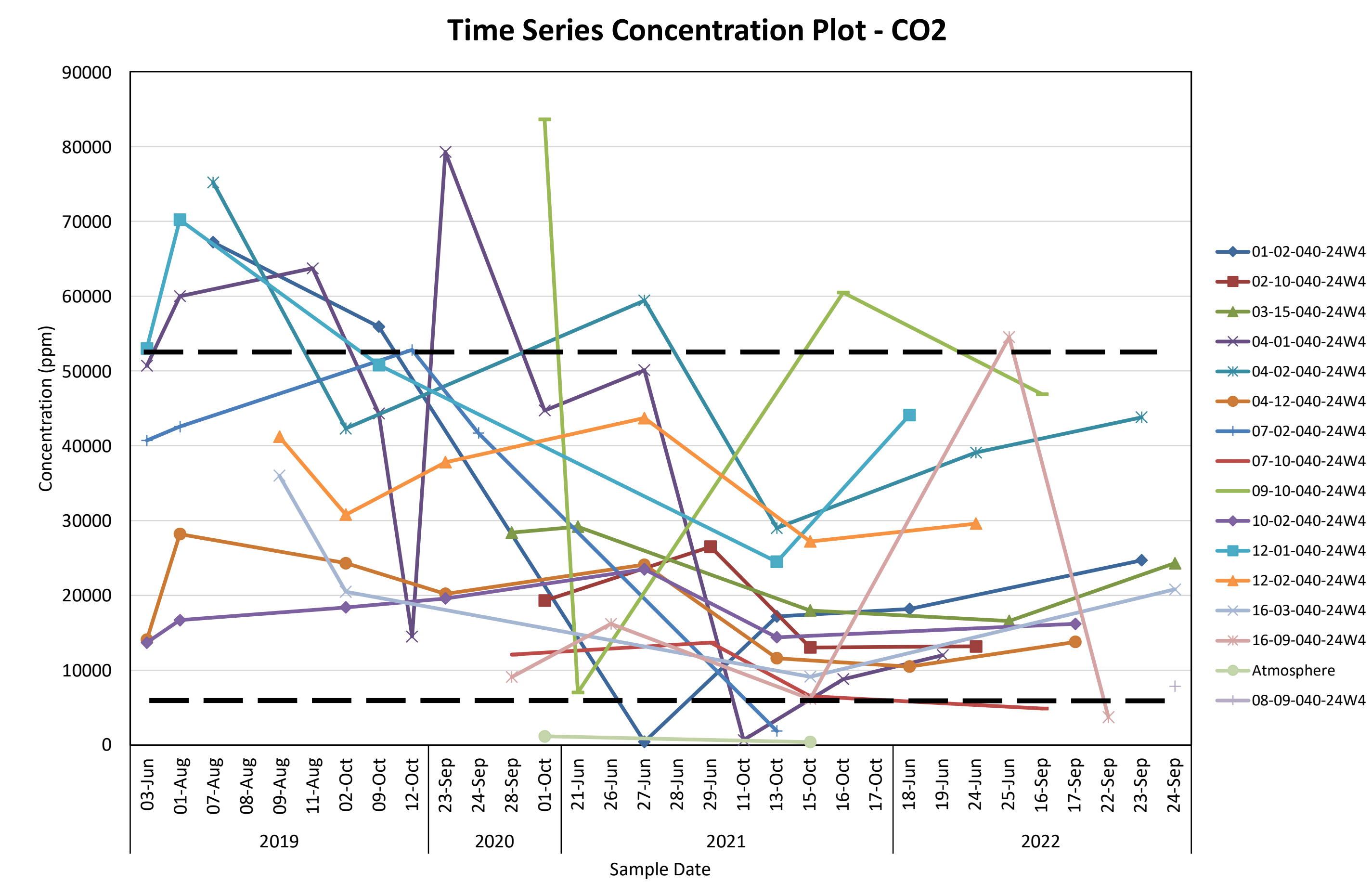


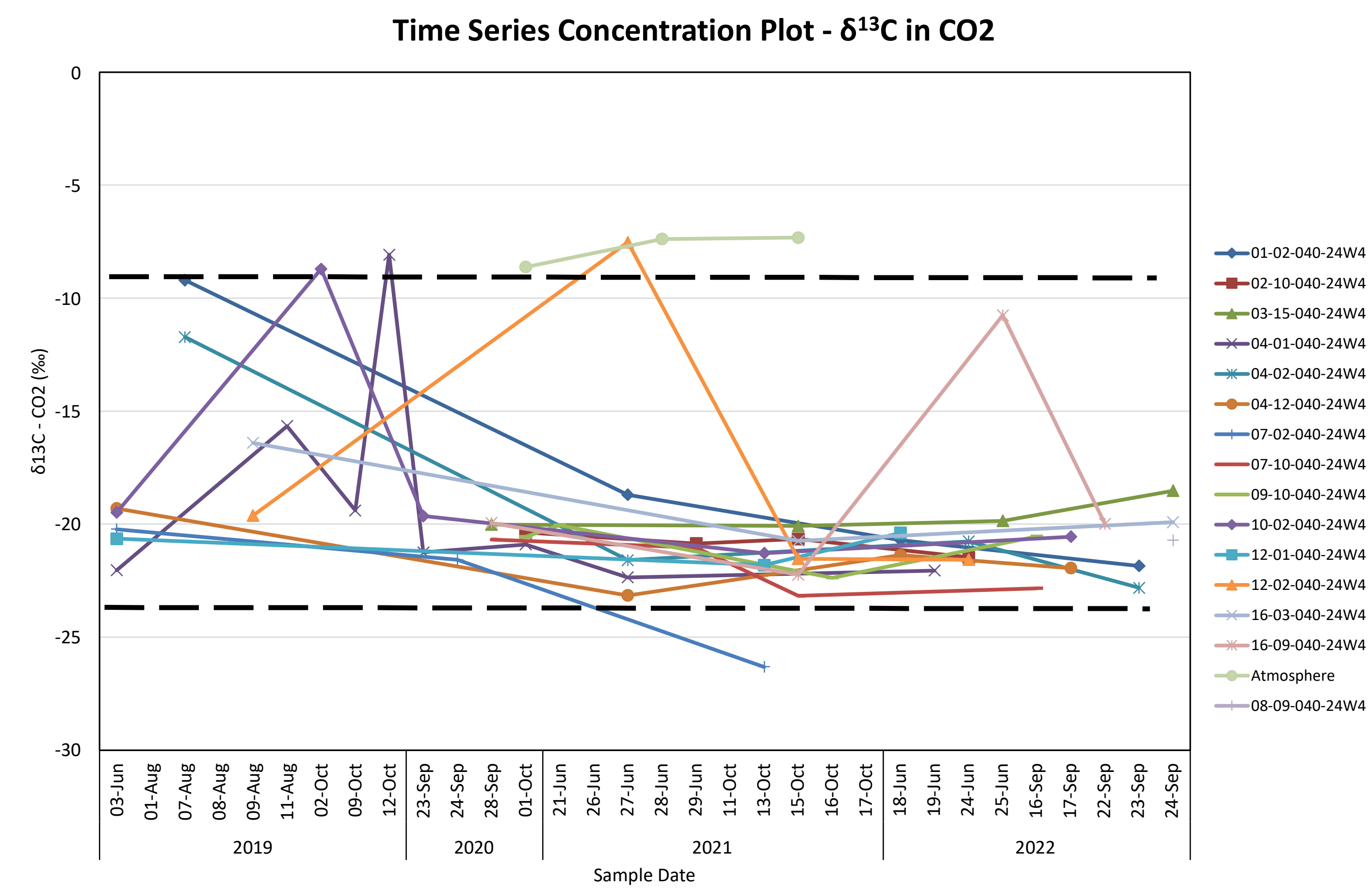


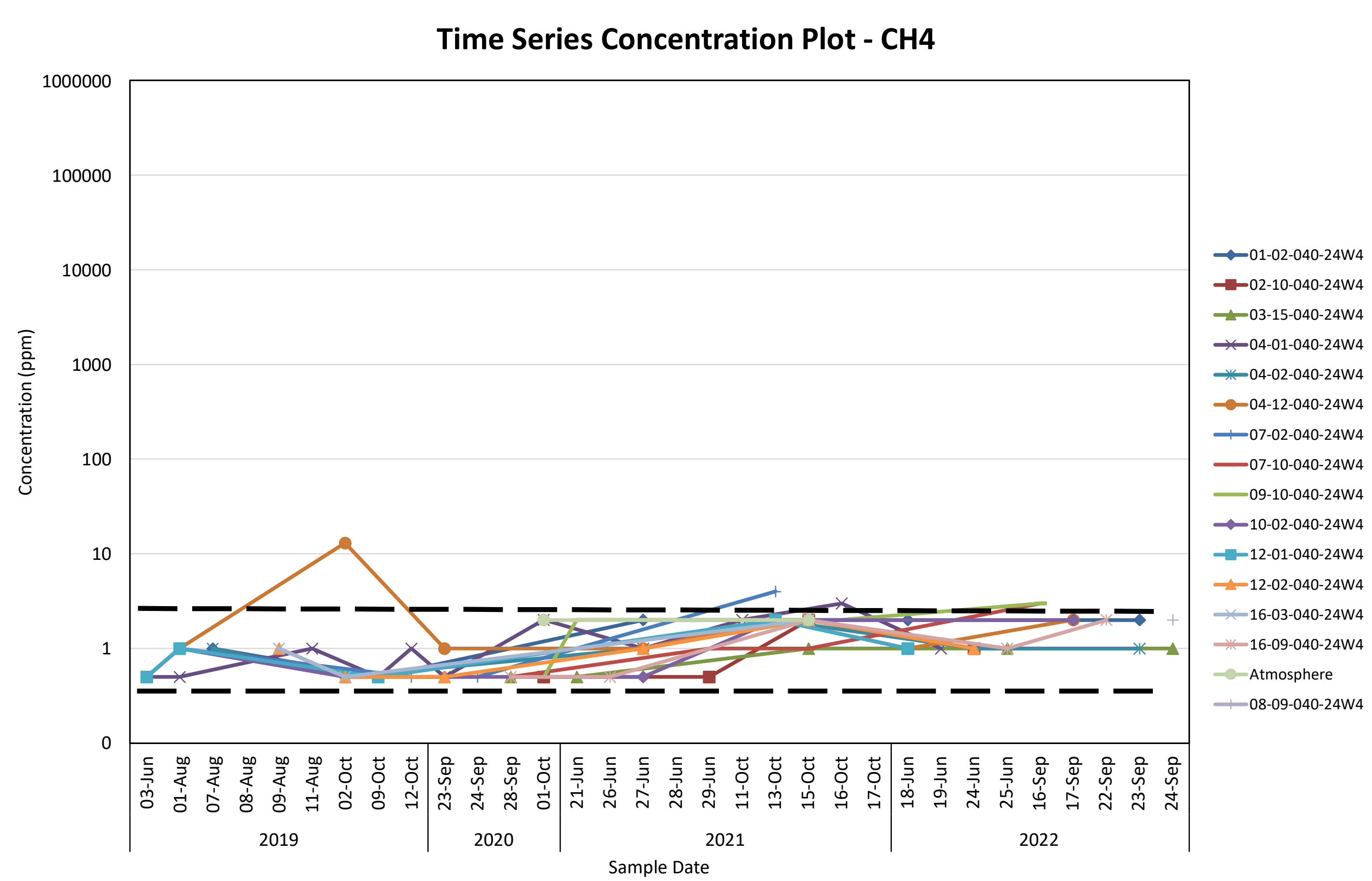


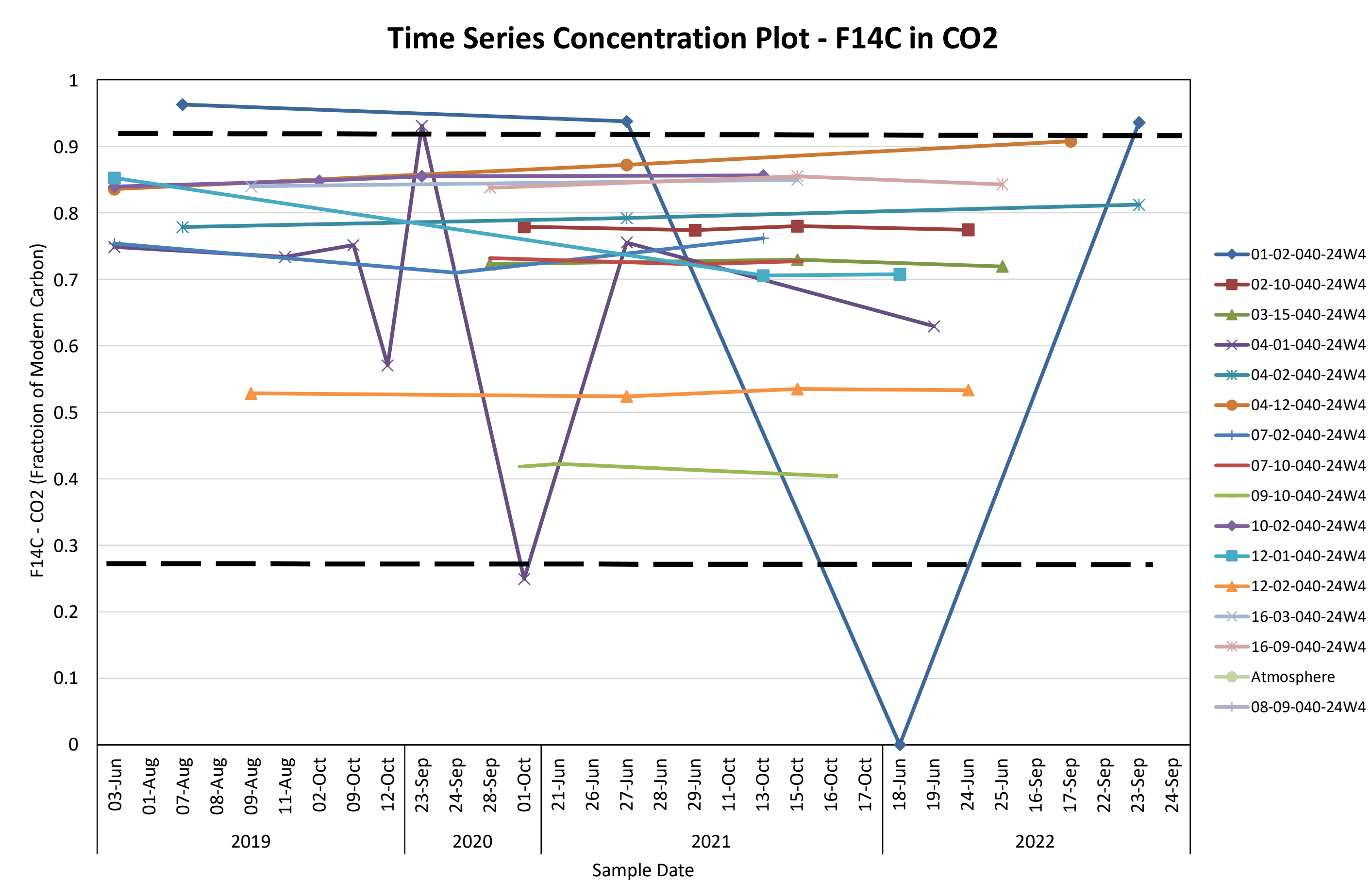
Notes:

PREPARED BY: INTEGRATED SUSTAINABILITY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Groundwater Time Series Concentration Plot - North 3 Data
CLIENT: enhance	DRAWN BY: J. Cruz; CHECKED BY: J. Fennell; APPROVED BY: E. Guzman; DATE: February 13, 2023
	SCALE: -; PROJECT NO.: CP22-EEI-01-00; FIGURE NO.: FIGURE 12; REVISION: B









Notes: CH4 concentratuion measured below the laboratory detection limit of 1 ppm are reported as 0.5 ppm.

Range of baseline conditions

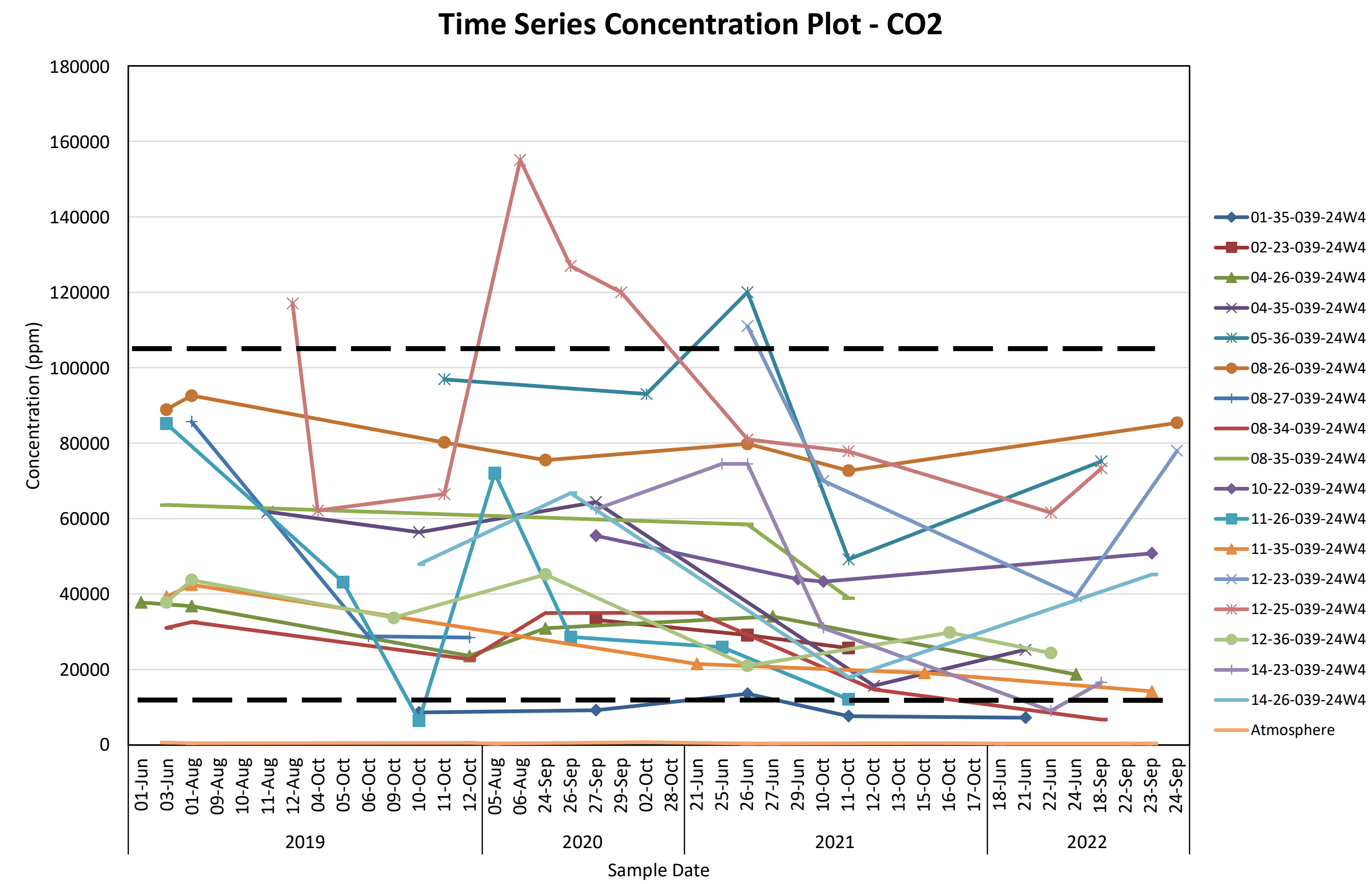
PREPARED BY: Integrated Sustainability

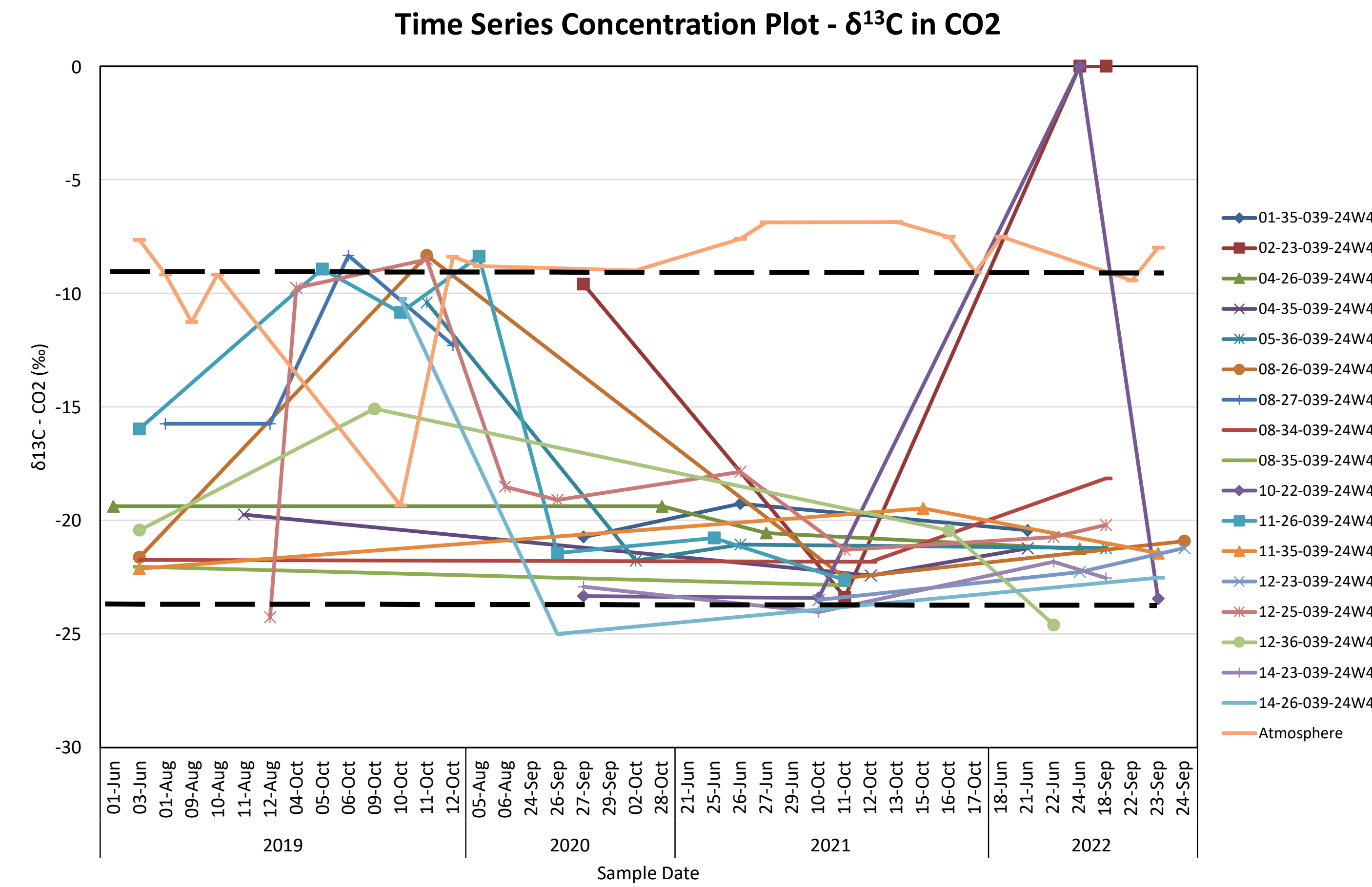
Clive CO_2 Injection & Enhanced Oil Recovery Project
MMV Soil & Groundwater Monitoring 2022 Annual Report
Time Series Concentration Plot - North 1 Data

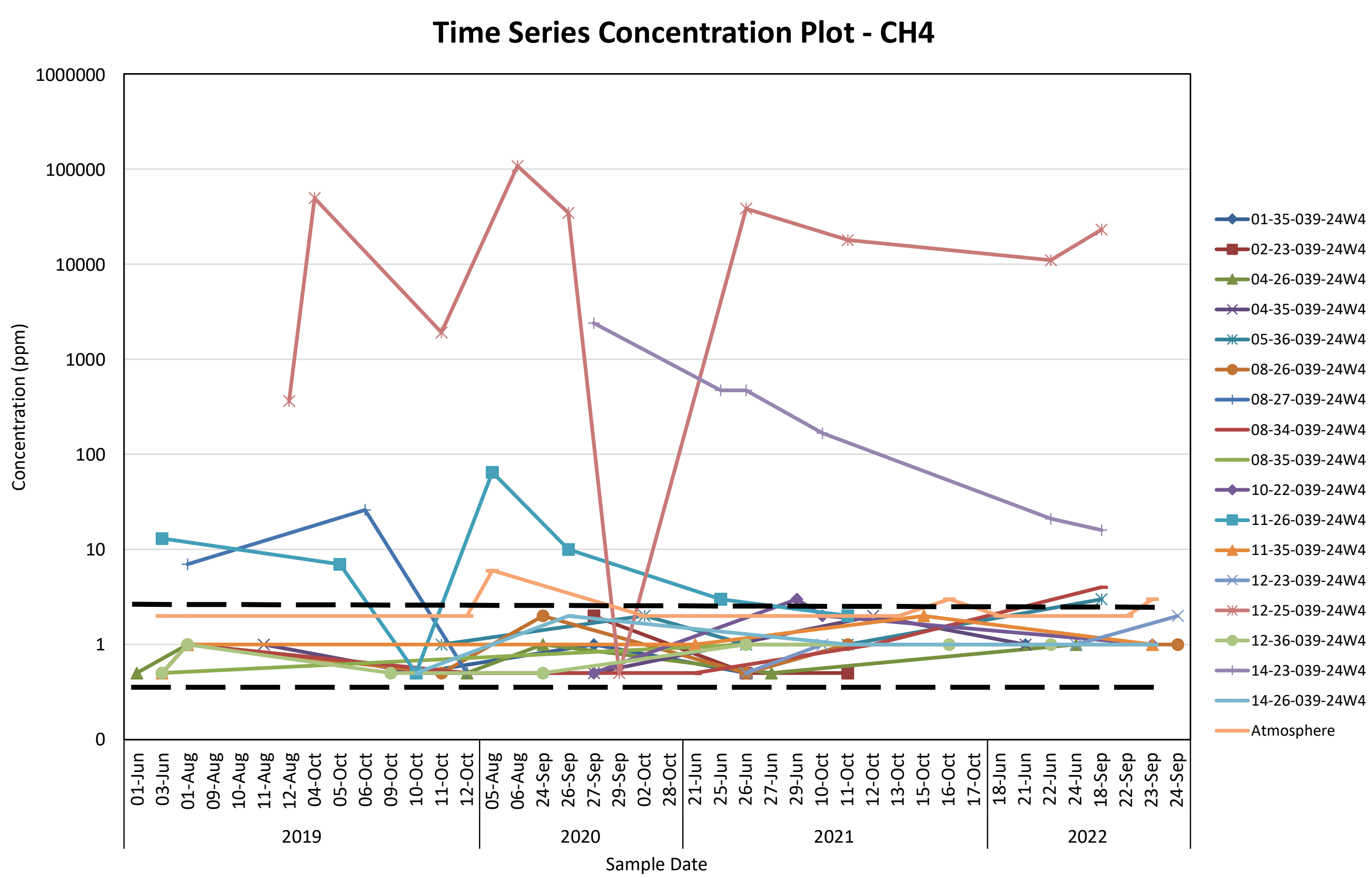
CLIENT: enhance

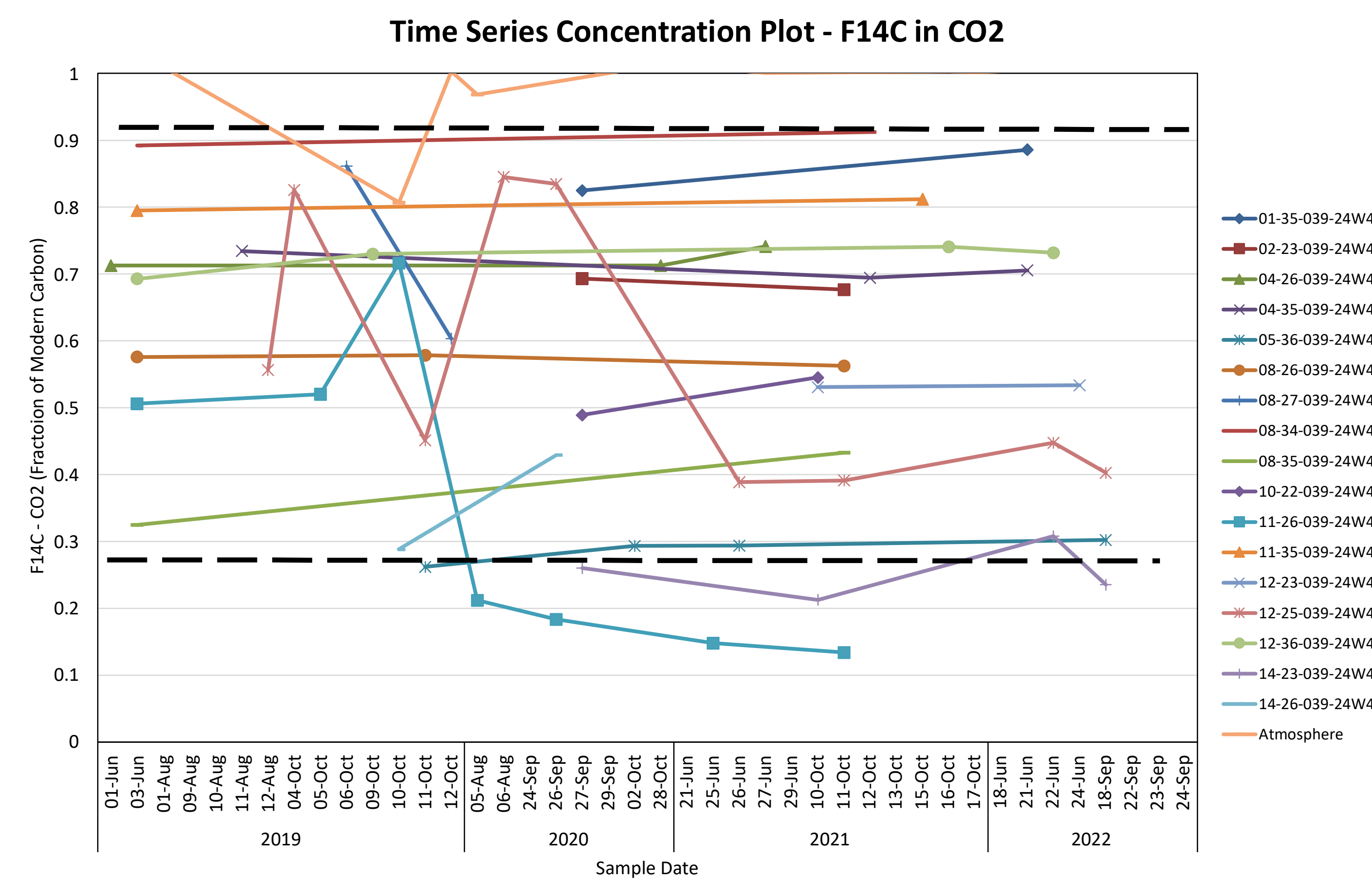
DRAWN BY	CHECKED BY	APPROVED BY	DATE
I. Grant	J. Fennell	E. Guzman	February 13, 2023

SCALE	PROJECT NO.	FIGURE NO.	REVISION
-	CP22-EEI-01-00	FIGURE 13	A





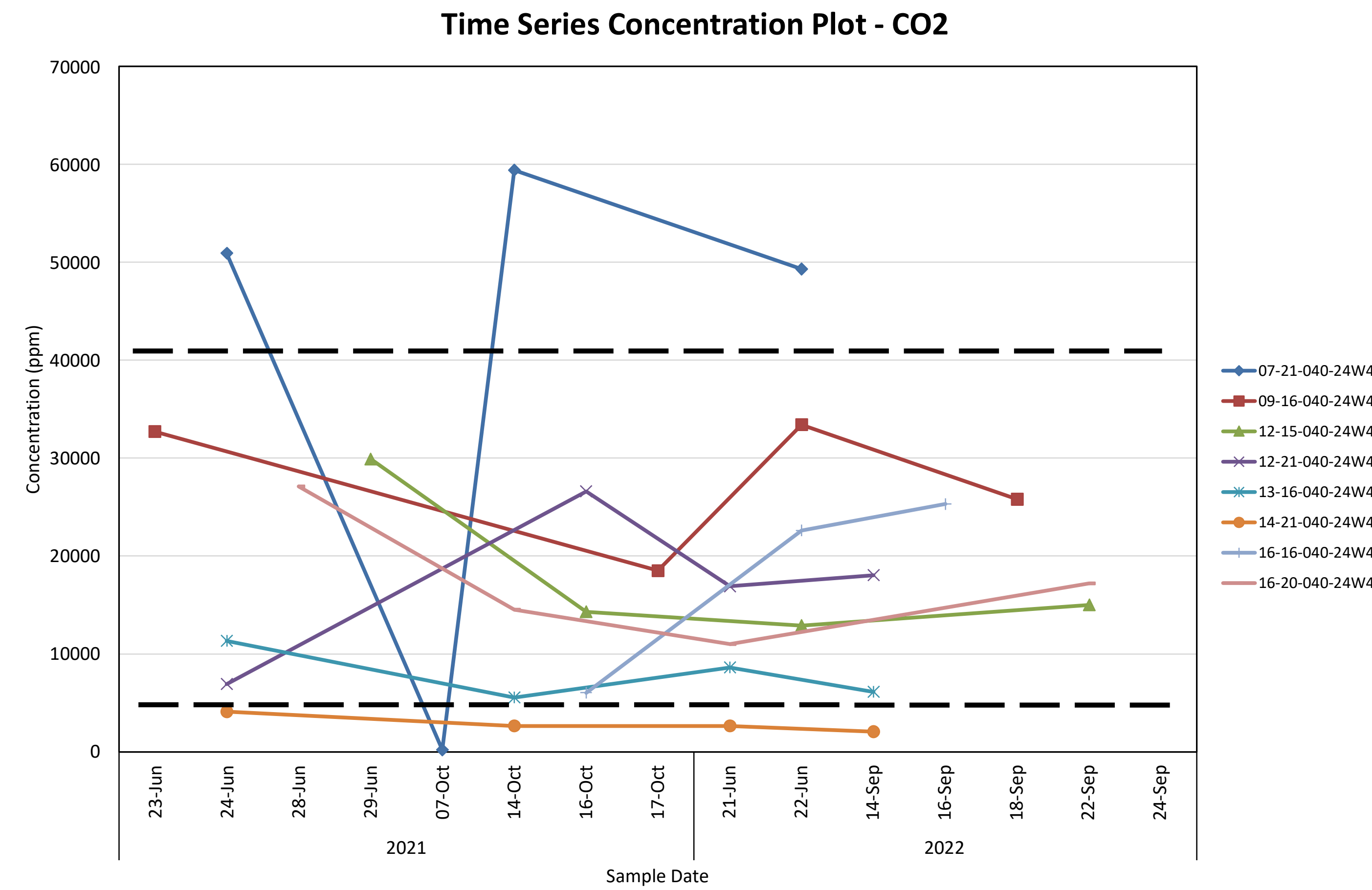


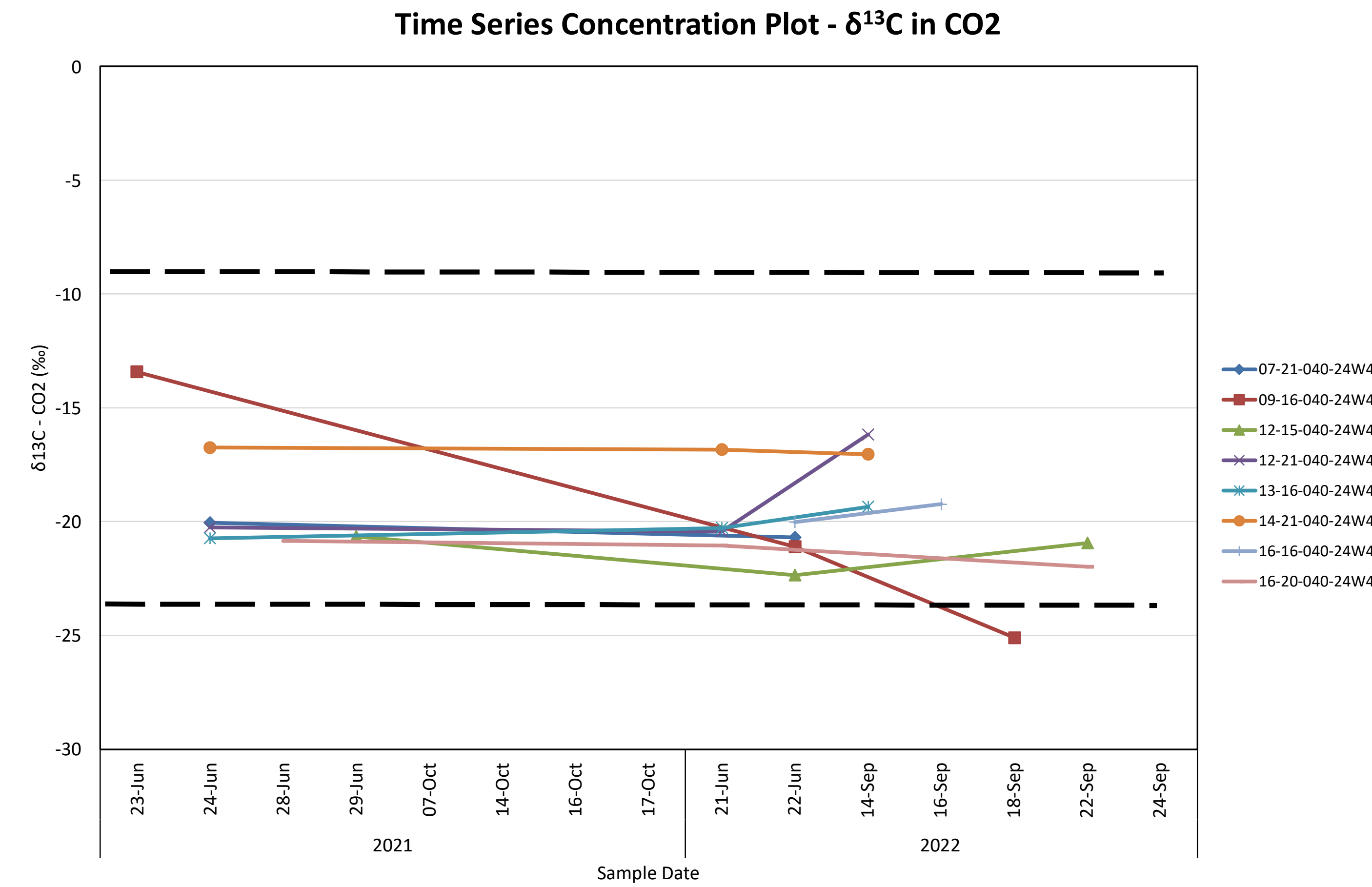


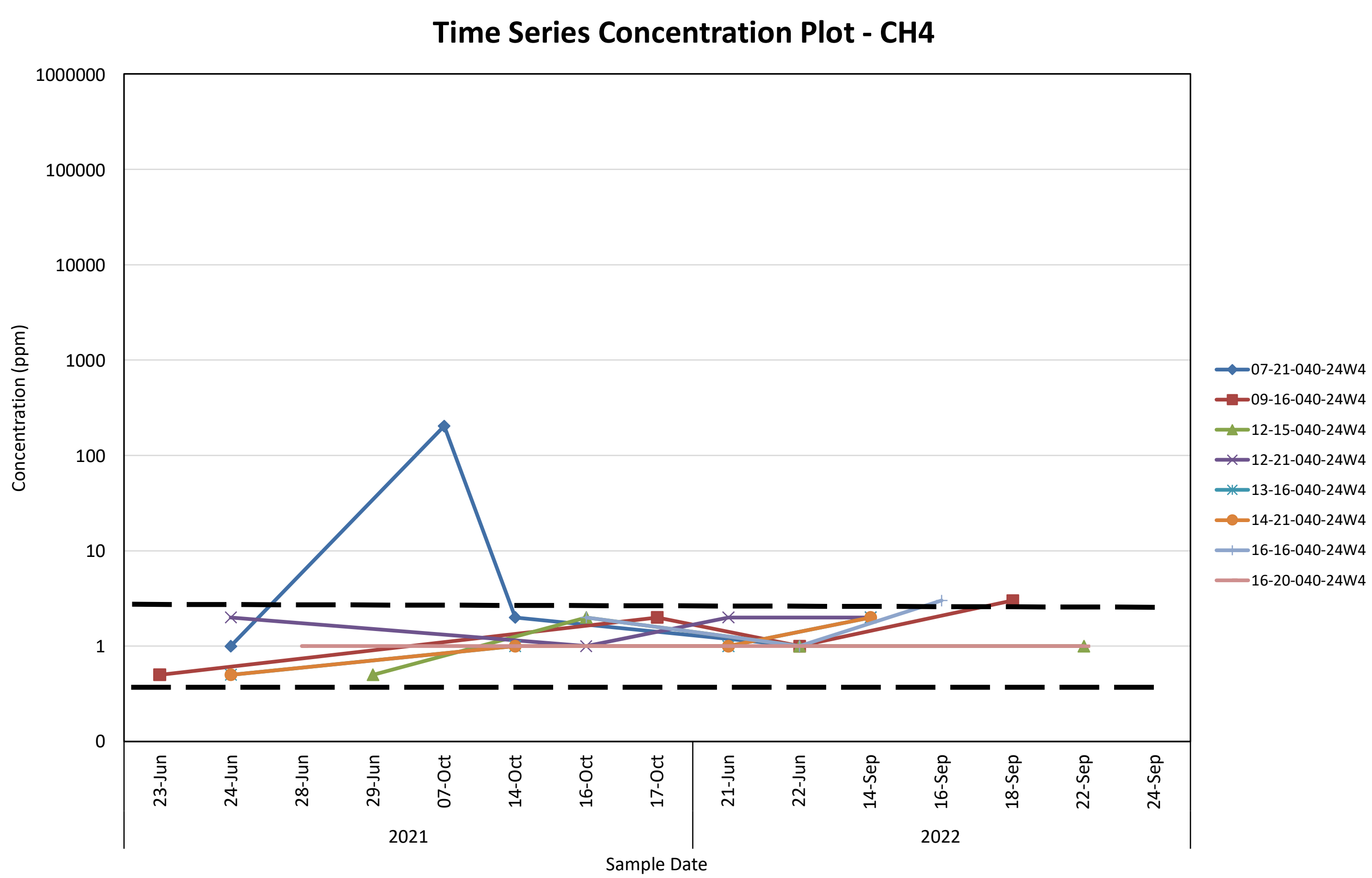
Notes: CH4 concentratuion measured below the laboratory detection limit of 1 ppm are reported as 0.5 ppm.

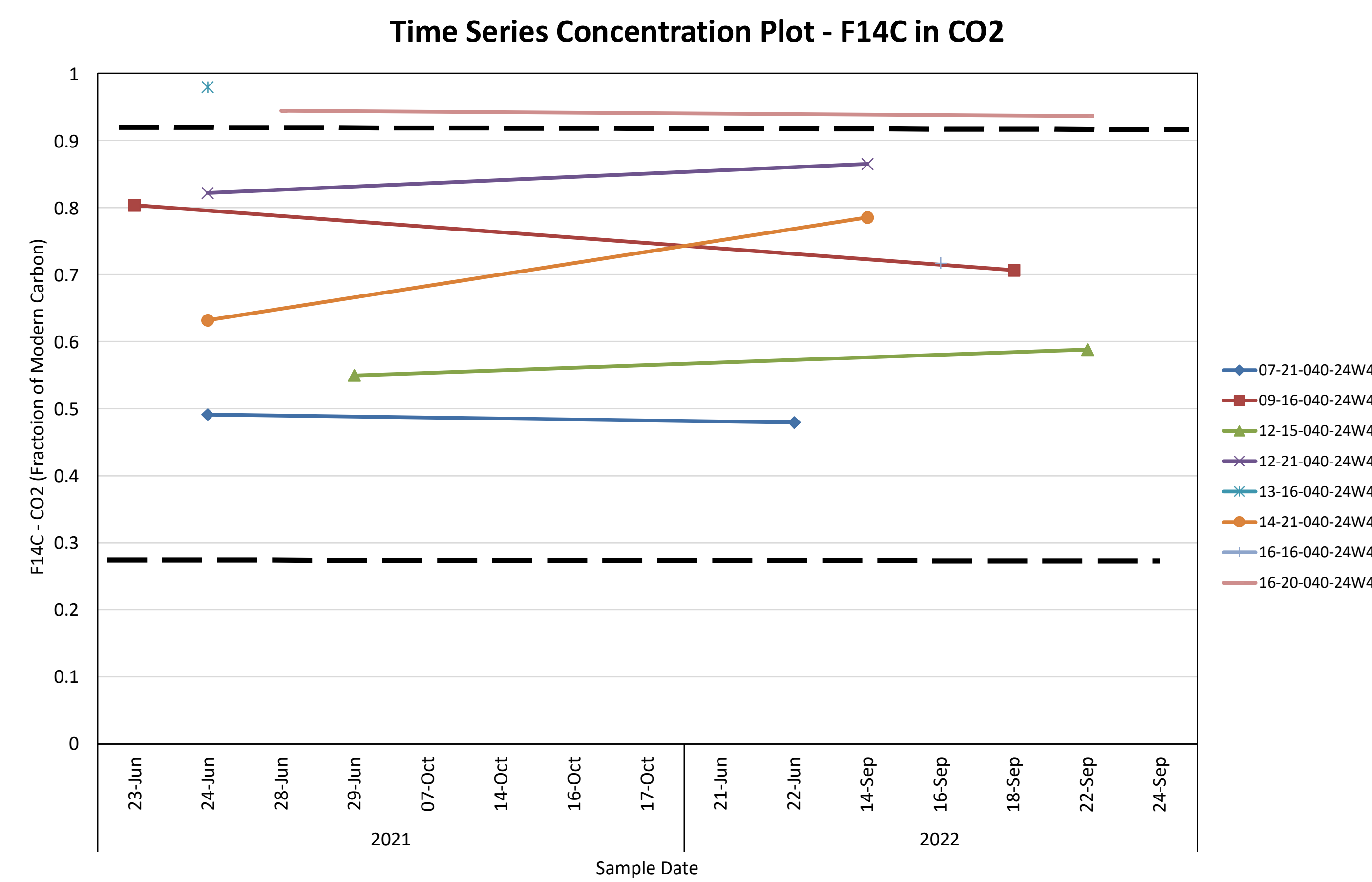
Range of baseline conditions

PREPARED BY: INTEGRATED SUSTAINABILITY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Time Series Concentration Plot - South Data
CLIENT: enhance	DRAWN BY: I. Grant; CHECKED BY: J. Fennell; APPROVED BY: E. Guzman; DATE: February 14, 2023
	SCALE: -; PROJECT NO.: CP22-EEI-01-00; FIGURE NO.: FIGURE 14; REVISION: D





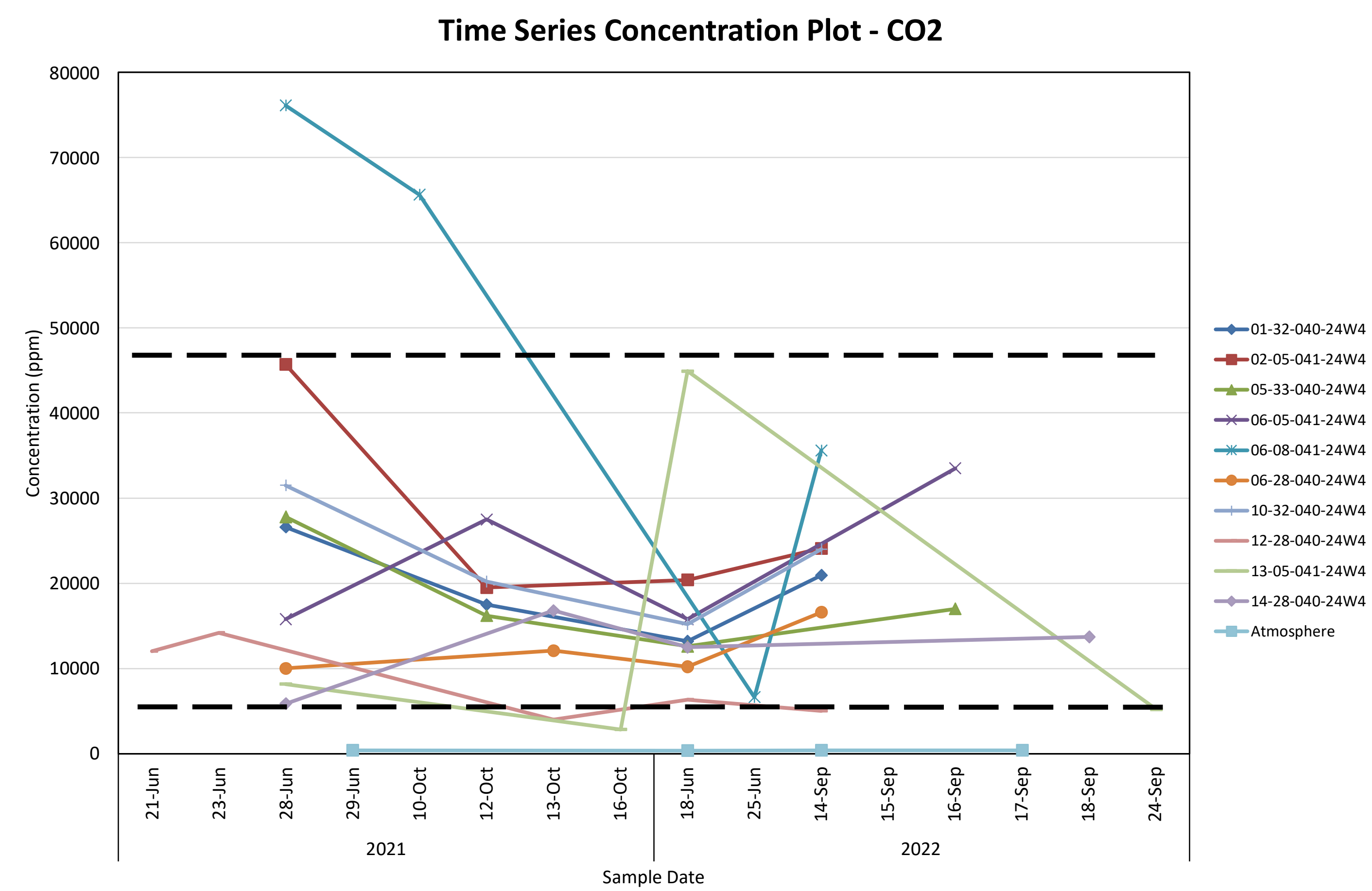


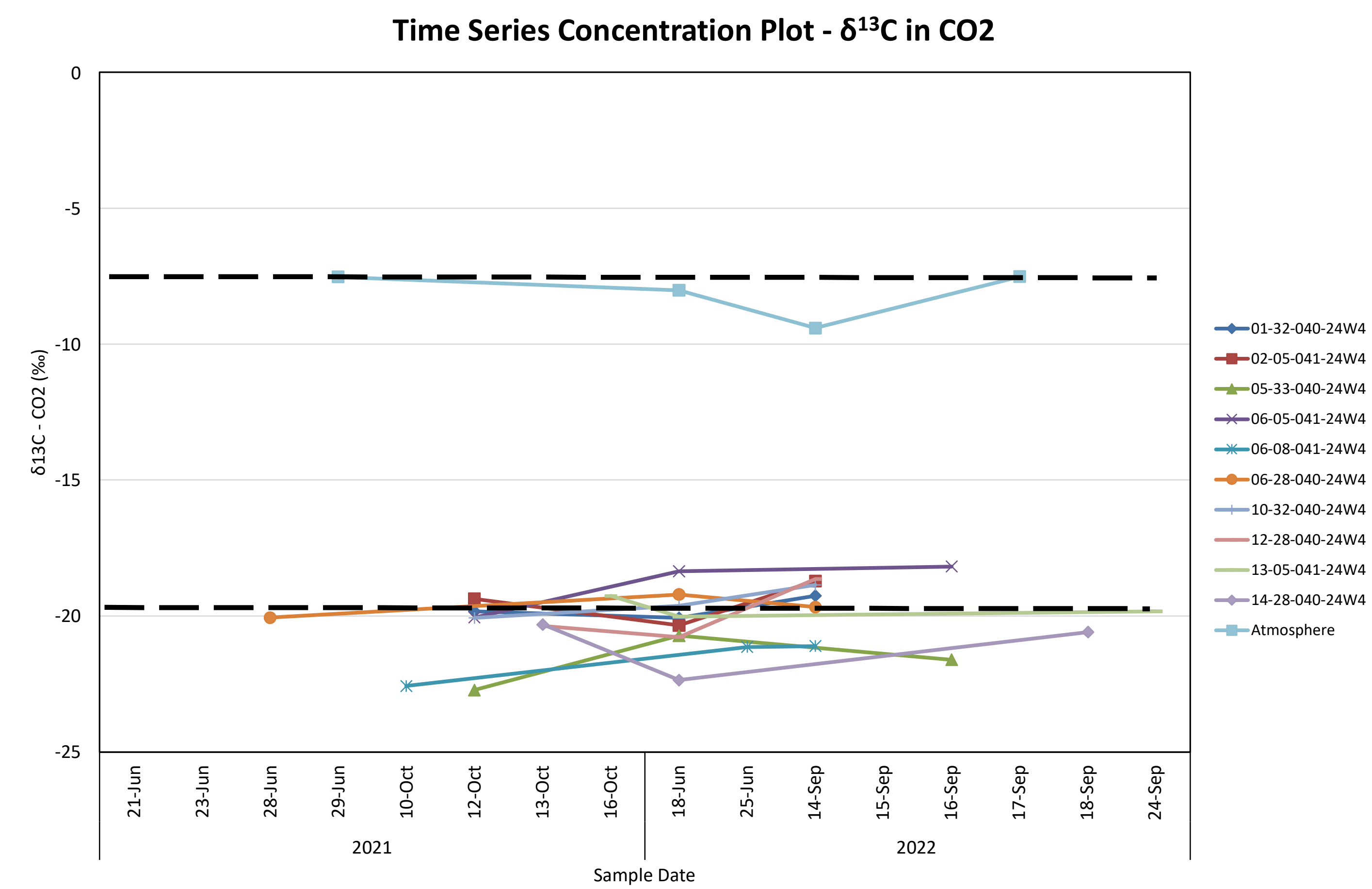


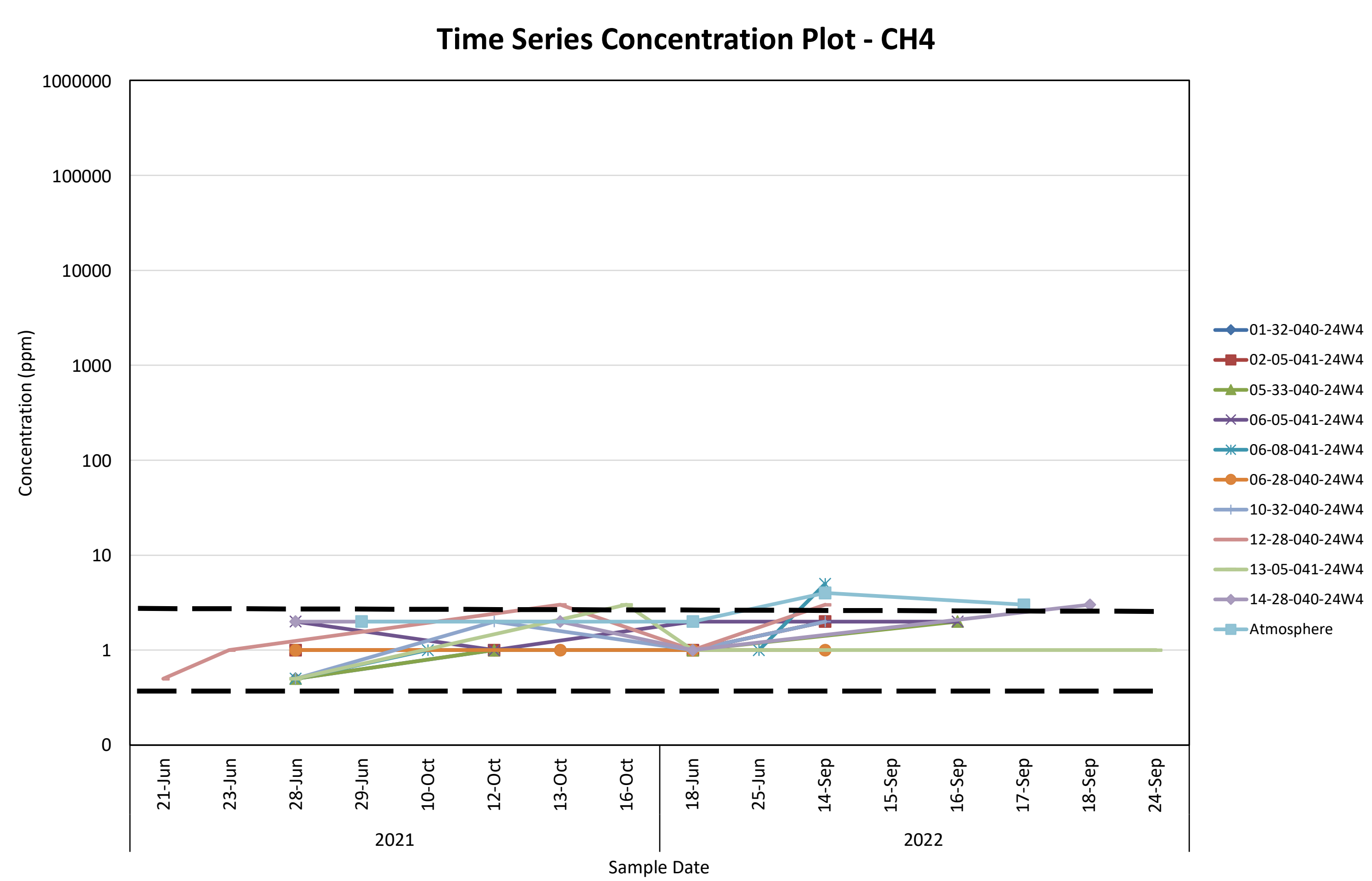
Notes: CH4 concentratuion measured below the laboratory detection limit of 1 ppm are reported as 0.5 ppm.

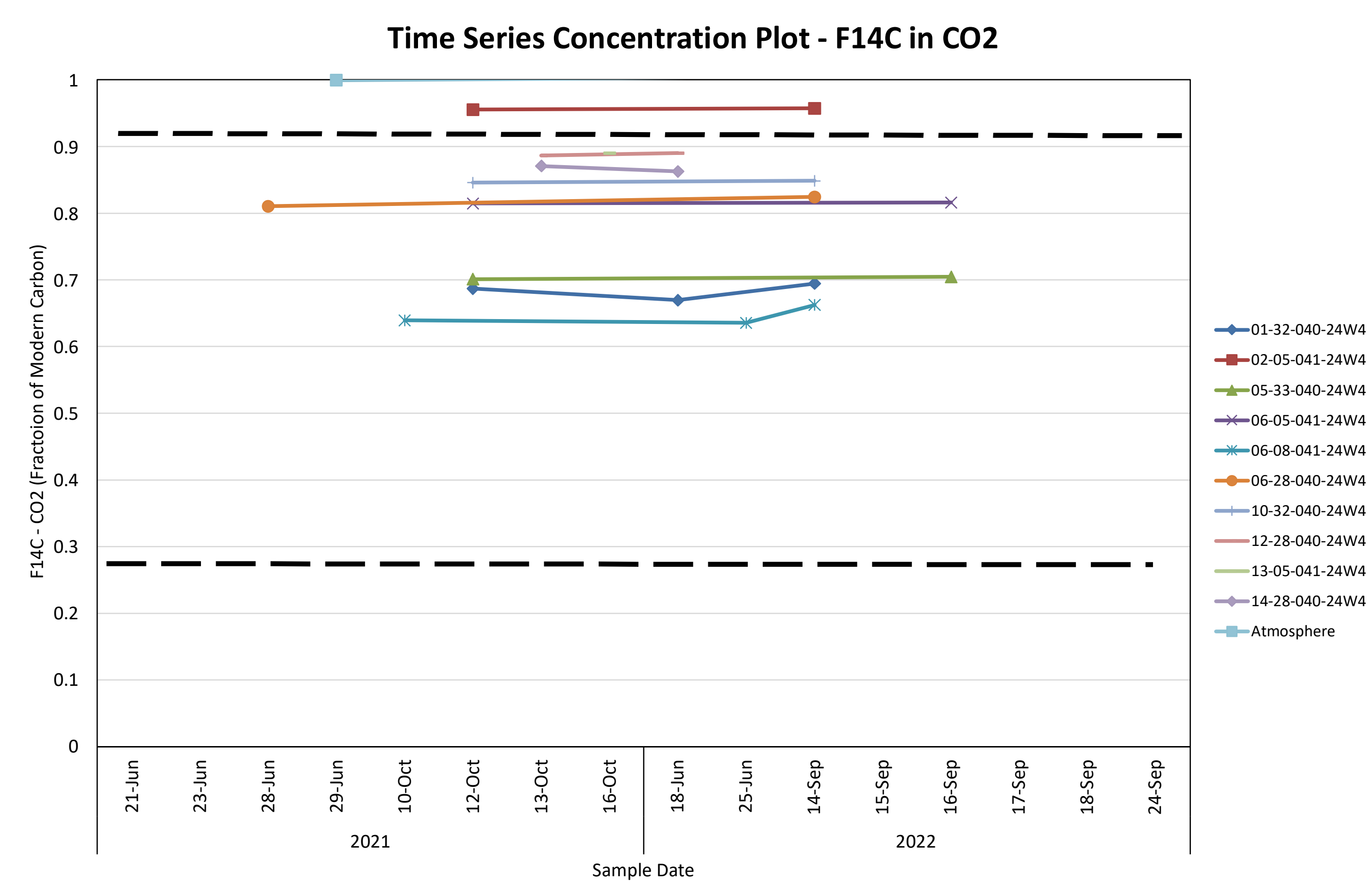
Range of baseline conditions

PREPARED BY: INTEGRATED SUSTAINABILITY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Time Series Concentration Plot - North 2 Data
CLIENT: enhance	DRAWN BY: I. Grant; CHECKED BY: J. Fennell; APPROVED BY: E. Guzman; DATE: February 13, 2023
	SCALE: -; PROJECT NO.: CP22-EEI-01-00; FIGURE NO.: FIGURE 15; REVISION: A









Notes: CH4 concentratuion measured below the laboratory detection limit of 1 ppm are reported as 0.5 ppm.

Range of baseline conditions

PREPARED BY: INTEGRATED SUSTAINABILITY	Clive CO_2 Injection & Enhanced Oil Recovery Project MMV Soil & Groundwater Monitoring 2022 Annual Report Time Series Concentration Plot - North 3 Data
CLIENT: enhance	DRAWN BY: I. Grant; CHECKED BY: J. Fennell; APPROVED BY: E. Guzman; DATE: February 13, 2023
	SCALE: -; PROJECT NO: CP22-EEI-01-00; FIGURE NO: FIGURE 16; REVISION: A

INTEGRATED SUSTAINABILITY

Appendices

INTEGRATED SUSTAINABILITY

Appendix 1: Additional Gas Analysis

André E. Lalonde AMS Laboratory
Radiocarbon Laboratory
www.ams.uottawa.ca
Analysis Report

uOttawa

Isotope Analysis Summary

Date	Lab ID	Submitter ID	Submitter comments	Description	Material	Material Code	14C yr BP	±	F14C	±	D14C ‰	±	Δ14C ‰	±
2022														
1-Sep-22	UOC-19760ϕ	SUMMA1A (10-34 CBM GAS)	10-34-039-24W4	CBM Prod Gas	Gas	CH4	>55900	--	<0.001	--	<-999	--	<-999.1	--
1-Sep-22	UOC-19761ϕ	CANISTER1B (04-15 CBM HEADER)	12-12-040-24W4	CBM Prod Gas	Gas	CH4	>55900	--	<0.001	--	<-999	--	<-999.1	--
24-May-22	UOC-19338ϕ	SUMMA1A	14-07-056-21W4	NWR CO2 Source	Gas	CX	>49700	--	<0.002	--	<-998.0	--	<-998.0	--
24-May-22	UOC-19339	SUMMA3B	04-17-056-21W4	Nutrien CO2 Source	Gas	CX	47688	320	0.0026	0.0001	-997.36	0.11	-997.38	0.11
13-May-22	UOC-19107ϕ	CAN1C	04-15-040-24W4	Combined CO2 Source	Gas	CX	>49700	--	<0.002	--	<-998.0	--	<-998.0	--
11-Mar-22	UOC-18173	SUMMA1A	14-07-056-21W4	NWR CO2 Source	Gas	CX	>55400	--	<0.0012	--	<-998.8	--	<-998.81	--
11-Mar-22	UOC-18174	SUMMA4B	04-17-056-21W4	Nutrien CO2 Source	Gas	CX	>55400	--	<0.0012	--	<-998.8	--	<-998.81	--
7-Mar-22	UOC-18172	SUMMA1A	04-15-040-24W4	Combined CO2 Source	Gas	CX	42091	136	0.0053	0.0001	-994.7	0.1	-994.75	0.1
2021														
25-Oct-21	UOC-16776ϕ	CAN00142	04-17-056-21W4	Nutrien CO2 Source	Gas - Summa Can	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
25-Oct-21	UOC-16777ϕ	CAN11950	04-17-056-21W4 DUPE	Nutrien CO2 Source	Gas - Summa Can	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
25-Oct-21	UOC-16778ϕ	CAN03091	14-07-056-21W4	NWR CO2 Source	Gas - Summa Can	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
25-Oct-21	UOC-16779ϕ	CAN11815	14-07-056-21W4 DUPE	NWR CO2 Source	Gas - Summa Can	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
04-Oct-21	UOC-16774ϕ	CAN00144A	04-15-040-24W4	Combined CO2 Source	Gas - Summa Can	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
04-Oct-21	UOC-16775	CAN06451A	04-15-040-24W4 DUPE	Combined CO2 Source	Gas - Summa Can	CX	42234	1209	0.0052	0.0008	-994.79	0.78	-994.84	0.78
13-May-21	UOC-16104	GV1A_08-35	100/08-35-039-24W4	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
13-May-21	UOC-16105	GVA2_08-35	100/08-35-039-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
13-May-21	UOC-16106	GVA3_08-35	100/08-35-039-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
13-May-21	UOC-16107	GVA4_08-35	100/08-35-039-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
13-May-21	UOC-16108	GVA5_08-35	100/08-35-039-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
13-May-21	UOC-16109	GVA6_08-35	100/08-35-039-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
06-May-21	UOC-16110	GV1A_09-16	102/09-16-040-24W4	Coal SCV Flow	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
06-May-21	UOC-16111	GV2A_09-16	102/09-16-040-24W4 DUPE	Coal SCV Flow	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
06-May-21	UOC-16112	GV3A_09-16	102/09-16-040-24W4 DUPE	Coal SCV Flow	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
04-May-21	UOC-16098	GV1A_08-02	100/08-02-040-24W4	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
04-May-21	UOC-16099	GVA2_08-02	100/08-02-040-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
04-May-21	UOC-16100	GVA3_08-02	100/08-02-040-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
04-May-21	UOC-16101	GVA4_08-02	100/08-02-040-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
04-May-21	UOC-16102	GVA5_08-02	100/08-02-040-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
04-May-21	UOC-16103	GVA6_08-02	100/08-02-040-24W4 DUPE	Nisku Prod Gas	Gas/Liquid	CH4	>50000ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
12-Apr-21	UOC-15352	VIAL 1A_04-15	04-15-040-24W4;	CBM Prod Gas	Gas/Liquid	CH4	>50000 ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
12-Apr-21	UOC-15353	VIAL 2A_04-15	04-15-040-24W4; DUPLICATE	CBM Prod Gas	Gas/Liquid	CH4	>50000 ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
12-Apr-21	UOC-15354	VIAL 3A_04-15	04-15-040-24W4; DUPLICATE	CBM Prod Gas	Gas/Liquid	CH4	>50000 ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
12-Apr-21	UOC-15355	VIAL 1A_10-34	10-34-039-24W4	CBM Prod Gas	Gas/Liquid	CH4	>50000 ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
12-Apr-21	UOC-15356	VIAL 2A_10-34	10-34-039-24W4; DUPLICATE	CBM Prod Gas	Gas/Liquid	CH4	>50000 ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
12-Apr-21	UOC-15357	VIAL 3A_10-34	10-34-039-24W4; DUPLICATE	CBM Prod Gas	Gas/Liquid	CH4	>50000 ϕ	---	<0.0020	---	<-998.00	---	<-998.02	---
17-Feb-21	UOC-14862	CAN1A	04-17-056-21W4	Nutrien CO2 Source	Gas	CX	48222	670	0.0025	0.0002	-997.53	0.21	-997.55	0.20
17-Feb-21	UOC-14863ϕ	CAN3C	14-07-056-21W4	NWR CO2 Source	Gas	CX	>50000	---	<0.0019	---	<-998.00	---	<-998.00	---
01-Feb-21	UOC-14861ϕ	CAN04201C	04-15-040-24W4	Combined CO2 Source	Gas	CX	>50000	---	<0.0019	---	<-998.00	---	<-998.00	---
2020														
02-Oct-20	UOC-14028ϕ	SN8750/29-10621	102/09-16-040-24W4	Coal SCV Flow	GAS	CH4	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
15-Sep-20	UOC-14028ϕ	SN8750/29-10621	4-17-056-21W4 Nutrien	Nutrien CO2 Source	GAS	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
15-Sep-20	UOC-14027ϕ	SN5565/29-10622G	14-07-056-21W4 NWR	NWR CO2 Source	Gas	CX	>50000	---	<0.0020	---	<-998.00	---	<-998.02	---
02-Jul-20	UOC-13121ϕ	VIAL 1A,2A,3A,4A	10-34-039-24w4 CBM Header	CBM Prod Gas	Nautral Gas	CH4	>60000	---	<0.0006	---	<-999.40	---	<-999.41	---
12-May-20	UOC-12831ϕ	1-2-40-24w4	100/01-02-040-24W4/02	Nisku Prod Gas	Nautral Gas	CH4	>55000	---	<0.001	---	<-999.00	---	<-999.00	---
12-Mar-20	UOC-12830ϕ	10-35-39-24w4	100/10-35-039-24W4/00	Leduc Prod Gas	Nautral Gas	CH4	>55000	---	<0.001	---	<-999.00	---	<-999.00	---
2019														
01-Oct-19	UOC-10891	10-34-039-24w4		CBM Prod Gas	CH4 gas	CH4	>67637	8696	0.0002	0.0002	-999.83	0.18	-999.83	0.18
27-Sep-19	UOC-10892	Nutrien inlet gas		**Nutrien CH4 Inlet**	CH4 gas	CH4	>67637	16665	0.0001	0.0001	-999.94	0.13	-999.94	0.13
27-Sep-19	UOC-10896	Nutrien CO2 source gas		Nutrien CO2 Source	CO2 gas	CX	23980	153	0.0505	0.001	-949.47	0.96	-949.89	0.95

AGAT Laboratories

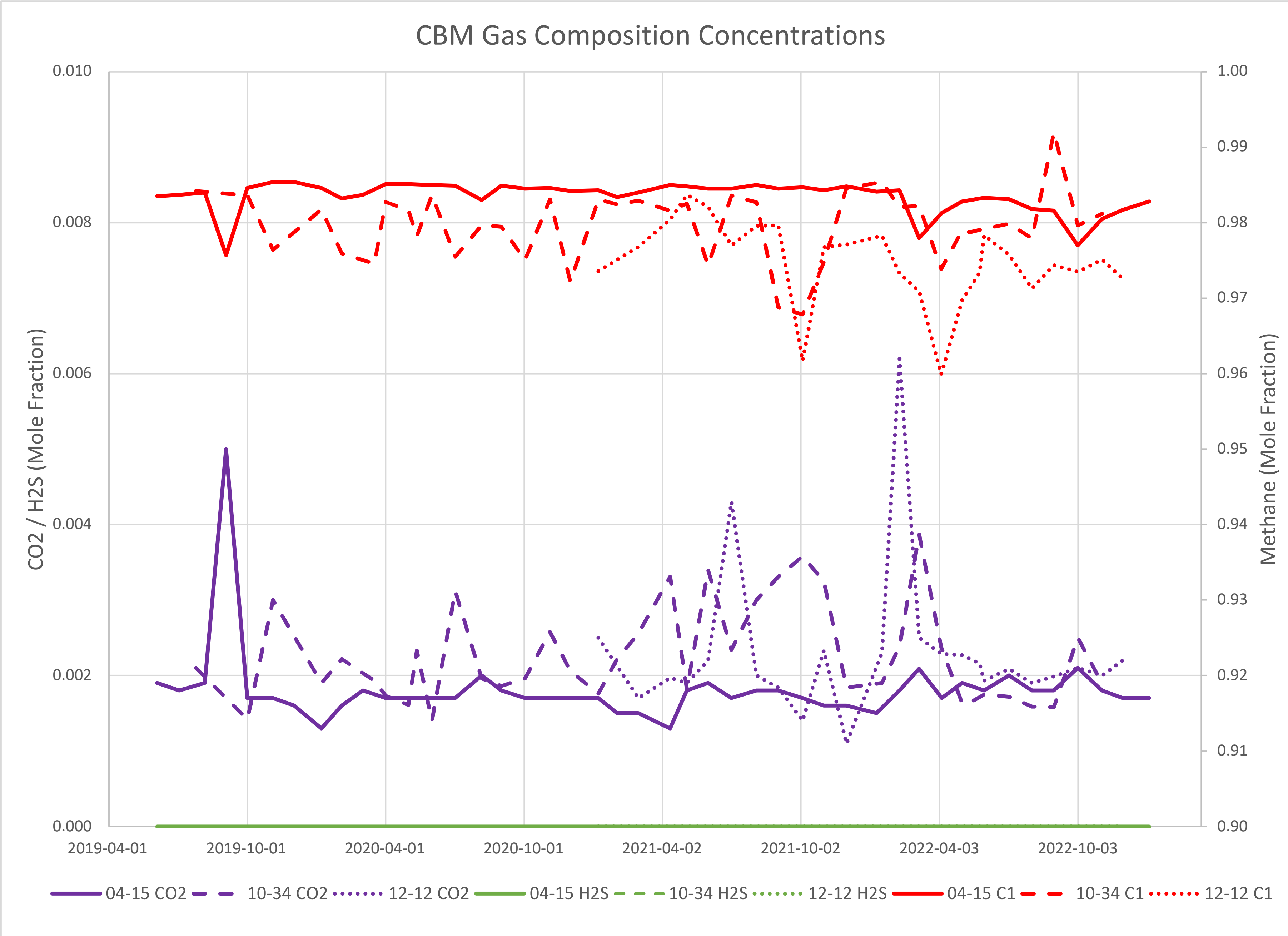
Isotope Analysis Summary

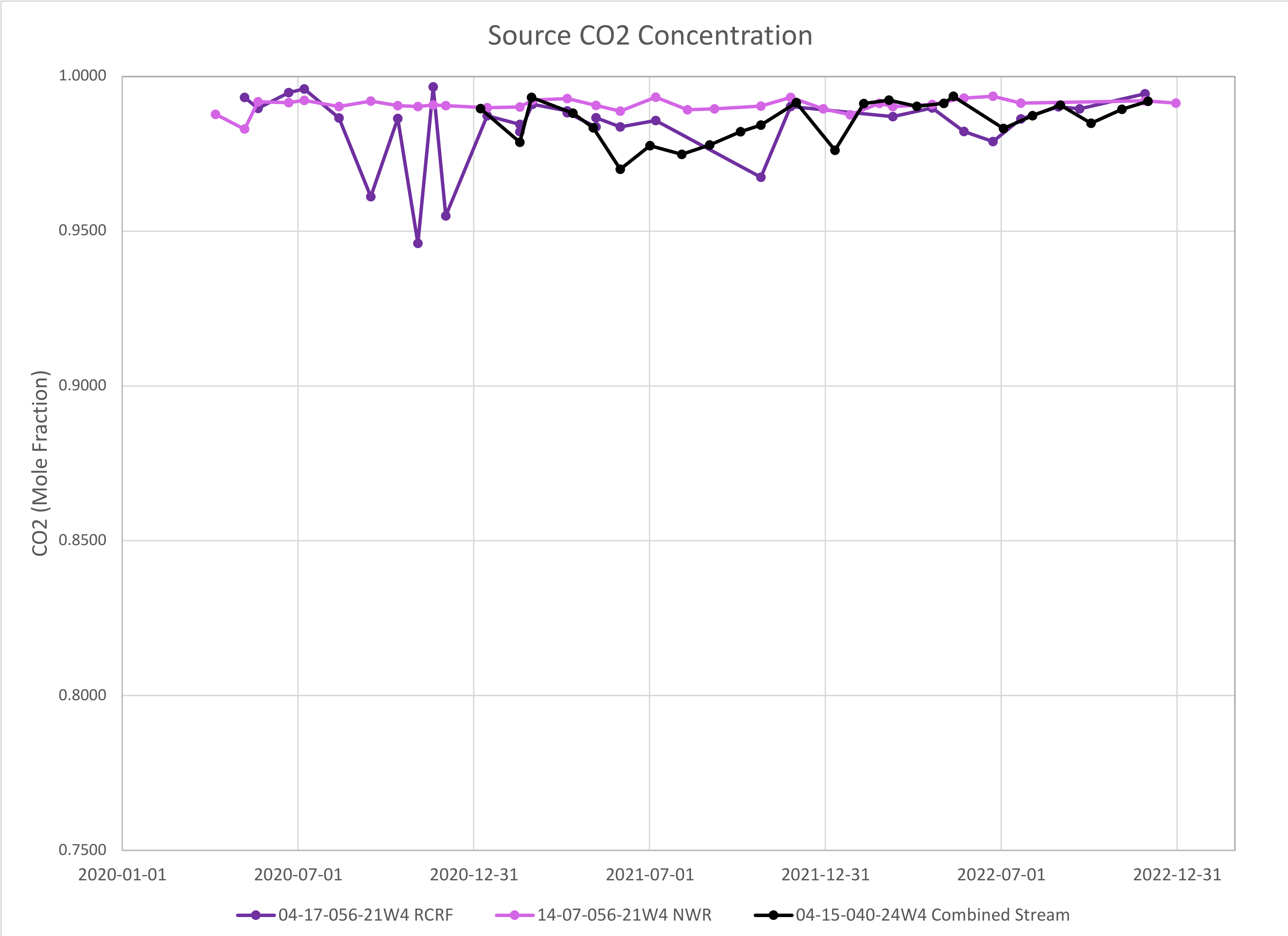
Operator: Enhance Energy

Analyst: Karlis Muehlenbachs, U of A
780-492-2827

Work Order	Well Location	Sample Point	Description	Date Sampled	$\delta^{13}C_1$	$\delta^{13}C_2$	$\delta^{13}C_3$	$\delta^{13}iC_4$	$\delta^{13}nC_4$	$\delta^{13i}C_5$	$\delta^{13}nC_5$	$\delta^{13}CO_2$	Comments
2022													
22R977108	100/12-01-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	5-Dec-22	-37.73	-32.06	-27.18	-29.94	-26.12			-4.70	This is a mature thermogenic gas.
22R977108	100/16-02-040-24W4/00	WELLHEAD TUBING	Nisku Prod Gas	5-Dec-22	-36.62	-32.21	-27.70	-28.49	-25.92			2.80	This is a mature thermogenic gas.
22R977108	100/08-02-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	5-Dec-22	-37.47	-32.05	-28.70	-29.91	-27.42			-7.70	This is a mature thermogenic gas.
22R958723	100/14-21-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	19-Oct-22	-42.87	-33.28	-29.16	-29.70	-27.47	-27.21	-27.93	-5.01	This is a typical thermogenic gas from the Devonian.
22R958723	100/04-26-039-24W4/00	WELLHEAD TUBING	Nisku Prod Gas	19-Oct-22	-40.89	-33.92	-28.47	-27.26	-27.11	-25.94	-27.34	-7.78	This is a typical thermogenic gas from the Devonian.
22R929085	100/14-21-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	7-Aug-22	-44.98	-33.12	-29.54	-20.45	-27.76			-5.63	This gas has an isotope fingerprint typical of a mature Devonian gas.
22R929085	100/08-02-040-24W4/02	WELLHEAD	Nisku Prod Gas	7-Aug-22	-40.24	-31.95	-27.69	-29.00	-26.01			-4.69	This gas has an isotope fingerprint typical of a mature Devonian gas.
22R929085	100/04-26-039-24W4/00	WELLHEAD	Nisku Prod Gas	7-Aug-22	-37.07	-30.75	-26.78	-28.65	-27.25			2.43	This gas has an isotope fingerprint typical of a mature Devonian gas.
22R922504	100/16-03-039-24W4/00	TEST METER RUN	Leduc Prod Gas	20-Jul-22	-39.68	-33.59	-29.45	-28.44	-27.31			-4.64	This is a mature thermogenic gas that may come from the Leduc.
22R915636	104/14-02-042-24W4/00	WELLHEAD TUBING	Mannville Gas	7-Jul-22	-47.18	-28.40	-25.61	-26.86	-25.55	-25.37	-25.08	-13.66	This is a mature thermogenic gas that may come from the Manville
22R915636	100/16-34-039-24W4/03	TUBING	Mannville Gas	7-Jul-22	-47.25	-27.37	-27.16	-28.70	-27.10			-8.04	This is a mature thermogenic gas that may come from the Manville
22R915637	04-15-040-20W4	EMBER CBM HEADER 12-12	CBM Prod Gas	4-Jul-22	-55.12	-37.77	-55.01	-25.88				24.46	This gas has an isotope fingerprint typical for a CBM gas in this region.
22R915634	10-34-034-24W4	CBM GAS	CBM Prod Gas	4-Jul-22	-54.25	-38.69	-28.59	-29.74	-29.54			3.04	This is a typical CBM Gas.
22R899719	04-15-040-24W4	EMBER CBM HEADER	CBM Prod Gas	26-May-22	-52.75	-37.05	-27.70	-27.80	-28.10				This is a typical isotope fingerprint of a CBM gas in that region.
22R893697	04-17-056-21W4	METER FIT-4116	Nutrien CO2 Source	24-May-22	-44.51							-39.65	This is an almost pure CO2 gas with a trace of thermogenic methane.
22R893697	14-07-056-21W4	METER 091-FIT-0210	NWR CO2 Source	24-May-22	-31.40	-29.61						-26.71	This is an almost pure CO2 gas with a traces of thermogenic methane and ethane.
22R889542	04-15-040-24W4	METER 090-FIT-100(ENH 0202)	Combined CO2 Source	13-May-22	-29.92	-31.51						-27.89	This is an almost pure CO2 gas with traces of thermogenic methane and ethane.
22R889542	04-15-040-24W4	EMBER CBM HEADER	CBM Prod Gas	13-May-22	-55.35	-38.02	-28.04	-27.91	-29.69			-1.78	This is a typical isotope fingerprint of a CBM gas in that region.
22R889542	100/13-34-038-24W4/03	WELLHEAD CASING	Mannville Gas	13-May-22	-46.04	-27.60	-25.29	-27.85	-25.09			-1.57	This is a typical isotope fingerprint of a deep thermogenic gas.
22R889542	10-34-039-24W4	CBM GAS	CBM Prod Gas	13-May-22	-54.36	-39.01	-28.31	-29.14	-29.10			-13.83	This is a typical isotope fingerprint of a CBM gas in that region.
22R883697	102/05-33-040-24W4-02	CASING GAS	Nisku Prod Gas	12-Apr-22	-42.54	-33.23	-28.91	-30.01	-27.37			-7.05	This gas has the isotope fingerprint of a mature gas such as from the Nisku A.
22R879425	100/07-15-040-24W4/02	CASING GAS	Nisku Prod Gas	5-Apr-22	-41.71	-32.56	-32.96	-28.63	-27.23			-4.26	The casing and SCV gases have the same source and may be from or near the Nisku A. Their isotope fingerprint is very similar but not exactly like that of the test meter run from this well analyzed in Nov, 2021 which would indicate that the source of the casing and SCV gases is slightly shallower than the meter run gas.
22R879425	100/07-15-040-24W4/02	SCV	Nisku Prod Gas	5-Apr-22	-40.42	-31.68	-27.93	-28.72	-28.23			-5.56	The casing and SCV gases have the same source and may be from or near the Nisku A. Their isotope fingerprint is very similar but not exactly like that of the test.
22R879425	102/09-16-040-24W4/00	SCV	Coal SCV Flow	5-Apr-22	-54.74	-47.53	-34.31						This is a shallow thermogenic gas that may come from around 200 to 300 m depth. It has not changed since previous tests.
22R879425	100/05-21-040-24W4/02	SCV	Coal SCV Flow	5-Apr-22	-56.29	-46.30	-35.91	-25.98	-22.01				This is a shallow thermogenic gas that may come from 200 to 300 m depth. It has not changed since previous tests.
22R879425	100/06-21-040-24W4/03	SCV	Coal SCV Flow	5-Apr-22	-56.46	-47.17	-34.41						This is a shallow thermogenic gas that may come from 200 to 300 m depth. It has not changed since previous tests.
22R869991	04-17-056-21W4	METER FIT 4116	Nutrien CO2 Source	11-Mar-22								-43.14	
22R869991	14-07-056-21W4	METER FIT 090 FIT 0210	NWR CO2 Source	11-Mar-22								-28.44	
22R869985	04-15-040-20W4	METER 090-FIT-100 (ENH 0202)	Combined CO2 Source	7-Mar-22	-39.92	-29.63						-28.72	Gas is CO2 with traces of deep thermogenic gas.
22R858925	100/16-02-040-24W4/00	WELLHEAD TUBING	Nisku Prod Gas	9-Feb-22	-40.18	-33.55	-28.40	-28.66	-26.08				This is a thermogenic has typical of the Nisku A.
2021													
21R831470	100/08-02-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	18-Nov-21	-37.89	-31.48	-28.06	-28.67	-27.16			-3.59	This is an atypical thermogenic gas from the Nisku.
21R830214	100/04-26-039-24W4/00	WELLHEAD	Nisku Prod Gas	16-Nov-21	-30.86	-30.90	-28.00					-5.38	Very poor sample, which is a remnant of a thermogenic gas.
21R823222	100/07-15-040-24W4/02	TEST METER RUN	Nisku Prod Gas	1-Nov-21	-37.92	-31.34	-27.77	-28.74	-26.99			-4.66	This is a thermogenic gas with an isotopic fingerprint indicative of the Nisku A.
21R823234	100/05-21-040-24W4/02	SCV	Coal SCV Flow	1-Nov-21	-55.29	-46.36	-36.32	-27.25					This is a shallow thermogenic gas that may come from 200 to 300 m depth.
21R823234	100/06-21-040-24W4/03	SCV	Coal SCV Flow	1-Nov-21	-55.31	-46.63	-35.87	-28.83	-31.14				This is a shallow thermogenic gas that may come from 200 to 300 m depth.
21R823234	102/09-16-040-24W4/00	SCV	Coal SCV Flow	1-Nov-21	-55.28	-47.23	-33.82						This is a shallow thermogenic gas that may come from 200 to 300 m depth. Its isotope fingerprint has not changed since it was measured in Oct. 2020 and May 2021.
21R819717	04-17-056-21W4	METER FIT 4116	Nutrien CO2 Source	25-Oct-21								-42.20	
21R819717	14-07-056-21W4	METER FIT 090 FIR 0210	NWR CO2 Source	25-Oct-21								-26.47	
21R819730	04-15-040-24W4	METER 090-FIT-100	Combined CO2 Source	25-Oct-21								-29.23	
21E792846	100/04-26-039-24W4/00	WELLHEAD	Nisku Prod Gas	27-Aug-21	-31.03	-33.08	-28.47	-28.90	-27.32			3.67	Difficult to pick source. This sample was full of air. Methane value indicates it was altered. C2+ concentrations are unusal, but the isotope ratios indicate a typical mature source.
21E792836	100/08-02-040-24W4/02	WELLHEAD	Nisku Prod Gas	26-Aug-21	-38.24	-31.55	-28.56	-30.83	-28.16			-5.66	This gas has an isotope fingerprint typical of a mature Devonian gas.
21R782729	100/08-02-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	4-Aug-21	-40.32	-32.84	-28.05	-28.38	-26.28			-2.61	This gas is thermogenic and has a typical isotope fingerprint of a gas from the Nisku.
21R743507	100/08-35-039-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	13-May-21	-39.36	-32.65	-28.11	-29.37	-27.04			-6.62	This is a mature thermogenic gas that may come from or near the Nisku.
21R740736	102/09-16-040-24W4/00	SCV	Coal SCV Flow	6-May-21	-56.77	-46.80	-34.40	-27.62	-20.22				This is a shallow thermogenic gas that may come from around 200 to 300 m depth. It has not changed since measured in 2020.
21R741900	100/08-02-040-24W4/02	WELLHEAD TUBING	Nisku Prod Gas	4-May-21	-39.56	-32.11	-28.41	-29.38	-28.23			-5.44	This is a thermogenic gas that may come from around 1900 m depth.
21R728065	10-34-039-24W4	CMB HEADER	CBM Prod Gas	12-Apr-21	-54.92	-38.50	-28.52	-29.37	-27.98			8.26	This gas has an isotope fingerprint typical of CBM gases from that region.
21R728071	04-15-040-24W4	CBM HEADER	CBM Prod Gas	12-Apr-21	-55.80	-36.62	-28.54	-27.42	-28.52			8.63	This gas has an isotope fingerprint typical of CBM gases from that region.

21R711147	04-17-056-21W4	METER FIT 4116	**Nutrien CO2 Source**	17-Feb-21								-41.12	
21R711147	14-07-056-21W4	METER FIT 090 FIT 0210	**NWR CO2 Source**	17-Feb-21								-26.91	
21R707335	04-15-040-24W4	METER 090-FIT-100	**Combined CO2 Source**	17-Feb-21								-42.79	
2020													
20R650088	04-17-056-21W4	METER FIT 4116	**Nutrien CO2 Source**	15-Sep-20								-44.82	
20R650088	14-07-056-21W4	METER FIT 090 FIT 0210	**NWR CO2 Source**	15-Sep-20								-25.42	
20R667535	100/12-01-040-24W4/02	WELLHEAD TUBING	**Nisku Prod Gas**	23-Oct-20	-40.76	-33.72	-29.15	-29.09	-26.97	-26.81	-26.54		This gas has an isotope fingerprint typical of the Nisku in this region.
20R667535	100/04-11-040-24W4/02	WELLHEAD TUBING	**Leduc Prod Gas**	23-Oct-20	-40.48	-34.29	-29.04	-29.37	-27.04			-13.01	This gas has an isotope fingerprint typical of the Leduc in this region.
20R667535	100/10-35-039-24W4/02	WELLHEAD TUBING	**Leduc Prod Gas**	23-Oct-20	-40.17	-33.13	-28.22	-29.33	-27.59			-28.33	This gas has an isotope fingerprint typical of the Leduc in this region.
20R658420	102/09-16-040-24W4/00	SCV	**Coal SCV Flow**	2-Oct-20	-54.35	-47.15						-10.04	
20R619783	10-34-039-24W4	HEADER	**CBM Prod Gas**	2-Jul-20	-53.30	-38.00	-28.05	-30.72	-27.16			4.16	Typical CBM Gas
20R598691	10-34-039-24W4	HEADER	**CBM Prod Gas**	12-May-20	-55.50	-38.78	-28.11	-28.08	-29.63			-1.02	Typical CBM gas. Similar isotope fingerprint as before.
20R598691	100/01-02-040-24W5/02	WELLHEAD CASING	**Nisku Prod Gas**	12-May-20	-41.16	-30.67	-28.00	-27.19	-26.23			-8.40	Typical Nisku gas. Similar isotope fingerprint as before.
20R598691	100/04-26-039-24W4/00	CASING GAS	**Nisku Prod Gas**	12-May-20	2.18	-26.32	-26.46					-13.18	Atypical gas. Extremely low in methane concentration but contains multiple stray peaks on the gas chromatography run. Isotope data for methane is unusual but perhaps indicates some artificial alteration of the sample.
20R561525	04-26-039-24W4	HEADER	**Nisku Prod Gas**	13-Jan-20	-57.08	-32.44	-27.40	-26.27	-26.18			-4.46	This is a low maturity thermogenic gas, albiet a bit unusual. The C2+ values are relativey more enriched in 13C than would be indicated by the methane value. This header gas may be mixture.
2019													
19R833267	100/16-03-040-24W4/02	WELLHEAD	**Leduc Prod Gas**	22-Oct-19	-38.54	-32.38	-27.69	-29.80	-26.18			-1.55	This gas has a typical Leduc isotope fingerprint.
19R833267	100/04-11-040-24W4/00	WELLHEAD	**Leduc Prod Gas**	22-Oct-19	-32.57	-30.82	-27.36	-27.47	-26.21			-0.87	This has is a bit unusual having a 13-C enriched methane but the C2+ appears to be a typical Leduc gas.
19C523749	04-17-056-21W4	PV301	**Nutrien CO2 Source**	27-Sep-19								-41.89	
19C523749	04-17-056-21W4	Feed Gas	**Nutrien CH4 Inlet**	27-Sep-19	-44.79	-28.50	-27.07	-26.57	-25.37			-41.89	Typical Thermogenic Gas
19R520433	100/10-35-039-24W4/00	CASING GAS	**Leduc Prod Gas**	20-Sep-19	-39.48	-32.16	-28.69	-26.57	-27.06			0.50	This gas has the typical isotope fingerprint of a Leduc or Nisku gas.
19R520433	100/01-02-040-24W5/02	CASING GAS	**Nisku Prod Gas**	20-Sep-19	-40.10	-32.60	-27.79	-28.86	-26.28			-0.19	This gas has the typical isotope fingerprint of a Leduc or Nisku gas.
19R520433	100/12-01-040-24W4/02	CASING GAS	**Nisku Prod Gas**	20-Sep-19	-38.79	-32.47	-28.19	-29.97	-27.24			-0.72	This gas has the typical isotope fingerprint of a Leduc or Nisku gas.
19R496905	10-34-039-24W4	HEADER	**CBM Prod Gas**	25-Jul-19	-58.33	-38.26	-26.79	-27.27	-27.73			5.59	This is a typical CBM gas from this region.
19R492723	100/10-35-039-24W4/00	TEST METER RUN	**Leduc Prod Gas**	16-Jul-19	-39.73	-31.35	-27.09	-31.31	-25.74				This gas has the typical isotope fingerprint of a Leduc or Nisku gas.
19R492724	100/12-01-040-24W4/02	WELLHEAD	**Nisku Prod Gas**	16-Jul-19	-39.45	-31.41	-28.33	-26.17	-24.66				This gas has the typical isotope fingerprint of a Leduc or Nisku gas.
19R492725	100/16-02-040-24W4/00	WELLHEAD	**Nisku Prod Gas**	16-Jul-19	-38.90	-31.24	-27.63	-17.05	-27.25				This gas has the typical isotope fingerprint of a Leduc or Nisku gas.
19R492726	100/01-02-040-24W5/02	TEST METER RUN	**Nisku Prod Gas**	16-Jul-19	-39.48	-31.42	-27.09	-29.12	-26.76				This gas has the typical isotope fingerprint of a Leduc or Nisku gas.


CBM Gas Composition Concentrations
CO2 / H2S (Mole Fraction)
Methane (Mole Fraction)
0.010
0.008
0.006
0.004
0.002
0.000
1.00
0.99
0.98
0.97
0.96
0.95
0.94
0.93
0.92
0.91
0.90
2019-04-01
2019-10-01
2020-04-01
2020-10-01
2021-04-02
2021-10-02
2022-04-03
2022-10-03
04-15 CO2
10-34 CO2
12-12 CO2
04-15 H2S
10-34 H2S
12-12 H2S
04-15 C1
10-34 C1
12-12 C1



Source CO2 Concentration
CO2 (Mole Fraction)
1.0000
0.9500
0.9000
0.8500
0.8000
0.7500
2020-01-01
2020-07-01
2020-12-31
2021-07-01
2021-12-31
2022-07-01
2022-12-31
04-17-056-21W4 RCRF
14-07-056-21W4 NWR
04-15-040-24W4 Combined Stream

CBM Gas Analysis

					Gas Analysis (Mole Fraction)														
SOURCE LOCATION	OPERATOR NAME	FIELD	SAMPLER NAME	DATE SAMPLED	H2	He	N2	CO2	H2S	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7+
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-06-04	0.0003	0.0002	0.0079	0.0019	0.0000	0.9835	0.0053	0.0005	0.0001	0.0001	0.0001	0.0001	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-03	TRACE	0.0001	0.0075	0.0018	0.0000	0.9837	0.0050	0.0006	0.0001	0.0001	TRACE	TRACE	TRACE	0.0011
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-08-06	TRACE	0.0001	0.0078	0.0019	0.0000	0.9840	0.0053	0.0007	0.0001	0.0001	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-09-03	0.0004	0.0001	0.0060	0.0050	0.0000	0.9757	0.0118	0.0006	0.0003	0.0001	TRACE	TRACE	0.0000	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-10-01	TRACE	0.0001	0.0075	0.0017	0.0000	0.9846	0.0052	0.0005	0.0002	TRACE	0.0001	TRACE	TRACE	0.0001
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-11-04	TRACE	0.0001	0.0068	0.0017	0.0000	0.9854	0.0053	0.0006	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-12-02	TRACE	0.0001	0.0069	0.0016	0.0000	0.9854	0.0054	0.0005	0.0001	TRACE	TRACE	TRACE	0.0000	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-01-07	TRACE	0.0001	0.0077	0.0013	0.0000	0.9846	0.0055	0.0004	0.0002	0.0001	TRACE	0.0001	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-02-03	0.0001	0.0001	0.0089	0.0016	0.0000	0.9832	0.0052	0.0007	0.0001	0.0001	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-03-02	0.0007	TRACE	0.0077	0.0018	0.0000	0.9837	0.0054	TRACE	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-01	0.0001	0.0001	0.0071	0.0017	0.0000	0.9851	0.0053	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-05-01	0.0001	0.0001	0.0071	0.0017	0.0000	0.9851	0.0052	0.0006	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-06-01	TRACE	0.0001	0.0075	0.0017	0.0000	0.9850	0.0051	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-07-02	TRACE	0.0001	0.0074	0.0017	0.0000	0.9849	0.0053	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-08-06	0.0008	0.0001	0.0074	0.0020	0.0000	0.9830	0.0056	0.0007	0.0002	0.0002	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-09-01	0.0001	0.0001	0.0071	0.0018	0.0000	0.9849	0.0054	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-10-02	0.0001	0.0001	0.0078	0.0017	0.0000	0.9845	0.0052	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-11-04	0.0002	0.0001	0.0076	0.0017	0.0000	0.9846	0.0052	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-12-01	0.0000	0.0001	0.0080	0.0017	0.0000	0.9842	0.0053	0.0005	0.0001	0.0001	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-07	TRACE	0.0001	0.0077	0.0017	0.0000	0.9843	0.0054	0.0005	0.0002	0.0001	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-02-01	TRACE	0.0002	0.0089	0.0015	0.0000	0.9834	0.0054	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0001	0.0002	0.0081	0.0015	0.0000	0.9840	0.0052	0.0005	0.0001	0.0001	TRACE	TRACE	0.0001	0.0001
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-12	0.0001	0.0001	0.0072	0.0013	0.0000	0.9850	0.0057	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0002	0.0001	0.0070	0.0018	0.0000	0.9848	0.0054	0.0006	0.0001	TRACE	TRACE	TRACE	0.0000	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-01	0.0000	0.0001	0.0074	0.0019	0.0000	0.9845	0.0053	0.0007	0.0001	TRACE	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-07-02	0.0002	0.0001	0.0072	0.0017	0.0000	0.9845	0.0055	0.0006	0.0001	0.0001	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-04	TRACE	0.0001	0.0072	0.0018	0.0000	0.9850	0.0053	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-02	0.0000	0.0001	0.0073	0.0018	0.0000	0.9845	0.0054	0.0006	0.0001	TRACE	TRACE	TRACE	TRACE	0.0002
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-04	0.0002	0.0001	0.0071	0.0017	0.0000	0.9847	0.0054	0.0006	0.0001	0.0001	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	TRACE	0.0002	0.0078	0.0016	0.0000	0.9843	0.0052	0.0005	0.0001	0.0001	0.0001	TRACE	0.0001	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-01	TRACE	0.0001	0.0074	0.0016	0.0000	0.9848	0.0054	0.0005	0.0001	0.0001	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-10	0.0000	0.0001	0.0084	0.0015	0.0000	0.9841	0.0053	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	TRACE	0.0002	0.0079	0.0018	0.0000	0.9843	0.0052	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-07	0.0007	0.0001	0.0097	0.0021	0.0000	0.9780	0.0073	0.0016	0.0002	0.0003	0.0001	0.0000	0.0000	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-06	TRACE	0.0001	0.0111	0.0017	0.0000	0.9813	0.0052	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	TRACE	0.0001	0.0090	0.0019	0.0000	0.9828	0.0054	0.0006	0.0001	0.0001	TRACE	TRACE	TRACE	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-01	TRACE	0.0001	0.0084	0.0018	0.0000	0.9833	0.0055	0.0007	0.0001	0.0001	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0001	0.0001	0.0084	0.0020	0.0000	0.9831	0.0056	0.0005	0.0001	0.0001	TRACE	TRACE	TRACE	0.0000
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0000	0.0001	0.0094	0.0018	0.0000	0.9818	0.0055	0.0007	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	TRACE	0.0001	0.0095	0.0018	0.0000	0.9816	0.0056	0.0007	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	TRACE	0.0002	0.0097	0.0021	0.0000	0.9770	0.0073	0.0019	0.0004	0.0005	0.0002	0.0002	0.0002	0.0003
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0001	0.0002	0.0101	0.0018	0.0000	0.9805	0.0059	0.0007	0.0002	0.0001	0.0001	0.0001	0.0001	0.0001
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	TRACE	0.0002	0.0092	0.0017	0.0000	0.9817	0.0058	0.0008	0.0002	0.0001	0.0001	0.0001	0.0001	TRACE
04-15-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2023-01-05	TRACE	0.0001	0.0084	0.0017	0.0000	0.9828	0.0055	0.0007	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-25	TRACE	0.0002	0.0082	0.0021	0.0000	0.9842	0.0048	0.0004	0.0001	TRACE	TRACE	TRACE	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-10-01	0.0000	0.0001	0.0086	0.0014	0.0000	0.9836	0.0049	0.0009	0.0002	0.0000	0.0000	0.0000	0.0000	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-11-04	0.0026	0.0002	0.0119	0.0030	0.0000	0.9764	0.0051	0.0006	0.0001	0.0001	TRACE	TRACE	TRACE	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-01-07	0.0001	0.0002	0.0101	0.0019	0.0000	0.9818	0.0050	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-02-03	0.0000	0.0003	0.0147	0.0022	0.0000	0.9759	0.0046	0.0006	0.0002	0.0001	0.0001	0.0001	0.0002	0.0010
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-03-17	0.0002	0.0001	0.0178	0.0019	0.0000	0.9746	0.0048	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-01	0.0008	0.0001	0.0086	0.0017	0.0000	0.9828	0.0051	0.0005	0.0001	0.0001	0.0001	0.0000	0.0001	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-05-01	0.0003	0.0001	0.0097	0.0016	0.0000	0.9817	0.0050	0.0006	0.0001	0.0001	0.0000	0.0001	0.0001	0.0008
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-05-12	0.0000	0.0001	0.0135	0.0023	0.0000	0.9782	0.0047	0.0005	0.0003	0.0003	0.0001	0.0000	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-06-01	0.0005	0.0001	0.0087	0.0014	0.0000	0.9837	0.0050	0.0005	0.0001	TRACE	TRACE	TRACE	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-07-02	0.0004	0.0001	0.0117	0.0031	0.0000	0.9755	0.0053	0.0008	0.0002	0.0003	0.0002	0.0002	0.0004	0.0019
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-08-06	0.0002	0.0001	0.0122	0.0020	0.0000	0.9797	0.0049	0.0005	0.0002	0.0000	0.0000	0.0000	0.0000	0.0002
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-09-01	0.0000	0.0001	0.0111	0.0019	0.0000	0.9795	0.0051	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0015
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-10-02	0.0009	0.0002	0.0150	0.0020	0.0000	0.9751	0.0048	0.0006	0.0002	0.0002	0.0002	0.0002	0.0003	0.0005
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-11-04	0.0001	0.0001	0.0083	0.0026	0.0000	0.9831	0.0049	0.0005	0.0001	0.0000	0.0000	0.0000	0.0001	0.0002
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-12-01	0.0002	0.0002	0.0192	0.0021	0.0000	0.9722	0.0049	0.0005	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-07	0.0001	0.0001	0.0092	0.0018	0.0000	0.9831	0.0051	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-02-01	0.0000	0.0002	0.0095	0.0022	0.0000	0.9824	0.0050	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0001	0.0001	0.0079	0.0026	0.0000	0.9829	0.0051	0.0004	0.0001	0.0001	0.0001	0.0000	0.0001	0.0005
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-12	0.0003	0.0001	0.0077	0.0033	0.0000	0.9816	0.0050	0.0005	0.0001	0.0001	0.0000	0.0000	0.0001	0.0012
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0001	0.0001	0.0093	0.0018	0.0000	0.9825	0.0052	0.0005	0.0001	0.0001	0.0000	0.0000	0.0001	0.0002
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-01	0.0000	0.0001	0.0134	0.0034	0.0000	0.9744	0.0051	0.0007	0.0002	0.0002	0.0002	0.0002	0.0003	0.0020
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-07-02	0.0004	0.0001	0.0079	0.0023	0.0000	0.9836	0.0051	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-04	0.0000	0.0001	0.0080	0.0030	0.0000	0.9827	0.0051	0.0005	0.0001	0.0001	0.0000	0.0000	0.0001	0.0002
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-02	0.0005	0.0001	0.0209	0.0033	0.0000	0.9688	0.0050	0.0006	0.0001	0.0001	0.0001	0.0001	0.0001	0.0002
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-04	0.0002	0.0001	0.0208	0.0036	0.0000	0.9679	0.0051	0.0008	0.0002	0.0004	0.0002	0.0002	0.0003	0.0004
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0011	0.0001	0.0121	0.0033	0.0000	0.9748	0.0048	0.0004	0.0001	0.0001	0.0001	0.0001	0.0002	0.0029
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-01	0.0000	0.0001	0.0077	0.0018	0.0000	0.9846	0.0052	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-17	0.0001	0.0001	0.0066	0.0019	0.0000	0.9854	0.0052	0.0006	0.0001	TRACE	TRACE	TRACE	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	0.0008	0.0001	0.0076	0.0024	0.0000	0.9821	0.0052	0.0006	0.0002	0.0002	0.0001	0.0001	0.0002	0.0006
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-07	0.0018	0.0001	0.0062	0.0039	0.0000	0.9822	0.0052	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0001	0.0001	0.0168	0.0024	0.0000	0.9739	0.0051	0.0006	0.0001	0.0001	0.0001	0.0001	0.0001	0.0007
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	0.0000	0.0001	0.0130	0.0016	0.0000	0.9790	0.0051	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0004
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-13	0.0000	0.0001	0.0138	0.0016	0.0000	0.9788	0.0050	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-01	0.0000	0.0001	0.0123	0.0018	0.0000	0.9792	0.0053	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0003
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0000	0.0001	0.0122	0.0017	0.0000	0.9799	0.0052	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0003
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0001	0.0001	0.0142	0.0016	0.0000	0.9779	0.0052	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0003
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0001	0.0001	0.0006	0.0016	0.0000	0.9920	0.0051	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	0.0002	0.0001	0.0114	0.0025	0.0000	0.9797	0.0051	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0004
10-34-039-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0000	0.0001	0.0106	0.0019	0.0000	0.9812	0.0051	0.0005	0.0001	0.0001	0.0000	0.0001	0.0001	0.0003
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-07	0.0003	0.0002	0.0136	0.0025	0.0000	0.9736	0.0048	0.0005	0.0001	0.0001	TRACE	0.0001	0.0003	0.0039
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0001	0.0002	0.0105	0.0017	0.0000	0.9768	0.0047	0.0006	0.0002	0.0002	0.0001	0.0001	0.0003	0.0045
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-12	0.0002	0.0002	0.0106	0.0020	0.0000	0.9804	0.0050	0.0009	0.0002	0.0001	0.0001	0.0001	0.0001	0.0002
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0001	0.0002	0.0082	0.0019	0.0000	0.9837	0.0050	0.0005	0.0001	TRACE	TRACE	TRACE	0.0001	0.0002
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-01	0.0001	0.0002	0.0099	0.0022	0.0000	0.9821	0.0048	0.0005	0.0001	TRACE	TRACE	TRACE	TRACE	0.0001
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-07-02	TRACE	0.0002	0.0126	0.0043	0.0000	0.9770	0.0048	0.0002	0.0001	0.0001	TRACE	TRACE	0.0001	0.0006
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-04	0.0000	0.0002	0.0122	0.0020	0.0000	0.9796	0.0048	0.0005	0.0002	0.0004	0.0001	TRACE	TRACE	TRACE
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-02	0.0000	0.0002	0.0102	0.0018	0.0000	0.9797	0.0048	0.0004	0.0001	0.0000	0.0000	0.0001	0.0001	0.0025
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-04	0.0007	0.0002	0.0284	0.0014	0.0000	0.9617	0.0049	0.0005	0.0001	0.0001	0.0001	0.0001	0.0003	0.0015
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0001	0.0002	0.0148	0.0023	0.0000	0.9768	0.0050	0.0006	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-01	TRACE	0.0002	0.0162	0.0011	0.0000	0.9771	0.0048	0.0004	0.0001	0.0001	TRACE	TRACE	TRACE	TRACE
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-17	0.0001	0.0002	0.0118	0.0023	0.0000	0.9783	0.0052	0.0006	0.0002	0.0001	0.0001	0.0001	0.0002	0.0008
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	0.0000	0.0002	0.0128	0.0062	0.0000	0.9733	0.0047	0.0004	0.0001	TRACE	TRACE	TRACE	0.0001	0.0022
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-07	0.0004	0.0002	0.0200	0.0025	0.0000	0.9709	0.0050	0.0005	0.0002	0.0001	0.0001	TRACE	TRACE	0.0001
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0003	0.0002	0.0314	0.0023	0.0000	0.9599	0.0047	0.0005	0.0001	0.0001	0.0000	0.0000	0.0001	0.0005
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	0.0000	0.0002	0.0210	0.0023	0.0000	0.9698	0.0047	0.0005	0.0002	0.0002	0.0001	0.0001	0.0002	0.0007
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-26	0.0003	0.0002	0.0187	0.0022	0.0000	0.9734	0.0045	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-01	0.0000	0.0002	0.0140	0.0019	0.0000	0.9784	0.0047	0.0004	0.0002	0.0000	0.0000	0.0000	0.0000	0.0003
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0000	0.0002	0.0165	0.0021	0.0000	0.9758	0.0047	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000	0.0002
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	TRACE	0.0002	0.0207	0.0019	0.0000	0.9713	0.0048	0.0005	0.0001	TRACE	TRACE	TRACE	0.0001	0.0004
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0001	0.0002	0.0172	0.0020	0.0000	0.9744	0.0051	0.0005	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	0.0001	0.0002	0.0180	0.0021	0.0000	0.9735	0.0051	0.0004	0.0001	TRACE	0.0001	0.0001	0.0001	0.0002
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0004	0.0002	0.0155	0.0020	0.0000	0.9751	0.0057	0.0007	0.0002	0.0001	TRACE	TRACE	TRACE	0.0001
12-12-040-24W4	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	0.0002	0.0003	0.0176	0.0022	0.0000	0.9726	0.0057	0.0007	0.0002	0.0001	0.0001	TRACE	0.0001	0.0002

CO_2 Gas Analysis

SOURCE LOCATION	OPERATOR NAME	FIELD	SAMPLER NAME	DATE SAMPLED	Gas Analysis (Mole Fraction)													
					H2	He	N2	CO2	H2S	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7+
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-07	0.0091	0.0000	0.0009	0.9896	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-02-17	0.0174	0.0000	0.0037	0.9788	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0058	0.0000	0.0004	0.9932	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-13	0.0103	0.0000	0.0006	0.9881	0.0000	0.0009	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0150	0.0000	0.0006	0.9834	0.0000	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-01	0.0271	0.0000	0.0015	0.9701	0.0000	0.0013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-07-02	0.0204	0.0000	0.0007	0.9776	0.0000	0.0013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-04	0.0226	0.0000	0.0013	0.9748	0.0000	0.0013	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-02	0.0204	0.0000	0.0004	0.9779	0.0000	0.0012	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-04	0.0074	0.0000	0.0099	0.9822	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-25	0.0062	0.0000	0.0068	0.9843	0.0000	0.0005	0.0005	0.0002	0.0001	0.0002	0.0002	0.0001	0.0002	0.0008
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-01	0.0075	0.0000	0.0006	0.9915	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-10	0.0123	0.0000	0.0071	0.9762	0.0000	0.0022	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0020
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	0.0062	0.0000	0.0013	0.9912	0.0000	0.0007	0.0001	0.0000	0.0001	0.0000	0.0000	0.0000	0.0002	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-07	0.0064	0.0000	0.0003	0.9924	0.0000	0.0008	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0080	0.0000	0.0010	0.9904	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	0.0052	0.0000	0.0023	0.9913	0.0000	0.0006	0.0000	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-13	0.0041	0.0000	0.0010	0.9936	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0084	0.0000	0.0074	0.9832	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0059	0.0000	0.0047	0.9873	0.0000	0.0010	0.0001	0.0002	TRACE	0.0001	0.0001	0.0001	0.0001	0.0004
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0061	0.0000	0.0022	0.9907	0.0000	0.0009	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.0001
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	0.0071	0.0000	0.0058	0.9849	0.0000	0.0004	0.0001	0.0001	0.0001	0.0002	0.0002	0.0002	0.0003	0.0006
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0069	0.0000	0.0017	0.9894	0.0000	0.0002	0.0001	0.0001	0.0004	0.0008	0.0001	0.0001	0.0001	0.0001
04-15-040-24W4 Combined Stream	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	0.0064	0.0000	0.0002	0.9920	0.0000	0.0010	0.0002	0.0001	TRACE	0.0001	TRACE	TRACE	TRACE	TRACE
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-05-07	0.0020	0.0000	0.0010	0.9932	0.0000	0.0001	TRACE	0.0010	0.0005	0.0013	0.0004	0.0003	0.0001	0.0001
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-05-21	0.0078	0.0000	0.0024	0.9897	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-06-22	0.0040	0.0000	0.0011	0.9948	0.0000	0.0001	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-07-08	0.0022	0.0000	0.0017	0.9960	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-08-13	0.0104	0.0000	0.0029	0.9866	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-09-15	0.0350	0.0000	0.0033	0.9612	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0002
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-10-13	0.0112	0.0000	0.0022	0.9864	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-11-03	0.0478	0.0000	0.0058	0.9461	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-11-19	0.0015	0.0000	0.0011	0.9966	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0007
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-12-02	0.0392	0.0000	0.0044	0.9550	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0012
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-01-14	0.0092	0.0000	0.0034	0.9873	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-02-17	0.0106	0.0000	0.0042	0.9845	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0006
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-02-17	0.0139	0.0000	0.0037	0.9821	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-03-02	0.0071	0.0000	0.0018	0.9910	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-04-07	0.0075	0.0000	0.0015	0.9889	0.0000	0.0003	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	0.0018
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-04-07	0.0099	0.0000	0.0017	0.9883	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-05-07	0.0130	0.0000	0.0026	0.9837	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0005
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-05-07	0.0104	0.0000	0.0027	0.9866	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-06-01	0.0134	0.0000	0.0028	0.9837	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-07-08	0.0116	0.0000	0.0026	0.9858	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-10-25	0.0266	0.0000	0.0056	0.9674	0.0000	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-11-25	0.0075	0.0000	0.0019	0.9903	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-03-11	0.0087	0.0000	0.0019	0.9871	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0023
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-04-21	0.0083	0.0000	0.0018	0.9898	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-05-24	0.0148	0.0000	0.0028	0.9822	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-06-23	0.0169	0.0000	0.0029	0.9790	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0010
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-07-22	0.0092	0.0000	0.0021	0.9863	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0024
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-08-30	0.0080	0.0000	0.0017	0.9902	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-09-21	0.0087	0.0000	0.0017	0.9895	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
04-17-056-21W4 RCRF	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-11-28	0.0042	0.0000	0.0012	0.9944	0.0000	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-04-07	0.0102	0.0000	0.0003	0.9878	0.0000	0.0014	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-05-07	0.0070	0.0000	0.0006	0.9830	0.0000	0.0012	TRACE	0.0009	0.0008	0.0023	0.0010	0.0013	0.0008	0.0011
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-05-21	0.0073	0.0000	0.0004	0.9918	0.0000	0.0005	TRACE	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-06-22	0.0068	0.0000	0.0006	0.9915	0.0000	0.0011	TRACE	TRACE	TRACE	TRACE	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-07-08	0.0064	0.0000	0.0003	0.9923	0.0000	0.0009	0.0001	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE	TRACE
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-08-13	0.0087	0.0000	0.0001	0.9903	0.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-09-15	0.0064	0.0000	0.0004	0.9921	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-10-13	0.0078	0.0000	0.0005	0.9906	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0002
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-11-03	0.0083	0.0000	0.0008	0.9902	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-11-19	0.0084	0.0000	0.0003	0.9908	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2020-12-02	0.0062	0.0000	0.0010	0.9906	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0014
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-01-14	0.0084	0.0000	0.0010	0.9899	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-02-17	0.0088	0.0000	0.0003	0.9901	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-03-02	0.0065	0.0000	0.0003	0.9924	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-04-07	0.0061	0.0000	0.0002	0.9929	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-05-07	0.0072	0.0000	0.0003	0.9906	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0009
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-06-01	0.0076	0.0000	0.0010	0.9888	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0019
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-07-08	0.0059	0.0000	0.0002	0.9933	0.0000	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-08-10	0.0094	0.0000	0.0006	0.9892	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-09-07	0.0082	0.0000	0.0012	0.9895	0.0000	0.0006	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-10-25	0.0076	0.0000	0.0003	0.9905	0.0000	0.0005	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0010
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-11-25	0.0061	0.0000	0.0002	0.9933	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2021-12-29	0.0071	0.0000	0.0024	0.9896	0.0000	0.0007	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0001
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-01-26	0.0065	0.0000	0.0008	0.9876	0.0000	0.0006	0.0001	0.0000	0.0001	0.0003	0.0007	0.0010	0.0008	0.0016
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-02-25	0.0077	0.0000	0.0002	0.9913	0.0000	0.0008	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-03-11	0.0075	0.0000	0.0001	0.9903	0.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0002	0.0009
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-04-21	0.0070	0.0000	0.0013	0.9910	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-05-24	0.0061	0.0000	0.0004	0.9930	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-06-23	0.0051	0.0000	0.0004	0.9936	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-07-22	0.0074	0.0000	0.0005	0.9914	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-11-28	0.0067	0.0000	0.0005	0.9921	0.0000	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
14-07-056-21W4 NWR	ENHANCE ENERGY INC	REDWATER	AGAT RED DEER	2022-12-30	0.0073	0.0000	0.0005	0.9914	0.0000	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Leduc Gas Analysis

Gas Analysis (Mole Fraction)

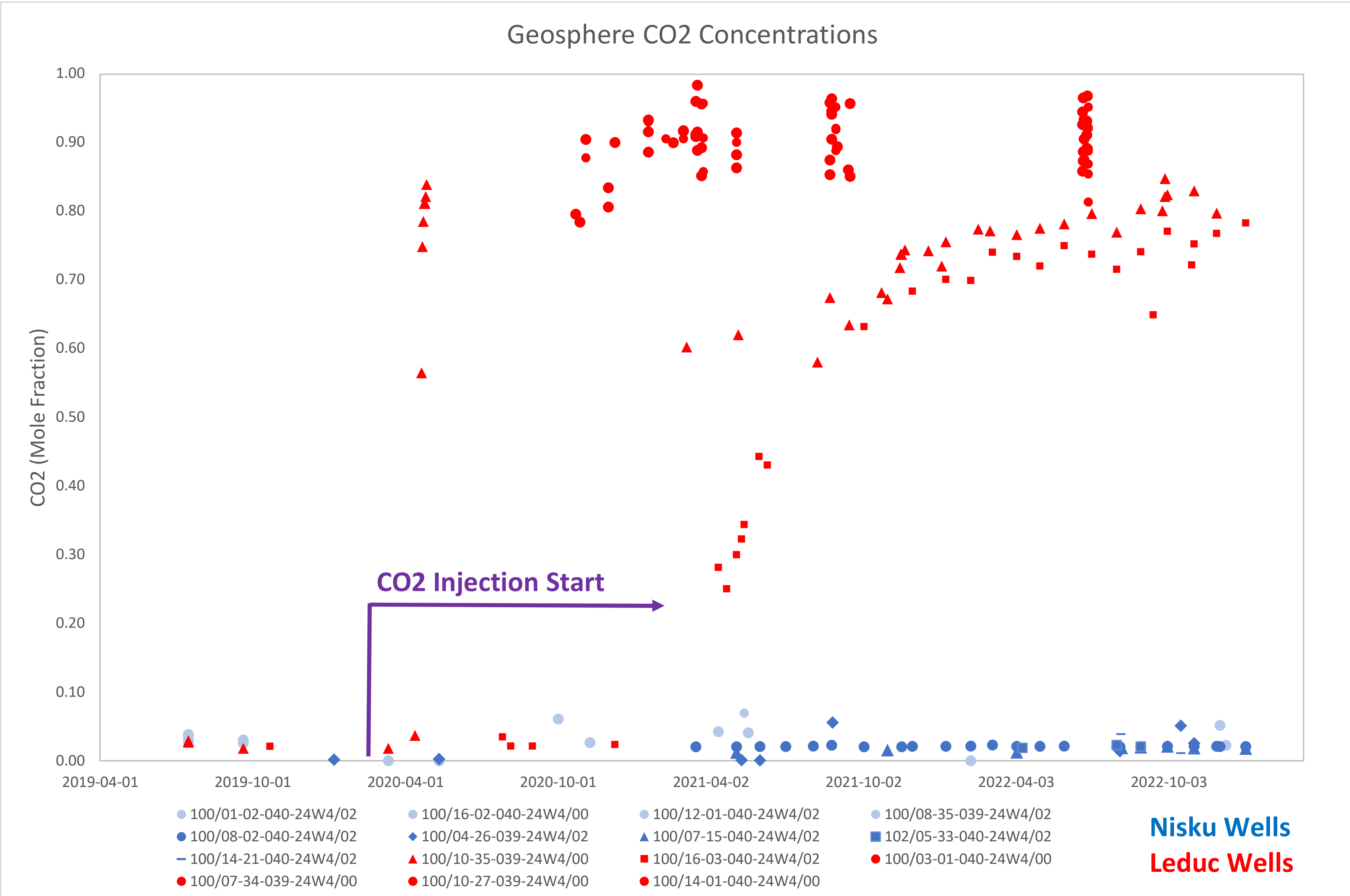
SOURCE LOCATION	OPERATOR NAME	FIELD	SAMPLER NAME	DATE SAMPLED	H2	He	N2	CO2	H2S	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7+
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-11-04	0.0028	TRACE	0.0013	0.8780	0.0693	0.0294	0.0048	0.0050	0.0010	0.0032	0.0011	0.0015	0.0012	0.0014
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-18	0.0060	TRACE	0.0004	0.9304	0.0164	0.0340	0.0043	0.0034	0.0006	0.0016	0.0005	0.0007	0.0006	0.0011
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-02-08	0.0064	TRACE	0.0086	0.9057	0.0147	0.0458	0.0063	0.0053	0.0009	0.0026	0.0008	0.0010	0.0007	0.0012
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0066	TRACE	0.0058	0.9058	0.0152	0.0459	0.0062	0.0051	0.0009	0.0027	0.0008	0.0011	0.0009	0.0030
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-25	0.0081	0.0000	0.0063	0.9071	0.0153	0.0471	0.0061	0.0049	0.0007	0.0021	0.0006	0.0007	0.0004	0.0007
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-25	0.0005	0.0000	0.0024	0.9575	0.0234	0.0010	0.0001	0.0003	0.0021	0.0067	0.0005	0.0007	0.0016	0.0031
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-25	0.0004	0.0000	0.0012	0.8582	0.0062	0.0134	0.0072	0.0154	0.0230	0.0552	0.0060	0.0058	0.0037	0.0043
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0089	TRACE	0.0178	0.9006	0.0186	0.0375	0.0054	0.0046	0.0008	0.0023	0.0007	0.0009	0.0007	0.0012
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-31	0.0069	TRACE	0.0037	0.9210	0.0159	0.0376	0.0050	0.0040	0.0007	0.0021	0.0006	0.0008	0.0006	0.0011
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-31	0.0004	0.0000	0.0015	0.8885	0.0197	0.0135	0.0071	0.0153	0.0049	0.0175	0.0078	0.0103	0.0052	0.0083
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-31	0.0001	0.0000	0.0032	0.9519	0.0134	0.0008	0.0000	0.0005	0.0040	0.0120	0.0011	0.0016	0.0032	0.0084
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-31	0.0076	0.0000	0.0041	0.9193	0.0159	0.0374	0.0050	0.0043	0.0008	0.0022	0.0007	0.0009	0.0007	0.0012
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-30	0.0078	0.0001	0.0102	0.8547	0.0225	0.0847	0.0086	0.0059	0.0008	0.0023	0.0006	0.0007	0.0005	0.0006
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-30	0.0088	0.0001	0.0134	0.8139	0.0293	0.1088	0.0120	0.0071	0.0010	0.0028	0.0007	0.0009	0.0004	0.0006
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-30	0.0007	0.0000	0.0063	0.9521	0.0145	0.0005	0.0003	0.0033	0.0035	0.0085	0.0037	0.0029	0.0015	0.0021
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-30	0.0002	0.0000	0.0064	0.8881	0.0131	0.0269	0.0086	0.0145	0.0049	0.0130	0.0079	0.0077	0.0037	0.0050
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-30	0.0008	0.0000	0.0029	0.8691	0.0228	0.0374	0.0123	0.0182	0.0056	0.0140	0.0064	0.0058	0.0021	0.0026
100/03-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-30	0.0002	0.0000	0.0031	0.9207	0.0497	0.0009	0.0001	0.0004	0.0063	0.0173	0.0004	0.0003	0.0002	0.0005
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-12-09	0.0061	TRACE	0.0004	0.9003	0.0141	0.0510	0.0080	0.0074	0.0013	0.0039	0.0013	0.0016	0.0015	0.0031
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-18	0.0035	0.0000	0.0014	0.9331	0.0137	0.0272	0.0050	0.0054	0.0011	0.0034	0.0012	0.0016	0.0014	0.0020
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0062	0.0000	0.0002	0.9175	0.0125	0.0435	0.0064	0.0060	0.0008	0.0028	0.0009	0.0011	0.0009	0.0012
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-18	0.0068	0.0000	0.0047	0.9158	0.0156	0.0373	0.0059	0.0051	0.0009	0.0028	0.0009	0.0013	0.0006	0.0023
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-18	0.0022	0.0000	0.0029	0.8890	0.0114	0.0254	0.0099	0.0177	0.0053	0.0158	0.0059	0.0060	0.0042	0.0044
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-18	0.0006	0.0000	0.0033	0.9838	0.0070	0.0006	0.0001	0.0001	0.0002	0.0004	0.0001	0.0002	0.0011	0.0027
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0123	TRACE	0.0181	0.8827	0.0173	0.0432	0.0064	0.0053	0.0011	0.0036	0.0013	0.0019	0.0020	0.0048
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-24	0.0079	0.0000	0.0067	0.8751	0.0174	0.0623	0.0086	0.0074	0.0013	0.0039	0.0013	0.0018	0.0013	0.0051
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-24	0.0002	0.0000	0.0035	0.9585	0.0320	0.0011	0.0001	0.0002	0.0003	0.0005	0.0002	0.0003	0.0009	0.0021
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-24	0.0008	0.0000	0.0030	0.8535	0.0218	0.0296	0.0140	0.0261	0.0070	0.0211	0.0077	0.0078	0.0043	0.0034
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-24	0.0080	0.0001	0.0194	0.8736	0.0145	0.0628	0.0083	0.0065	0.0010	0.0029	0.0008	0.0010	0.0004	0.0008
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-25	0.0082	0.0001	0.0201	0.8750	0.0146	0.0598	0.0079	0.0060	0.0009	0.0026	0.0007	0.0009	0.0008	0.0023
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-24	0.0004	0.0000	0.0005	0.8872	0.0213	0.0159	0.0086	0.0170	0.0051	0.0165	0.0069	0.0084	0.0060	0.0055
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-24	0.0002	0.0000	0.0018	0.9655	0.0269	0.0007	0.0001	0.0003	0.0002	0.0006	0.0004	0.0006	0.0008	0.0020
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-25	0.0006	0.0000	0.0025	0.9056	0.0173	0.0191	0.0082	0.0141	0.0042	0.0121	0.0048	0.0050	0.0033	0.0027
100/07-34-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-25	0.0002	0.0000	0.0025	0.9337	0.0180	0.0009	0.0002	0.0007	0.0120	0.0306	0.0004	0.0002	0.0002	0.0005
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-10-23	0.0068	0.0001	0.0156	0.7960	0.0327	0.1109	0.0139	0.0099	0.0017	0.0050	0.0015	0.0020	0.0016	0.0023
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-10-28	0.0080	0.0001	0.0170	0.7846	0.0366	0.1159	0.0138	0.0104	0.0017	0.0050	0.0016	0.0020	0.0015	0.0018
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-11-04	0.0008	0.0000	0.0011	0.9050	0.0693	0.0184	0.0020	0.0012	0.0001	0.0005	0.0002	0.0002	0.0002	0.0010
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-12-01	0.0072	0.0001	0.0104	0.8065	0.0291	0.1034	0.0136	0.0110	0.0019	0.0055	0.0016	0.0022	0.0023	0.0052
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-18	0.0033	TRACE	0.0012	0.9161	0.0192	0.0374	0.0061	0.0076	0.0011	0.0028	0.0008	0.0014	0.0012	0.0018
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-23	0.0081	0.0000	0.0055	0.8928	0.0151	0.0506	0.0079	0.0069	0.0013	0.0039	0.0012	0.0017	0.0014	0.0037
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-23	0.0003	0.0000	0.0026	0.9564	0.0288	0.0010	0.0002	0.0003	0.0003	0.0008	0.0007	0.0010	0.0015	0.0063
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-23	0.0009	0.0000	0.0028	0.8519	0.0242	0.0234	0.0137	0.0261	0.0078	0.0229	0.0080	0.0081	0.0049	0.0053
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0111	TRACE	0.0219	0.8636	0.0186	0.0559	0.0078	0.0070	0.0013	0.0037	0.0012	0.0016	0.0014	0.0049
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-02	0.0073	0.0000	0.0080	0.8944	0.0184	0.0489	0.0070	0.0062	0.0012	0.0034	0.0010	0.0013	0.0011	0.0018
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-15	0.0018	0.0000	0.0056	0.8605	0.0097	0.0339	0.0121	0.0217	0.0079	0.0223	0.0078	0.0078	0.0047	0.0043
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-17	0.0008	0.0000	0.0018	0.9570	0.0327	0.0011	0.0000	0.0002	0.0008	0.0031	0.0001	0.0002	0.0006	0.0017
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-17	0.0007	0.0000	0.0035	0.8509	0.0242	0.0200	0.0113	0.0232	0.0074	0.0253	0.0093	0.0110	0.0068	0.0064
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-29	0.0086	0.0000	0.0059	0.8912	0.0169	0.0609	0.0068	0.0052	0.0007	0.0021	0.0004	0.0006	0.0002	0.0005
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT/CALGARY	2022-06-28	0.0098	0.0000	0.0074	0.8923	0.0141	0.0595	0.0068	0.0052	0.0007	0.0022	0.0005	0.0006	0.0002	0.0007
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT/CALGARY	2022-06-28	0.0025	0.0000	0.0019	0.9117	0.0121	0.0272	0.0071	0.0108	0.0053	0.0134	0.0030	0.0030	0.0010	0.0009
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT/CALGARY	2022-06-28	0.0001	0.0000	0.0031	0.9316	0.0148	0.0010	0.0024	0.0089	0.0057	0.0155	0.0067	0.0070	0.0018	0.0013
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-29	0.0009	0.0000	0.0017	0.9221	0.0131	0.0179	0.0061	0.0097	0.0037	0.0111	0.0037	0.0042	0.0021	0.0034
100/10-27-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-29	0.0002	0.0000	0.0019	0.9683	0.0244	0.0011	0.0003	0.0004	0.0002	0.0008	0.0004	0.0006	0.0004	0.0010
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-16	0.0005	0.0005	0.0483	0.0291	0.1003	0.6958	0.0771	0.0332	0.0035	0.0073	0.0013	0.0014	0.0008	0.0009
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-16	0.0013	0.0005	0.0539	0.0272	0.1003	0.6914	0.0762	0.0333	0.0036	0.0074	0.0013	0.0014	0.0008	0.0014
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-09-20	0.0009	0.0009	0.1067	0.0181	0.0439	0.7477	0.0473	0.0207	0.0025	0.0060	0.0014	0.0016	0.0012	0.0012
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-03-12	0.0009	0.0013	0.1129	0.0183	0.0420	0.7395	0.0503	0.0232	0.0028	0.0063	0.0010	0.0009	0.0003	0.0005
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-13	0.0028	0.0010	0.1009	0.0370	0.0000	0.7375	0.0678	0.0338	0.0041	0.0100	0.0019	0.0021	0.0005	0.0006
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-21	0.0094	0.0002	0.0327	0.5652	0.0350	0.2947	0.0322	0.0185	0.0022	0.0049	0.0009	0.0011	0.0008	0.0024
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-22	0.0074	0.0001	0.0137	0.7487	0.0274	0.1477	0.0238	0.0146	0.0018	0.0044	0.0010	0.0013	0.0009	0.0072
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-23	0.0068	0.0001	0.0109	0.7854	0.0282	0.1217	0.0220	0.0158	0.0019	0.0047	0.0009	0.0009	0.0002	0.0006
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-24	0.0068	0.0001	0.0105	0.8114	0.0255	0.1030	0.0187	0.0140	0.0018	0.0046	0.0010	0.0011	0.0005	0.0011
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-25	0.0077	0.0001	0.0112	0.8117	0.0252	0.1051	0.0181	0.0124	0.0016	0.0042	0.0008	0.0008	0.0004	0.0008
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-26	0.0080	0.0001	0.0157	0.8217	0.0212	0.0973	0.0134	0.0109	0.0016	0.0043	0.0017	0.0016	0.0009	0.0016
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-04-27	0.0074	0.0001	0.0100	0.8394	0.0215	0.0902	0.0137	0.0100	0.0013	0.0033	0.0009	0.0010	0.0006	0.0007
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-05	0.0144	0.0005	0.0483	0.6027	0.0000	0.3093	0.0182	0.0056	0.0003	0.0006	0.0000	0.0000	0.0000	0.0001
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-06	0.0120	0.0005	0.0431	0.6203	0.0000	0.2981	0.0174	0.0063	0.0005	0.0012	0.0001	0.0001	0.0001	0.0003
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-09	0.0047	0.0003	0.0330	0.5806	0.0296	0.2965	0.0253	0.0149	0.0020	0.0058	0.0015	0.0018	0.0013	0.0027
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-24	0.0074	0.0002	0.0262	0.6746	0.0254	0.2080	0.0196	0.0124	0.0018	0.0049	0.0018	0.0027	0.0035	0.0115
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-09-16	0.0082	0.0003	0.0422	0.6349	0.0188	0.2557	0.0208	0.0111	0.0013	0.0036	0.0008	0.0010	0.0004	0.0008
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-25	0.0065	0.0002	0.0277	0.6820	0.0251	0.1983	0.0188	0.0119	0.0017	0.0051	0.0022	0.0035	0.0058	0.0112
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0076	0.0003	0.0261	0.6725	0.0204	0.2238	0.0194	0.0119	0.0015	0.0039	0.0011	0.0016	0.0018	0.0082
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-16	0.0067	0.0002	0.0233	0.7182	0.0161	0.1907	0.0181	0.0111	0.0016	0.0044	0.0012	0.0017	0.0017	0.0050
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-17	0.0074	0.0002	0.0200	0.7380	0.0223	0.1776	0.0166	0.0097	0.0012	0.0032	0.0009	0.0010	0.0007	0.0012
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-18	0.0072	0.0002	0.0175	0.7375	0.0280	0.1696	0.0163	0.0104	0.0015	0.0041	0.0011	0.0015	0.0012	0.0039
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-22	0.0069	0.0002	0.0179	0.7442	0.0275	0.1638	0.0161	0.0104	0.0015	0.0041	0.0011	0.0015	0.0013	0.0035
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-20	0.0060	0.0002	0.0259	0.7429	0.0187	0.1589	0.0169	0.0117	0.0016	0.0045	0.0014	0.0020	0.0026	0.0067
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-05	0.0098	0.0002	0.0224	0.7205	0.0290	0.1804	0.0159	0.0096	0.0012	0.0033	0.0009	0.0013	0.0014	0.0041
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-10	0.0075	0.0002	0.0217	0.7559	0.0165	0.1582	0.0157	0.0102	0.0015	0.0041	0.0012	0.0015	0.0013	0.0046
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-18	0.0078	0.0001	0.0237	0.7743	0.0287	0.1353	0.0150	0.0091	0.0012	0.0031	0.0006	0.0006	0.0002	0.0003
100/10-35-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-04	0.0081	0.0001	0.0183	0.7719	0.0163	0.1514	0.0150	0.0088	0.0013	0.0034	0.0009	0.0012	0.0010	0.0023
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0081	0.0002	0.0173	0.7662	0.0214	0.1475	0.0147	0.0096	0.0014	0.0039	0.0011	0.0014	0.0013	0.0059
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	0.0074	0.0001	0.0160	0.7755	0.0334	0.1342	0.0138	0.0090	0.0013	0.0036	0.0010	0.0013	0.0007	0.0028
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-01	0.0077	0.0001	0.0161	0.7819	0.0163	0.1387	0.0144	0.0099	0.0016	0.0047	0.0014	0.0018	0.0015	0.0036
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0075	0.0001	0.0147	0.7968	0.0185	0.1279	0.0136	0.0087	0.0013	0.0035	0.0010	0.0013	0.0009	0.0043
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0091	0.0002	0.0172	0.7700	0.0215	0.1486	0.0146	0.0083	0.0013	0.0037	0.0009	0.0013	0.0007	0.0025
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0072	0.0001	0.0123	0.8039	0.0203	0.1165	0.0134	0.0099	0.0016	0.0043	0.0012	0.0016	0.0016	0.0059
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-27	0.0089	0.0001	0.0150	0.8010	0.0182	0.1292	0.0130	0.0082	0.0010	0.0027	0.0006	0.0007	0.0004	0.0009
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-30	0.0075	0.0001	0.0134	0.8218	0.0184	0.1139	0.0120	0.0073	0.0011	0.0025	0.0005	0.0007	0.0003	0.0006
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-30	0.0007	0.0000	0.0009	0.8479	0.0257	0.0426	0.0134	0.0191	0.0046	0.0146	0.0059	0.0077	0.0053	0.0110
100/10-35-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	0.0059	0.0001	0.0105	0.8244	0.0189	0.1051	0.0128	0.0095	0.0016	0.0045	0.0013	0.0016	0.0012	0.0026
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0075	0.0000	0.0102	0.8302	0.0187	0.0901	0.0101	0.0071	0.0011	0.0031	0.0020	0.0037	0.0059	0.0097
100/10-35-039-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	0.0129	0.0001	0.0191	0.7977	0.0353	0.1124	0.0100	0.0061	0.0008	0.0022	0.0006	0.0007	0.0006	0.0016
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-12-01	0.0011	TRACE	0.0142	0.8345	0.0556	0.0464	0.0134	0.0147	0.0030	0.0074	0.0021	0.0027	0.0019	0.0030
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-01-18	0.0043	TRACE	0.0004	0.8864	0.0274	0.0566	0.0085	0.0070	0.0011	0.0032	0.0009	0.0012	0.0010	0.0020
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-02-17	0.0074	TRACE	0.0050	0.9001	0.0308	0.0402	0.0053	0.0044	0.0007	0.0022	0.0006	0.0008	0.0006	0.0019
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-01	0.0066	TRACE	0.0042	0.9169	0.0166	0.0388	0.0052	0.0044	0.0007	0.0023	0.0007	0.0009	0.0007	0.0020
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-16	0.0095	0.0000	0.0055	0.9092	0.0180	0.0432	0.0051	0.0041	0.0006	0.0017	0.0004	0.0006	0.0004	0.0018
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-16	0.0013	0.0000	0.0037	0.9121	0.0154	0.0123	0.0065	0.0156	0.0038	0.0119	0.0051	0.0055	0.0035	0.0035
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-16	0.0003	0.0000	0.0009	0.9604	0.0278	0.0006	0.0001	0.0002	0.0002	0.0009	0.0006	0.0009	0.0023	0.0049
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0084	TRACE	0.0052	0.9143	0.0173	0.0399	0.0049	0.0039	0.0006	0.0019	0.0005	0.0007	0.0007	0.0017
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-26	0.0100	0.0000	0.0080	0.9052	0.0147	0.0491	0.0051	0.0036	0.0005	0.0015	0.0003	0.0005	0.0003	0.0013
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-26	0.0003	0.0000	0.0008	0.9415	0.0166	0.0086	0.0040	0.0075	0.0022	0.0070	0.0028	0.0034	0.0018	0.0034
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-26	0.0003	0.0000	0.0031	0.9460	0.0150	0.0086	0.0041	0.0074	0.0021	0.0059	0.0022	0.0023	0.0011	0.0020
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-26	0.0002	0.0000	0.0049	0.9642	0.0222	0.0027	0.0007	0.0010	0.0002	0.0008	0.0004	0.0005	0.0005	0.0018
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-23	0.0095	0.0001	0.0109	0.8588	0.0131	0.0861	0.0112	0.0056	0.0006	0.0020	0.0005	0.0006	0.0003	0.0007
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-23	0.0003	0.0000	0.0011	0.9449	0.0420	0.0007	0.0001	0.0012	0.0009	0.0026	0.0015	0.0017	0.0010	0.0019
100/14-01-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-23	0.0006	0.0000	0.0030	0.9265	0.0154	0.0237	0.0063	0.0081	0.0024	0.0064	0.0021	0.0021	0.0010	0.0021
100/03-15-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0000	0.0008	0.0629	0.0357	0.1742	0.5829	0.0695	0.0465	0.0060	0.0138	0.0025	0.0027	0.0008	0.0015
100/03-15-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-14	0.0001	0.0011	0.0869	0.0211	0.0901	0.6823	0.0611	0.0344	0.0045	0.0111	0.0022	0.0025	0.0012	0.0014
100/03-15-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	0.0003	0.0011	0.0908	0.0251	0.1010	0.6748	0.0572	0.0315	0.0038	0.0097	0.0018	0.0019	0.0007	0.0003
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-10-22	0.0002	0.0010	0.0866	0.0211	0.0591	0.7379	0.0552	0.0263	0.0029	0.0066	0.0008	0.0011	0.0007	0.0001
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-07-27	0.0003	0.0004	0.0412	0.0347	0.1596	0.6309	0.0761	0.0403	0.0036	0.0083	0.0015	0.0015	0.0009	0.0007
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-08-06	0.0007	0.0012	0.0929	0.0212	0.0762	0.7041	0.0545	0.0298	0.0037	0.0095	0.0020	0.0023	0.0011	0.0008
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-09-01	0.0011	0.0012	0.0898	0.0213	0.0778	0.7009	0.0558	0.0312	0.0038	0.0096	0.0021	0.0025	0.0015	0.0014
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-12-09	0.0003	0.0011	0.0917	0.0236	0.0718	0.7084	0.0556	0.0296	0.0034	0.0075	0.0015	0.0010	0.0009	0.0036
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-12	0.0031	0.0006	0.0545	0.2817	0.0813	0.4854	0.0483	0.0296	0.0035	0.0078	0.0013	0.0014	0.0007	0.0008
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-22	0.0026	0.0007	0.0607	0.2505	0.0838	0.5070	0.0495	0.0280	0.0032	0.0072	0.0013	0.0015	0.0007	0.0032
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0035	0.0006	0.0561	0.3000	0.0744	0.4812	0.0418	0.0250	0.0032	0.0077	0.0017	0.0021	0.0008	0.0019
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT/CALGARY	2021-05-10	0.0037	0.0006	0.0501	0.3228	0.1178	0.4119	0.0437	0.0270	0.0037	0.0092	0.0019	0.0022	0.0013	0.0038
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-13	0.0039	0.0006	0.0524	0.3439	0.0850	0.4200	0.0431	0.0306	0.0040	0.0103	0.0021	0.0023	0.0010	0.0007
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-31	0.0045	0.0005	0.0403	0.4431	0.0711	0.3599	0.0364	0.0244	0.0035	0.0091	0.0020	0.0024	0.0013	0.0015
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-10	0.0043	0.0005	0.0456	0.4306	0.0800	0.3621	0.0363	0.0222	0.0029	0.0079	0.0021	0.0025	0.0015	0.0015
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-04	0.0048	0.0002	0.0212	0.6321	0.0879	0.2018	0.0180	0.0128	0.0020	0.0057	0.0016	0.0020	0.0021	0.0078
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-01	0.0051	0.0002	0.0188	0.6840	0.0738	0.1788	0.0167	0.0112	0.0017	0.0047	0.0012	0.0015	0.0010	0.0013
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-10	0.0053	0.0002	0.0536	0.7012	0.0355	0.1602	0.0153	0.0108	0.0018	0.0052	0.0017	0.0023	0.0020	0.0049
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	0.0054	0.0002	0.0498	0.6995	0.0355	0.1581	0.0156	0.0108	0.0018	0.0053	0.0018	0.0025	0.0037	0.0100
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-07	0.0054	0.0002	0.0210	0.7405	0.0313	0.1550	0.0153	0.0105	0.0017	0.0047	0.0015	0.0021	0.0025	0.0083
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0055	0.0002	0.0183	0.7344	0.0320	0.1638	0.0157	0.0107	0.0017	0.0047	0.0014	0.0019	0.0020	0.0077
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	0.0061	0.0002	0.0189	0.7205	0.0361	0.1713	0.0165	0.0122	0.0021	0.0064	0.0020	0.0026	0.0020	0.0031
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-01	0.0058	0.0002	0.0194	0.7502	0.0325	0.1553	0.0153	0.0105	0.0016	0.0045	0.0012	0.0015	0.0010	0.0012
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-07-04	0.0055	0.0002	0.0179	0.7376	0.0356	0.1519	0.0151	0.0104	0.0018	0.0053	0.0023	0.0037	0.0051	0.0076
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0055	0.0002	0.0164	0.7158	0.0323	0.1720	0.0160	0.0126	0.0023	0.0070	0.0027	0.0038	0.0051	0.0083
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0056	0.0002	0.0159	0.7412	0.0320	0.1678	0.0157	0.0108	0.0017	0.0046	0.0012	0.0015	0.0009	0.0009
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-16	0.0053	0.0003	0.0339	0.6495	0.0538	0.2096	0.0205	0.0142	0.0020	0.0060	0.0015	0.0019	0.0007	0.0008
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	0.0056	0.0002	0.0225	0.7711	0.0324	0.1335	0.0141	0.0101	0.0015	0.0042	0.0011	0.0014	0.0010	0.0013
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-01	0.0062	0.0003	0.0224	0.7220	0.0416	0.1746	0.0161	0.0092	0.0012	0.0031	0.0007	0.0008	0.0004	0.0014
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0056	0.0002	0.0153	0.7526	0.0348	0.1449	0.0149	0.0106	0.0017	0.0048	0.0016	0.0022	0.0031	0.0077
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	0.0058	0.0002	0.0152	0.7678	0.0365	0.1408	0.0145	0.0101	0.0015	0.0041	0.0010	0.0012	0.0006	0.0007
100/16-03-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2023-01-05	0.0057	0.0002	0.0181	0.7832	0.0292	0.1269	0.0138	0.0099	0.0015	0.0043	0.0012	0.0017	0.0013	0.0030

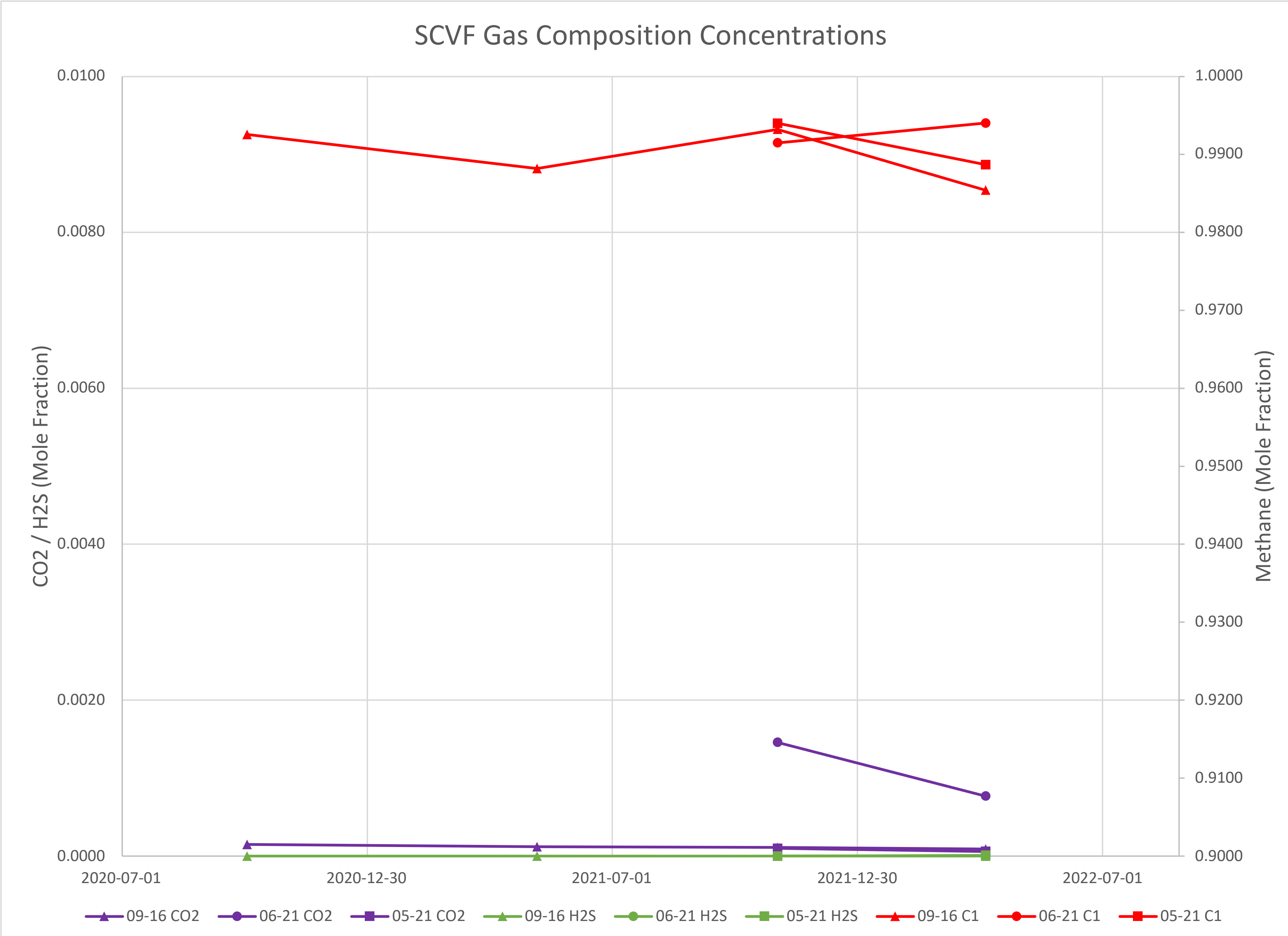
Nisku Gas Analysis

					Gas Analysis (Mole Fraction)													
SOURCE LOCATION	OPERATOR NAME	FIELD	SAMPLER NAME	DATE SAMPLED	H2	He	N2	CO2	H2S	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7+
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-16	0.0001	0.0005	0.0434	0.0375	0.1373	0.6300	0.0803	0.0407	0.0047	0.0114	0.0028	0.0035	0.0030	0.0048
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-16	0.0014	0.0005	0.0491	0.0381	0.1373	0.6273	0.0783	0.0391	0.0041	0.0097	0.0021	0.0026	0.0038	0.0067
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-09-20	0.0005	0.0004	0.0560	0.0301	0.1023	0.6930	0.0714	0.0321	0.0032	0.0071	0.0013	0.0013	0.0007	0.0007
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-03-12	0.0004	0.0000	0.0648	0.0001	0.0000	0.7284	0.1288	0.0603	0.0056	0.0099	0.0004	0.0003	0.0003	0.0007
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-05-12	0.0023	0.0005	0.0761	0.0001	0.0000	0.7677	0.0775	0.0423	0.0053	0.0121	0.0026	0.0029	0.0042	0.0065
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-10-02	0.0331	0.0000	0.0077	0.0609	TRACE	0.3859	0.2104	0.1789	0.0250	0.0592	0.0119	0.0125	0.0064	0.0081
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-11-09	0.0297	0.0000	0.4459	0.0263	0.0004	0.2752	0.1177	0.0721	0.0084	0.0179	0.0027	0.0023	0.0007	0.0008
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-04-12	0.0605	0.0000	0.0072	0.0423	0.0787	0.3153	0.2028	0.1825	0.0255	0.0586	0.0104	0.0100	0.0039	0.0023
100/01-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-18	0.0311	TRACE	0.0123	0.0408	0.1064	0.3829	0.1842	0.1591	0.0207	0.0449	0.0069	0.0068	0.0026	0.0013
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-01-07	0.0007	0.0005	0.0191	0.0017	0.0000	0.9703	0.0058	0.0013	0.0003	0.0002	0.0001	0.0001	0.0001	0.0001
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-05-12	0.0003	0.0000	0.9268	0.0025	0.0000	0.0346	0.0010	0.0039	0.0022	0.0069	0.0032	0.0041	0.0044	0.0102
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT/CALGARY	2021-05-10	0.0020	0.0000	0.9901	0.0010	0.0000	0.0005	0.0002	0.0005	0.0002	0.0008	0.0006	0.0008	0.0010	0.0023
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-01	0.0409	0.0001	0.7202	0.0006	0.0000	0.1753	0.0206	0.0200	0.0035	0.0089	0.0018	0.0020	0.0025	0.0036
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-27	0.0001	0.0000	0.0082	0.0558	0.0001	0.0080	0.0190	0.0334	0.0170	0.0618	0.0436	0.0625	0.0931	0.5975
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-07	0.0025	0.0000	0.0695	0.0140	0.0001	0.1925	0.0264	0.0361	0.0105	0.0363	0.0290	0.0448	0.0769	0.4531
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-19	0.0006	0.0002	0.0471	0.0508	0.3851	0.3642	0.0415	0.0447	0.0098	0.0269	0.0082	0.0088	0.0040	0.0075
100/04-26-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0042	0.0000	0.5327	0.0253	0.0000	0.0885	0.0153	0.0374	0.0129	0.0485	0.0304	0.0421	0.0485	0.1142
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0005	0.0011	0.1113	0.0120	0.0412	0.7068	0.0734	0.0322	0.0036	0.0082	0.0020	0.0026	0.0022	0.0029
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0004	0.0008	0.0691	0.0157	0.0631	0.6685	0.1036	0.0545	0.0056	0.0126	0.0020	0.0021	0.0009	0.0011
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0001	0.0011	0.0986	0.0123	0.0300	0.7192	0.0775	0.0375	0.0045	0.0107	0.0025	0.0029	0.0016	0.0015
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0017	0.0011	0.1002	0.0125	0.0334	0.7167	0.0768	0.0365	0.0042	0.0099	0.0021	0.0024	0.0011	0.0012
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-09	0.0001	0.0007	0.0632	0.0187	0.0820	0.6338	0.1039	0.0625	0.0074	0.0173	0.0033	0.0035	0.0016	0.0017
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0002	0.0008	0.0608	0.0197	0.0836	0.6469	0.0874	0.0621	0.0088	0.0190	0.0034	0.0037	0.0018	0.0018
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	TRACE	0.0007	0.0579	0.0211	0.1042	0.6307	0.0938	0.0552	0.0072	0.0177	0.0037	0.0041	0.0021	0.0016
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0043	0.0007	0.0596	0.0186	0.0843	0.6529	0.0907	0.0536	0.0070	0.0169	0.0034	0.0038	0.0019	0.0023
100/07-15-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2023-01-05	TRACE	0.0006	0.1509	0.0179	0.0820	0.5645	0.0950	0.0577	0.0070	0.0158	0.0028	0.0031	0.0014	0.0013
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-03-16	0.0120	0.0014	0.1085	0.0205	0.0252	0.7651	0.0469	0.0115	0.0012	0.0040	0.0011	0.0013	0.0008	0.0005
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-04	0.0002	0.0012	0.1180	0.0203	0.0651	0.6939	0.0514	0.0276	0.0038	0.0092	0.0024	0.0026	0.0022	0.0021
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-06-01	0.0004	0.0013	0.1005	0.0207	0.0520	0.7445	0.0488	0.0192	0.0019	0.0050	0.0015	0.0018	0.0015	0.0009
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-07-02	0.0008	0.0013	0.1037	0.0208	0.0504	0.7446	0.0492	0.0171	0.0018	0.0051	0.0015	0.0018	0.0012	0.0007
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-04	0.0002	0.0014	0.1092	0.0214	0.0437	0.7413	0.0494	0.0169	0.0017	0.0054	0.0016	0.0022	0.0024	0.0033
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-08-26	0.0008	0.0013	0.1076	0.0226	0.0413	0.7146	0.0525	0.0278	0.0041	0.0104	0.0028	0.0035	0.0035	0.0073
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-10-04	0.0001	0.0012	0.0998	0.0204	0.0586	0.7373	0.0500	0.0199	0.0024	0.0059	0.0012	0.0013	0.0007	0.0012
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-18	0.0002	0.0013	0.1034	0.0205	0.0663	0.7160	0.0524	0.0249	0.0028	0.0068	0.0020	0.0021	0.0008	0.0006
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-12-01	0.0002	0.0011	0.0919	0.0211	0.0734	0.7132	0.0548	0.0281	0.0034	0.0074	0.0018	0.0020	0.0009	0.0007
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-01-10	0.0001	0.0012	0.1070	0.0210	0.0660	0.7193	0.0525	0.0230	0.0023	0.0048	0.0009	0.0010	0.0005	0.0004
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	0.0001	0.0012	0.0968	0.0214	0.0736	0.7172	0.0528	0.0249	0.0026	0.0055	0.0011	0.0013	0.0007	0.0008
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-03-07	0.0006	0.0012	0.0937	0.0230	0.0612	0.7316	0.0524	0.0241	0.0029	0.0060	0.0012	0.0014	0.0005	0.0002
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0001	0.0012	0.0944	0.0209	0.0701	0.7227	0.0518	0.0249	0.0030	0.0064	0.0015	0.0017	0.0007	0.0006
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-05-03	0.0002	0.0012	0.0972	0.0210	0.0693	0.7214	0.0516	0.0239	0.0029	0.0062	0.0016	0.0017	0.0008	0.0010
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-06-01	0.0001	0.0014	0.1071	0.0212	0.0352	0.7418	0.0537	0.0249	0.0029	0.0065	0.0017	0.0020	0.0008	0.0007
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0001	0.0012	0.1081	0.0203	0.0632	0.7185	0.0510	0.0235	0.0027	0.0061	0.0016	0.0020	0.0010	0.0007
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-07	0.0001	0.0013	0.1117	0.0205	0.0679	0.6945	0.0504	0.0256	0.0036	0.0094	0.0030	0.0038	0.0026	0.0053
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0001	0.0012	0.0945	0.0208	0.0655	0.7262	0.0515	0.0243	0.0031	0.0076	0.0016	0.0017	0.0010	0.0009
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-10-03	TRACE	0.0012	0.0981	0.0209	0.0679	0.7163	0.0527	0.0246	0.0032	0.0083	0.0019	0.0021	0.0013	0.0015
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-11-04	0.0001	0.0012	0.0965	0.0212	0.0520	0.7407	0.0513	0.0226	0.0029	0.0074	0.0014	0.0015	0.0006	0.0006
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-01	0.0001	0.0012	0.0991	0.0210	0.0706	0.7277	0.0496	0.0206	0.0021	0.0053	0.0008	0.0008	0.0004	0.0007
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-05	0.0003	0.0013	0.1032	0.0207	0.0619	0.7164	0.0522	0.0256	0.0035	0.0085	0.0021	0.0023	0.0012	0.0008
100/08-02-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2023-01-05	0.0012	0.0012	0.0983	0.0207	0.0519	0.7387	0.0518	0.0221	0.0065	0.0050	0.0009	0.0011	0.0003	0.0003
100/08-35-039-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-13	0.0311	0.0004	0.0363	0.0693	0.2843	0.4069	0.0710	0.0727	0.0073	0.0151	0.0023	0.0021	0.0005	0.0007
100/12-01-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-16	0.0005	0.0004	0.0545	0.0276	0.0858	0.7117	0.0746	0.0272	0.0030	0.0069	0.0018	0.0024	0.0016	0.0021
100/12-01-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-09-20	0.0007	0.0002	0.0485	0.0261	0.0891	0.7165	0.0762	0.0276	0.0031	0.0073	0.0017	0.0018	0.0009	0.0004
100/12-01-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-12	0.0078	0.0003	0.0644	0.0225	0.0032	0.7745	0.0787	0.0334	0.0036	0.0081	0.0014	0.0013	0.0004	0.0004
100/16-02-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2019-07-16	0.0052	0.0002	0.0369	0.0309	0.0462	0.7487	0.0998	0.0046	0.0004	0.0068	0.0059	0.0078	0.0016	0.0050
100/16-02-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-02-09	0.0149	0.0009	0.1314	0.0001	0.0000	0.7240	0.0745	0.0371	0.0046	0.0106	0.0012	0.0006	0.0001	0.0002
100/16-02-040-24W4/00	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-12-05	0.0039	0.0002	0.0189	0.0517	0.0000	0.6090	0.1756	0.0996	0.0098	0.0163	0.0033	0.0042	0.0039	0.0033
102/05-33-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-12	0.0007	0.0003	0.0514	0.0188	0.0405	0.7358	0.0972	0.0415	0.0040	0.0080	0.0011	0.0007	0.0000	0.0001
102/05-33-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-08-03	0.0003	0.0003	0.0351	0.0229	0.0551	0.6521	0.1385	0.0672	0.0064	0.0140	0.0029	0.0033	0.0015	0.0004
102/05-33-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-09-01	0.0006	0.0002	0.0397	0.0206	0.0392	0.7486	0.1050	0.0376	0.0028	0.0048	0.0004	0.0004	0.0001	TRACE

SCVF Gas Analysis

					Gas Analysis (Mole Fraction)													
SOURCE LOCATION	OPERATOR NAME	FIELD	SAMPLER NAME	DATE SAMPLED	H2	He	N2	CO2	H2S	C1	C2	C3	IC4	NC4	IC5	NC5	C6	C7+
102/09-16-040-24W4/03	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2020-10-02	0.0000	0.0003	0.0068	0.0002	0.0000	0.9926	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
102/09-16-040-24W4/03	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-05-06	0.0003	0.0003	0.0104	0.0001	0.0000	0.9882	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001	0.0003
102/09-16-040-24W4/03	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0000	0.0003	0.0061	0.0001	0.0000	0.9932	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
102/09-16-040-24W4/03	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0000	0.0004	0.0138	0.0001	0.0000	0.9854	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
100/06-21-040-24W4/03	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0001	0.0001	0.0046	0.0015	0.0000	0.9915	0.0021	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
100/06-21-040-24W4/03	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0000	0.0001	0.0026	0.0008	0.0000	0.9940	0.0023	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
100/05-21-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2021-11-01	0.0001	0.0002	0.0029	0.0001	0.0000	0.9940	0.0025	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
100/05-21-040-24W4/02	ENHANCE ENERGY INC	CLIVE	AGAT RED DEER	2022-04-05	0.0000	0.0003	0.0082	0.0001	0.0000	0.9887	0.0026	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000


Geosphere CO2 Concentrations
CO2 (Mole Fraction)
1.00
0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00
2019-04-01
2019-10-01
2020-04-01
2020-10-01
2021-04-02
2021-10-02
2022-04-03
2022-10-03
CO2 Injection Start
100/01-02-040-24W4/02
100/16-02-040-24W4/00
100/12-01-040-24W4/02
100/08-35-039-24W4/02
100/08-02-040-24W4/02
100/04-26-039-24W4/02
100/07-15-040-24W4/02
102/05-33-040-24W4/02
100/14-21-040-24W4/02
100/10-35-039-24W4/00
100/16-03-040-24W4/02
100/03-01-040-24W4/00
100/07-34-039-24W4/00
100/10-27-039-24W4/00
100/14-01-040-24W4/00
Nisku Wells
Leduc Wells


SCVF Gas Composition Concentrations
CO2 / H2S (Mole Fraction)
Methane (Mole Fraction)
0.0100
0.0080
0.0060
0.0040
0.0020
0.0000
1.0000
0.9900
0.9800
0.9700
0.9600
0.9500
0.9400
0.9300
0.9200
0.9100
0.9000
2020-07-01
2020-12-30
2021-07-01
2021-12-30
2022-07-01
09-16 CO2
06-21 CO2
05-21 CO2
09-16 H2S
06-21 H2S
05-21 H2S
09-16 C1
06-21 C1
05-21 C1

AGAT® Laboratories

Sulphur Isotope Summary

Operator: Enhance Energy

Analyst: S. Taylor

Work Order	Well Location	Description	Sample Point	Date Sampled	$\delta^{34}S_{H2S}$	wt%S
2022						
22R930109	100/07-15-040-24W4/02	**Nisku Prod Gas**	TEST METER RUN	9-Aug-22	14.6	14.0
22R926845	04-15-040-20W4	**Leduc Prod Gas**	DRY CO2 DEXPRO OUTLET	3-Aug-22	15.6	13.0
22R926854	100/08-02-040-24W4/02	**Nisku Prod Gas**	WELLHEAD	3-Aug-22	16.0	13.0
22R926854	100/16-03-040-24W4/02	**Leduc Prod Gas**	TEST SEP. OIL	3-Aug-22	15.4	14.0
2021						
21R759924	04-15-040-24W4	**Leduc Prod Gas**	DRY CO2 DEXPRO OUTLET	13-Jul-21	17.2	9.4
21R795907	100/07-15-040-24W4/02	**Nisku Prod Gas**	WELLHEAD	2-Sep-21	15.6	13.5
21R795907	100/08-02-040-24W4/02	**Nisku Prod Gas**	WELLHEAD	2-Sep-21	15.5	14.3
21R795907	04-15-040-20W4	**Leduc Prod Gas**	DEXPRO DRY GAS OUTLET	2-Sep-21	15.1	13.3

Appendix 2: Program Methodology & Sampling Schedules

HYDROSPHERE SAMPLING

The following procedures were conducted while sampling the Project monitoring wells:

1) Measurement of water level within each monitoring well
2) Water intake for bladder pump placed at mid-point of well screen and purged at low flow. Water quality parameters and water level readings recorded
3) Upon stabilization of water quality parameters, representative water sample collected using clean sampling methods and field filtration, where necessary
4) Chemical preservatives were added, where necessary, and water samples were placed in ice-filled contained for transport to laboratory

The following procedures were conducted while sampling landowner water wells. Further details are provided in Appendix 1.

1) Suitable connection point, upstream of any water treatment systems, was located and used for sample collection.
2) Water was purged through a FT gas separator unit for approximately 20 minutes and discharged to the ground, or as directed by landowners. Water quality parameters were monitored and recorded during purging.
3) Upon stabilization of water quality parameters, a representative water sample was collected using clean sampling methods and field filtration, where necessary.
4) Using the FT unit, any observed gas released from solution was collected with a Tedlar® sampling bag and sent for analysis following the Alberta Research Council guideline (Jones et. al. 2009).
5) Chemical preservatives were added, where necessary, and water samples placed in ice-filled contained for transport to laboratory.

Groundwater samples from Enhance's three Project monitoring wells were collected using a low flow sampling method, reducing the need for large purge volumes.

Sample Processing & Laboratory Analysis

Once collected, groundwater samples were placed in coolers with ice and shipped to AGAT Laboratories in Red Deer, Alberta on the same day they were sampled. Where necessary, AGAT distributed samples to additional third-party laboratories following similar Chain of Custody procedures.

Tables A and B summarizes where various samples were shipped. Where gas was observed in sufficient volumes in the FT gas separator, free gas samples collected in Tedlar® sampling bags were submitted for analysis of gas composition from AGAT, and dissolved gas samples collected in septum vials were submitted for analysis of gas composition from the University of Calgary.

Table A Groundwater Sample Laboratory Analysis

Laboratory	Laboratory Analysis					
	Routine	Dissolved Metals	Total Iron, Sulphur, Bromide	Biological	$\delta^{13}C_{DIC}$	$\delta^{34}S_{SO4}$
Groundwater						
AGAT Laboratories	X	X	X			
AGAT Laboratories (Nautilus Environmental Company Inc.)				X		
AGAT Laboratories (University of Alberta)					X	
AGAT Laboratories (University of Calgary)						X

Table B Gas in Groundwater Sample Laboratory Analysis

Laboratory Location	Gas Composition	C_1 to C_6 Hydrocarbons	$\delta^{13}C_{CO2}$	$\delta^{13}C_{CH4}$ (incl. C_2 to C_4)	Dissolved $\delta^{13}C_{CO2}$	Dissolved $\delta^{13}C_{CH4}$
Gas in Groundwater						
AGAT Laboratories	X	X				
AGAT Laboratories (University of Alberta)			X	X		
AGAT Laboratories (University of Calgary)					X	X

Quality Assurance/Quality Control (QA/QC)

Following sample collection, standard Chain of Custody procedures were followed for sample preservation and transportation to an accredited third-party laboratory.

To verify the integrity of results, QA/QC measures taken include:

- Collection of blind-duplicate samples, representing 10% of overall samples
- Analysis of laboratory ion balance, with a general acceptable limit of ±10%
- Calculation of the Relative Percent Difference (RPD) between sample and blind-duplicate results, with an acceptable limit of ±20%

BIOSPHERE SAMPLING

Soil Gas Probe Installation and Sampling

Prior to installation of the temporary soil gas probe, a ground disturbance sweep was conducted through Alberta One-Call to identify and avoid underground facilities or infrastructure.

The temporary soil gas probe was installed using a drive point piezometer, fitted with a screen. The piezometers were installed at a depth of approximately 1.5 mbgs. Using Integrated Sustainability's SOP for Soil Gas Probe Installation, the following procedure was conducted.

1) Dutch auger used to excavate soil to intended depth
2) Probe with suitable sample tubing was placed at depth
3) Probe tip and screen were backfilled using filter sand
4) Alternating layers of bentonite chips and filter sand used for remaining backfill

Following installation of the piezometer and screen:

1) Installation of a compression fitting and ball valve onto sample tubing
2) Leak check of soil gas probe using helium to verify subsurface installation and surface connections are sealed

In the summer and fall sample programs, methane (CH_4) and carbon dioxide (CO_2) in soil gases were monitored in-situ pre- and post-sample using a Los Gatos Ultraportable Greenhouse Gas Analyzer (UGGA).

During the summer and fall sampling program, the UGGA experienced a major failure, necessitating the use of a Landtec GEM5000 gas analyzer as backup and in conjunction with the UGGA for the remainder of the program. The GEM5000 range for methane is 0% to 100% by volume and measures methane concentrations as low as 0.1%. Accuracy is +/-0.3% within the 0%-5% range. That means it can measure from approximately 1000 ppm to 1,000,000 ppm and the accuracy is +/- 3000 ppm below 50,000 ppm.

Using Integrated Sustainability's SOP for Soil Gas Sampling, the following procedure was conducted.

1) Well purged using gas analyzer. Continuous in-situ gas readings observed and recorded
2) Upon stable readings, gas sample was collected using pre-evacuated SUMMA cannisters, pre-evacuated Bottle-Vac® amber glass bottles, or Tedlar® sampling bag
3) Post-sample in-situ gas reading recorded

The temporary soil gas probe installed at 08-09-040-24 W4M was removed after sampling.

Table C summarizes the laboratories that completed soil gas analysis collected for the Project.

Table C Soil Gas Laboratory Analysis

	Laboratory Analysis					
Laboratory Location	Trace Gas Composition	C_1 to C_6 Hydrocarbons	$\delta^{13}C_{CO2}$	$\delta^{13}C_{CH4}$ (incl. C_2 to C_4)	$^{14}C_{CO2}$	$^{14}C_{CH4}$
AGAT Laboratories	X	X				
University of Alberta			X	X		
University of Ottawa					X	X

Sample Analysis

Soil gases were sampled and analyzed for trace gas composition, hydrocarbon content, stable isotope composition, and radioactive isotope composition. Samples for trace gas composition and hydrocarbon content analysis were conducted by AGAT Laboratories, where the following parameters were included:

- Oxygen
- Nitrogen
- Methane
- Carbon Monoxide
- Carbon Dioxide
- Volatile Non-Methane Hydrocarbons
- Volatile Halogenated Hydrocarbons
- C_1 to C_6 Hydrocarbons

Samples for stable carbon isotope analysis were conducted by Dr. Karlis Muehlenbachs (1999) at the University of Alberta, where analysis included the carbon-13 content of CO_2 ($\delta^{13}C_{CO2}$) and CH_4 ($\delta^{13}C_{CH4}$).

Samples for radioactive carbon isotope analysis were conducted by the Andre E. Lalonde AMS Laboratory at the University of Ottawa, where analysis included the carbon-14 content of CO_2 (and where possible CH_4) through a fraction of modern radiocarbon.

Quality Assurance/Quality Control (QA/QC)

Following sample collection, standard Chain of Custody procedures were followed for sample preservation and transportation to AGAT Laboratories in Red Deer, Alberta. Where necessary, AGAT distributed soil gas samples to additional third-party laboratories following similar Chain of Custody procedures. Samples collected in the fall or radiocarbon analysis were transported directly to the third-party lab.

To verify the integrity of results, the following QA/QC measures taken include:

- Collection of five blind-duplicate samples, representing 8% to 9% of overall samples.
- Comparing in-situ soil gas concentrations to laboratory results to confirm accuracy and precision of field measurements and laboratory results.
- Conducting helium leak checks to verify well integrity prior to collection of soil gas.
- Collection of atmospheric gas samples to verify ambient gas concentrations and compare to soil gas results.

SOIL AND GROUNDWATER ANALYTICAL SCHEDULES

The following tables provide a listing of groundwater and soil gas probe locations investigated during the spring/summer and fall 2022 sampling campaigns, including the types of analysis to be performed.

2022 Summer Groundwater Sampling Analytical Schedule

Client Name: Enhance Energy Ltd. **Project Number:** CP22-EI-01-00 **Date:** March 21, 2023 **Rev:** 1

Type	Summer 2022 Routine	Summer 2022 Dissolved Metals	Summer 2022 Total Iron, Sulphur, Bromide	Summer 2022 Microbiology (IRB, SRB, SFB)	Summer 2022 13C in DIC	Summer 2022 Dissolved Gas	Summer 2022 d34S	Summer 2022 QA/QC (Dup)
Land Owner 2	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 1	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 25	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 33	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 4	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Land Owner 31	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Land Owner 24	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 6	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Land Owner 9	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 19	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Land Owner 29	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Facility Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Land Owner 17	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 18	Yes	Yes	Yes	Yes	Yes	No	No	Yes
Land Owner 13	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 21	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 11	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 26	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 3	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 20	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 15	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 23	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 10	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Land Owner 22	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 14	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Land Owner 16	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 30	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 5	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Land Owner 32	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 8	Yes	Yes	Yes	Yes	Yes	Yes	No	Yes
Land Owner 7	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 28	Yes	Yes	Yes	Yes	Yes	Yes	No	No
	36	**36**	**36**	**36**	**36**	**11**	**5**	**4**

INTEGRATED SUSTAINABILITY

2022 Fall Groundwater Sampling Analytical Schedule

Client Name: Enhance Energy Ltd. **Project Number:** CP22-EI-01-00 **Date:** March 21, 2023 **Rev:** 1

Type	Fall 2022 Routine	Fall 2022 Dissolved Metals	Fall 2022 Total Iron, Sulphur, Bromide	Fall 2022 Microbiology (IRB, SRB, SFB)	Fall 2022 13C in DIC	Fall 2022 Dissolved Gas	Fall 2022 d34S	Fall 2022 QA/QC (Dup)
Land Owner 2	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 1	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 25	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 33	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 4	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Land Owner 31	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Land Owner 24	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 6	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Land Owner 9	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 19	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Land Owner 29	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Facility Well	Yes	Yes	Yes	Yes	Yes	No	No	No
Enhance Monitoring Well	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Land Owner 17	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 18	Yes	Yes	Yes	Yes	Yes	Yes	No	No
Land Owner 13	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 21	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 11	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 26	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 3	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 20	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 15	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 23	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 10	Yes	Yes	Yes	Yes	Yes	No	Yes	Yes
Land Owner 22	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 14	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Land Owner 16	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 30	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 5	Yes	Yes	Yes	Yes	Yes	No	Yes	No
Land Owner 32	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 8	Yes	Yes	Yes	Yes	Yes	Yes	Yes	No
Land Owner 7	Yes	Yes	Yes	Yes	Yes	No	No	No
Land Owner 28	Yes	Yes	Yes	Yes	Yes	No	Yes	No
	34	**34**	**34**	**34**	**34**	**4**	**11**	**5**

2022 Soil Gas Sampling Analytical Schedule

Date: March 21, 2023

Client Name: Enhance Energy Ltd. **Project Number:** CP22-EI-01-00 **Rev:** 1

Soil Probe Surface Location	Sample ID	2022 Summer Breathing Air and Composition	2022 Summer d13C (UofA)	2022 Summer d14C (UofO)	2022 Summer Duplicate	2022 Summer Atmosphere
11-26-039-24W4	11-26-PP-SU-22	No	No	No	No	No
12-25-039-24W4	12-25-PP-SU-22	Yes	Yes	Yes	No	Yes
01-35-039-24W4	01-35-PP-SU-22	Yes	Yes	No	No	No
04-01-040-24W4	04-01-PP-SU-22	No	No	No	No	No
05-36-039-24W4	05-36-PP-SU-22	No	No	No	No	No
14-26-039-24W4	14-26-PP-SU-22	No	No	No	No	No
01-02-040-24W4	01-02-PP-SU-22	Yes	Yes	No	No	No
04-01-040-24W4 (05-01)	05-01-PP-SU-22	Yes	Yes	Yes	No	No
04-02-040-24W4	04-02-PP-SU-22	Yes	Yes	No	No	No
04-12-040-24W4	04-12-PP-SU-22	Yes	Yes	No	No	No
04-26-039-24W4	04-26-PP-SU-22	Yes	Yes	No	No	No
04-35-039-24W4	04-35-PP-SU-22	Yes	Yes	Yes	No	No
07-02-040-24W4	07-02-PP-SU-22	No	No	No	No	No
08-26-039-24W4	08-26-PP-SU-22	No	No	No	No	No
08-34-039-24W4 (08-24)	08-24-PP-SU-22	No	No	No	No	No
08-35-039-24W4	08-35-PP-SU-22	No	No	No	No	No
10-02-040-24W4	10-02-PP-SU-22	No	No	No	No	No
11-35-039-24W4	11-35-PP-SU-22	Yes	Yes	Yes	No	Yes
12-01-040-24W4	12-01-PP-SU-22	Yes	Yes	Yes	No	No
12-02-040-24W4	12-02-PP-SU-22	Yes	Yes	Yes	No	No
12-36-039-24W4	12-36-PP-SU-22	Yes	Yes	Yes	No	No
16-03-040-24W4	16-03-PP-SU-22	No	No	No	No	No
07-10-040-24W4	07-10-PP-SU-22	No	No	No	No	No
09-10-040-24W4	09-10-PP-SU-22	No	No	No	No	No
03-15-040-24W4	03-15-PP-SU-22	Yes	Yes	Yes	No	No
02-10-040-24W4	02-10-PP-SU-22	Yes	Yes	Yes	No	No
16-09-040-24W4	16-09-PP-SU-22	Yes	Yes	Yes	No	No
02-23-039-24W4	02-23-PP-SU-22	Yes	Yes	Yes	No	No
12-23-039-24W4	12-23-PP-SU-22	Yes	Yes	Yes	No	No
14-23-039-24W4	14-23-PP-SU-22	Yes	Yes	Yes	No	No
10-22-039-24W4	10-22-PP-SU-22	Yes	Yes	Yes	No	No
12-15-040-24W4	12-15-PP-SU-22	Yes	Yes	No	No	No
09-16-040-24W4 (01-16)	09-16-PP-SU-22	Yes	Yes	No	Yes	No
13-16-040-24W4	13-16-PP-SU-22	Yes	Yes	No	No	No
16-16-040-24W4	16-16-PP-SU-22	Yes	Yes	No	Yes	No
16-20-040-24W4	16-20-PP-SU-22	Yes	Yes	No	No	No
07-21-040-24W4	07-21-PP-SU-22	Yes	Yes	No	No	No
12-21-040-24W4	12-21-PP-SU-22	Yes	Yes	No	No	No
14-21-040-24W4	14-21-PP-SU-22	Yes	Yes	No	No	No
06-28-040-24W4	06-28-PP-SU-22	Yes	Yes	No	No	Yes
12-28-040-24W4	12-28-PP-SU-22	Yes	Yes	Yes	Yes	No
14-28-040-24W4	14-28-PP-SU-22	Yes	Yes	Yes	No	No
01-32-040-24W4	01-32-PP-SU-22	Yes	Yes	Yes	No	No
10-32-040-24W4	10-32-PP-SU-22	Yes	Yes	No	No	No
05-33-040-24W4	05-33-PP-SU-22	Yes	Yes	No	Yes	No
02-05-041-24W4	02-05-PP-SU-22	Yes	Yes	No	No	No
06-05-041-24W4	06-05-PP-SU-22	Yes	Yes	No	No	No
06-08-041-24W4	06-08-PP-SU-22	Yes	Yes	No	No	Yes
13-05-041-24W4	13-05-PP-SU-22	Yes	Yes	Yes	No	No
Total		38	38	18	4	4

GE-SOP-0018: SOIL GAS PROBE INSTALLATION

Department/Area:	Geosciences		
Prepared By:	Joseph Cruz	**Date:**	08 June 2021
Approved By:	Ian Grant	**Date:**	16 June 2021
Date Created:	October 18, 2021	**Revision:**	B

PURPOSE OF TASK

This Standard Operating Procedure (SOP) provides guidelines for the manual installation of a soil gas probe with two methods:

- Method A - installation with an auger
- Method B - installation with a drive point hammer

Employers must ensure that workers are trained and experienced in completing this task. Soil gas probes may be installed in unconsolidated or consolidated material if the well annuls can be sealed.

Soil gas samples should not be collected if groundwater has entered the sampling equipment, as this may damage the analysis equipment and invalidate the soil gas sample collected. Therefor soil gas probes should be installed above the observed or expected static groundwater elevation. If groundwater is encountered while drilling, the probe location should be properly abandoned and an alternate location should be selected.

REQUIRED MATERIALS AND EQUIPMENT

1) Manual slide hammer for drive point piezometer
2) Drive point piezometer tip and screen
3) Riser extensions and couplings to reach the required depth of the piezometer.
    - Piezometer screens and extensions referred to as “casing”
4) ¼” Piezometer tubing (length suitable to reach the required depth and extend above ground surface). Teflon tubing suitable for soil sampling should be used. Silicon tubing should be avoided where possible.
    - Referred to as “tubing”
5) Wrench to tighten drive point piezometer, swage lock nut and bolts
6) Drive head by-pass assembly for drive point piezometer
    – Includes: drive head, drive extension and tubing by-pass
7) Piezometer drive hammer
8) ¼” Ball valve (Brass or stainless steel are suitable)
9) ¼” Swage locks (Brass or stainless steel are suitable)

10) 10-20 filter sand
11) Bentonite chips or pellets
12) Large water container (to hydrate bentonite)
13) Helium gas with discharge fitting
14) Helium detector
15) Helium shroud
16) Dutch auger, handle, and extension
17) Shovel
18) Well Casing (Road Box)

OPTION A STANDARD WORK PROCEDURE: DUTCH AUGER

Steps to complete this task are as follows:

1) Verify all ground disturbance sweeps have been completed and verify that the ground disturbance permitting is valid for the selected drilling location. Drill only in the location identified within the ground disturbance permit.
2) The location of the soil probe will be installed where all ground disturbance specifications are met and meet all requirements (e.g. minimum distance from any pipelines in the area)
3) Place the corkscrew tip of the auger on the ground surface and press firmly on the handles.
4) While pressing down, rotate the handles in a clockwise motion.
5) Continue this until the top of the auger head is at ground surface (should have descended approximately 6")
6) Pull the auger straight up to remove soil. Replace in the borehole and continue to auger to the proposed installation depth.
7) Record the depth range and describe the soil sample as completely as possible (grain size distribution, colour, odour, oxidation/mineralization, plasticity, stiffness, etc.)
8) Drop the tape measure into the hole to verify the true depth of the hole and evaluate for sloughed material.
9) If auger refusal is reached, move over approximately 50 cm and reattempt the hole. Do not log the soil until the original depth of refusal is reached. If refusal occurs again, make a note in the field notebook (refusal may be the result of bedrock). If not, continue logging the hole (as refusal was likely the result of a large piece of gravel). At least 3 attempts should be made at each location. Confirm with project requirements if a shallower borehole is acceptable. If possible, install using the drive point hammer at the point of refusal (Option B).

10) Measure and cut the piezometer tubing to the proposed installation depth, plus an additional 0.5 m (2 ft)
11) Loosen the compression fitting, insert the piezometer tubing with the ferrules into the drive point screen, and tighten 1/4 turn past finger tight to properly secure the tubing in the fitting.
12) Hold the tubing to prevent it from turning, slide the extensions over the tubing and tighten it firmly onto the piezometer drive point screen.
13) Slide a coupling over the tubing and tighten firmly onto the previous extension pipe and tighten, slide the next extension pipe over the tubing and tighten securely to the other end of the coupling and tighten. Repeat until the desired length has been achieved. The piezometer extension should end below ground surface so the road box may be placed over the well.
14) Place piezometer set up in the hole and hold straight, the top of the extension pipe shall be flush with the ground surface.
15) Backfill the screened portion of the drive point piezometer tip with the 10-20 filter sand at least 10 cm above the screened portion of the piezometer to facilitate unimpeded flow of soil gasses into the piezometer. The remainder of the pilot hole is to be backfilled with alternating layers of bentonite chips and 10-20 filter sand. This is to prevent short-circuiting of atmospheric air to the piezometer.
16) Continue to installation of ball valve and fittings section.

OPTION B STANDARD WORK PROCEDURE: DRIVE POINT PIEZOMETER

Steps to complete this task are as follows:

1) Verify all ground disturbance sweeps have been completed and verify that the ground disturbance permitting is valid for the selected drilling location. Drill only in the location identified within the ground disturbance permit.
2) The location of the soil probe will be installed where all ground disturbance specifications are met and meet all requirements (e.g. minimum distance from any pipelines in the area)
3) Measure and cut the piezometer tubing to the proposed installation depth, plus an additional 0.5 m (2 ft)
4) Loosen the compression fitting, insert the piezometer tubing with the ferrules into the drive point screen, and tighten 1/4 turn past finger tight to properly secure the tubing in the fitting.
5) Hold the tubing to prevent it from turning, slide the extensions over the tubing and tighten it firmly onto the piezometer drive point screen.
6) Thread the tubing through the drive head by-pass assembly and place on top screw on to the piezometer casing and tighten to finger tight.

7) Slide the manual slide hammer over the drive head and hammer the device until approximately 15 cm (6") of the extension pipe below the tubing bypass remains above the ground.
8) Remove the hammer and remove the drive head assembly, hold the tubing to prevent it from turning.
9) Slide a coupling over the tubing and tighten firmly onto the previous extension pipe, slide the next extension pipe over the tubing and tighten securely.
10) Repeat steps 5 to 8 till the sampling depth has been reached.
11) Continue to installation of ball valve and fittings section.

INSTALLATION OF BALL VALVE AND FITTINGS

1) Wrap all threads of the fittings with Teflon tape and connect and tighten all parts of the fitting assembly, swage lock-ball valve-swage lock.
2) Loosen and remove the nut and ferrule of one end of the fitting, and slide the nut and ferrule assembly on to the sampling tube.
3) Place the sampling tube to connect to the ball valve fitting, and tighten the nut and ferrule to the fitting assembly, tighten 1-1/4 turn past finger tight.
4) The setup will be leak checked with helium gas to verify there is no short-circuiting of atmospheric air into the gas line through the fittings at surface or through the well annulus.
5) Install the service box (flush mount) over the casing and fill void spaces with native material or bentonite.
6) The brass valve assembly will remain in the well casing for protection, when placing the fitting and sampling tube within the casing, make sure the sampling tube does not get bent or kinked.
7) The casing will be labeled with the location ID and GPS coordinates recorded for future sampling.

LEAK CHECK WITH HELIUM GAS

1) The helium shroud should have at least 3 valve connections:
2) 1 connection with ¼" tubing to connect to the fitting assembly of the soil gas well
3) 1 connection open to the bucket
4) 1 connection to inject helium gas
5) All fittings should be equipped with masterflex tubing to use with the helium detector wand.
6) Loosen the nut and ferrule assembly from the fitting assembly on the outflow end of the ball valve.
7) Slide the nut and ferrule assembly to the ¼" tubing of the helium shroud, and connect to the fitting assembly, tighten 1-1/4 turn past finger tight.

8) Open the valve and place the helium shroud over the sampling port, all fittings should be within the helium shroud. Verify all valves on the helium shroud are closed.
9) Using the helium detector measure the following parameters:
10) Measure and record the atmospheric helium values
11) Place the helium detector wand into the masterflex tubing for the connection to the soil gas well, open the valve measure and record the helium values, and close the valve.
12) Place the helium detector wand into the masterflex tubing for the connection to the bucket, open the valve measure and record the helium values, and close the valve.
13) Place the helium gas cannister discharge to the helium gas injection fitting of the helium shroud. Verify the sampling port and bucket fittings are closed, open the helium injection fitting valve and discharge helium into the fitting. A 1-2 second burst of helium is sufficient to detect a leak in the fitting. Close the valve.
14) Using the helium detector measure the following parameters:
15) Measure and record the atmospheric helium values
16) Place the helium detector wand into the masterflex tubing for the connection to the soil gas well, open the valve measure and record the helium values, and close the valve.
17) Place the helium detector wand into the masterflex tubing for the connection to the bucket, open the valve measure and record the helium values, and close the valve.
18) The helium detector should pick up values of helium in the bucket, and the readings to the soil gas well should not detect any helium.
19) If helium is detected in the soil gas well, check and re-tighten all fittings and repeat steps 1 through 7
20) If helium is detected in the soil gas well, after checking and re-tightening all fittings, the fitting assembly may be compromised, and a new fitting assembly may be required to be installed. Assemble a new fitting and re-test
21) If the helium detector does not pick up helium values from the soil gas well, but helium is detected in the bucket, the fitting assembly is deemed leak proof.
22) Remove the ¼" tubing from the fitting assembly, re-connect the nut and install a new ferrule for future sampling, and place the assembly in the well casing.
23) Place the cover on the well casing, and tighten bolts to verify the casing is sealed.

INTEGRATED SUSTAINABILITY

Standard Operating Procedure

Purpose: To provide information on standard work practices.

GE-SOP-0006: MONITORING WELL INSTALLATION

Department/Area:	Geosciences		
Prepared By:	M. Myden	**Date:**	01 Sept 2016
Approved By:	M. Myden	**Date:**	01 Sept 2016
Date Created:	01 Sept 2016	**Revision:**	0

PURPOSE OF TASK

The purpose of this procedure is to describe the methods for a groundwater monitoring well installation. It describes designs, procedures, and materials that are used to construct a monitoring well that will produce accurate groundwater level measurements and representative groundwater samples.

REQUIRED MATERIALS AND EQUIPMENT

- Monitoring well construction materials: casing, screen, sand (filter) pack and seal materials
- Measuring tape
- Water level tape
- Soil sampling equipment (see GE-SOP-0004 for further requirements)
- Sample trays or vials
- Field log book (including borehole logging forms)

STANDARD WORK PROCEDURE

Requirements for monitoring well installations are site-specific, and will depend on the soil, bedrock and groundwater conditions encountered in the field, the goals of the investigation program, and the availability and limitations of drilling equipment and installation materials.

Clients may also have monitoring well specifications that differ from the design specifications presented in this procedure. It is up to the field hydrogeologist to ensure design specifications meet both client and regulatory requirements.

Monitoring Well Design

The following are general guidelines for installation of monitoring wells that have been drilled in overburden (soils) or shallow bedrock. Before drilling begins, the conceptual well design and drilling method should be identified and reviewed by a qualified hydrogeologist to determine whether deviations from these general guidelines are appropriate.

Monitoring well design (including well depth and screen length) should be determined based on geological and hydrogeological site observation, objectives of the groundwater sampling program and presence of DNAPL/LNAPL. Nested monitoring wells may be installed to monitor several depth intervals within an aquifer.

Typical monitoring well designs include (but are not limited to):

- Water table wells (screened across the water table) including anticipated seasonal fluctuations.
- Well screens (up to 1.5 m in length) installed below the water table, but across, within or at the base of a water-bearing zone.

The steps involved in a monitoring well installation include:

Plan and prepare for drilling and monitoring well installation (see also GE-SOP-0006)

- Review the drilling and sampling plan, as well as any relevant information pertaining to subsurface conditions at the planned drilling locations, such as soil and groundwater conditions, type, degree and extent of contamination.
- Determine the appropriate type of drilling rig, soil sample collection and well installations.
- Plan the design of each monitoring well installation, based on the conceptual site model and objectives of the sampling/monitoring program.
- Perform ground disturbance procedures (i.e. utility locates).
- Prepare HSE Management Plan (as required) and Waste Management Plan (as required).
- Schedule and book drilling contractor. Confirm expected subsurface conditions, depths of monitoring well installations and estimated quantities/types of materials that should be brought to site, including:
  - Type and length of casing & type and length of screen
  - End-caps or j-plugs
  - Sand and sealing material
  - Cement (if required)
  - Flush-mount or stick-up protective surface completions
  - Supply of potable water (whether provided by client or by drilling contractor)

Perform ground disturbance (utility locates)

- Mark all borehole locations so that ground disturbance can be undertaken.
- Clear sub-surface and above-ground utilities (e.g. power lines) prior to starting drilling program.
- Ensure sufficient clearance between drilling mast and overhead power lines. Minimum safe work distances for each province shall be used.
- Manual (hand) or vac truck excavation may be required prior to commencing drilling.

- If the planned borehole location(s) interferes with utilities, an alternative location should be selected and cleared.

Drill the borehole and collect/log the soil samples

- Commence drilling of the borehole. As drilling advances, samples brought to the surface should be examined, logged and representative samples collected for screening and/or laboratory analysis (as required).
- A borehole log should be filled in as completely as possible. All depths should be measured to metres below ground surface (mbgs). Information should include, but not be limited to:
  - Site identification and borehole numbers
  - Type of rig used, casing or auger diameter, bit type (if applicable) and rate of advance
  - Depth (intervals) from which samples were collected and a description of each sample (see borehole log form)
  - Moisture content of the sample immediately upon recovery
  - Any significant groundwater observation
- See also GE-SOP-0017 for additional work procedures with respect to soil drilling and sample collection.

Design the monitoring well

- Consult with a qualified hydrogeologist to determine the final design for the monitoring well, including:
  - Length of the screen interval
  - Interval of the screened section (based on borehole lithology)
  - Sand pack interval (minimum depth of sand pack)

Install the monitoring well (screen and unscreened intervals)

- The monitoring well (casing, screen and bottom cap) should be lowered into the borehole until it reaches the bottom of the borehole (at its design depth).
- Measure the height of the well casing above the ground to the nearest cm and record it in the field log book.

Note: Determine the zone with the most moisture for screen placement. Rule of thumb is to place the middle of the screen within the wettest zone. Never have a screen or sand pack cross multiple lithology units.

Note: If the borehole has sloughed in substantially, have the drill operator go back into the borehole and attempt a clean-out. If the borehole is open to the bottom, determine if the borehole needs to be backfilled to capture the screened interval. If backfilling is required, backfill with bentonite or sand. Backfill with sand if the bottom of the borehole is in the same unit as the screened interval. If the borehole needs to be backfilled through multiple lithologies, use bentonite. When backfilling with bentonite, stop about 0.3 m from the bottom of the desired screen depth. Use sand to backfill the final 0.3m to the bottom of the screen. This prevents damage to the screen.

Install the sand (filter) pack and annular seal materials

- Calculate the volume of sand material needed to fill the annulus to the required height.
- Ensure the monitoring well is centered in the borehole.
- Measure the depth to the bottom of the hole and record the measurement. Keep the measuring tape in the hole while adding the filter sand.
- Pour filter sand in slowly to avoid bridging the annulus until the required amount of sand has been added (approximately 0.3 to 0.5 m above the top of the screen).
- Measure and record final depth to the top of the sand pack when finished.
- The seal material should be placed in the same manner as the filter sand.
- Calculate the volume of seal material required to provide a seal length of approximately 0.6 to 1 m above the sand pack.
- Measure and record final depth to the top of the seal material when finished.

Place fill above seal (if appropriate)

- If the top of the seal does not correspond to the ground surface, the remainder of the annular space should be sealed to within 0.5 m of ground surface using either cement, a bentonite grout slurry or uncontaminated material from the site (as appropriate).

Install the surface seal and protective casing

- The upper 0.5 m of the borehole should be sealed to prevent surface water from entering the borehole.
- An appropriate surface casing (e.g. a lockable stick-up completion or flush mounted surface casing) should be installed based on site conditions.

Survey the monitoring well location.

- All monitoring wells at the site should be surveyed in to measure elevation of the ground surface and top of well casing at each well location. Well surveys should be accurate to within 0.1 cm (i.e. GPS coordinates are not accurate enough).

Troubleshooting

- Contact project manager or senior hydrogeologist if there are issues with the borehole sloughing in or the annulus bridges during well construction.

REFERENCES

USEPA, 1996. Standard Operating Procedures 2048 – Monitor Well Installation.

Purpose: To provide information on standard operating procedure.

GE-SOP-000X: SOIL GAS SAMPLING

Department/Area:	Geosciences		
Prepared By:	Joseph Cruz	**Date:**	June 08, 2021
Approved By:	Ian Grant	**Date:**	
Date Created:	October 01, 2021	**Revision:**	B

PURPOSE OF TASK

This Standard Operating Procedure (SOP) provides guidelines for the sampling of soil gas (methane, and carbon dioxide) in-situ using a Los Gatos Ultraportable Greenhouse Gas Analyzer (GGA) and collecting samples with pre-evacuated (SUMMA) cannisters and/or Wheaton bottle samples.

REQUIRED MATERIALS AND EQUIPMENT

1) Tedlar Bags
2) Summa Cannister and/or Glass bottle samples
3) Vacuum Gauge
4) Flow Regulator
5) Los Gatos Ultraportable Greenhouse Gas Analyzer (GGA)
   - VNC application on phone or tablet to view readings
   - Connect wifi signal to GGA on tablet or phone
   - VNC application configure to connect to the GGA
6) ¼" diameter Teflon tubing
7) 9/16" and ½" wrenches
8) Chameleon fitting for Glass sample bottles
9) Chain of Custody paper work (COC)
10) Field notebook

STANDARD WORK PROCEDURE FOR SOIL GAS SAMPLING

Employers must ensure that workers are trained and experienced in completing this task. Steps to complete this task are as follows:

Soil Gas Sample Collection with Summa Cannister

1) Inspect Summa Cannister to check for mechanical integrity. Verify the vacuum in the cannister is greater than 25 in Hg with the vacuum gauges, if the cannister vacuum is less than 25 in Hg, ambient air may have leaked into the cannister, and the sample may be compromised.

2) Confirm the Summa cannister valve is closed
3) Remove the brass cap and attach the gauge
4) Attach brass cap to the side of gauge tee fitting to ensure a closed train.
5) Open and close valve quickly (seconds) and read vacuum on the gauge. Record the initial vacuum reading and Summa cannister serial number in field notebook/notes
6) Verify the cannister valve is closed
7) Attach the ¼" Teflon tubing to the existing soil gas sampling fitting on the outlet side of the valve, the Teflon tubing should be attached to the fitting with a compression fitting and nut. The compression fitting should be tightened to the manufacturers specification (ex. 1-1/4 turn for Swagelock branded compression fittings)
8) The Teflon tubing will be connected to the GGA, and open the valve of the soil sampling fitting
9) Purge the sampler of stagnant air through the GGA. The methane and carbon dioxide concentrations will be monitored till the stable concentrations are read, typically within 1 to 3 minutes
10) Record all concentrations in the field notebook and/or field sheets
11) Once stable concentrations have been read and recorded, close the valve of the soil sampling fitting and disconnect the ¼" Teflon tubing from the GGA, and connect the tubing to the flow regulator and vacuum gauge of the Summa cannister with a compression fitting and nut. The compression fitting should be tightened to the manufacturers specification (ex. 1-1/4 turn for Swagelock branded compression fittings) The SUMMA Cannister shall remain closed.
12) If using a flow controller, set the flow controller to the specifications of the Summa cannister.
13) Open the valve from the soil gas sampling fitting
14) Open the valve to the Summa cannister to begin collecting the soil gas sample
15) Monitor the vacuum gauge on the Summa cannister, and close the valve when the gauge is reading between -5 in Hg and -3 in Hg (unless otherwise instructed by the laboratory)
16) Close the valve from the soil gas sampling fitting
17) Disconnect the ¼" tubing from the Summa cannister, and record all readings
18) Record the final vacuum of the cannister in the field notebook/notes
19) Fill out cannister sample tag and verify the sample tag matches what is recorded on the COC.
20) Return the cannister to the box and fill out the COC.
21) Repeat steps 1 through 21 if collecting additional Summa cannister samples

22) If collecting additional samples using the glass sample bottles, continue to step 23

Soil Gas Sample Collection with Glass Sample Bottle

23) Inspect glass sample bottle and microvalve fitting to check for mechanical integrity. Verify the vacuum in the cannister is greater than 25 in Hg with the microvalve vacuum gauge, if the cannister vacuum is less than 25 in Hg, ambient air may have leaked into the cannister, and the sample may be compromised
24) Connect the female end of the microvalve vacuum gauge to the microvalve fitting on the glass sample bottle and record the initial vacuum reading and glass sample bottle serial number in the field notebook/notes.
25) Attach the ¼" Teflon tubing from the outlet end of the soil gas sampling fitting to the inlet end of the Chameleon fitting
26) Connect the female microvalve connection end of the Chameleon to the male end of the microvalve on the glass sampling bottle
27) Open the valve from the soil gas sampling fitting to begin sampling
28) Monitor the vacuum gauge on the Chameleon fitting, and disconnect the fitting when the vacuum gauge reads 0 in Hg (unless otherwise stated by the laboratory)
29) Close the valve from the soil gas sampling fitting
30) Record the final vacuum of the glass sample bottle in the field notebook/notes
31) Fill out glass sample bottle tag and verify the sample tag matches what is recorded on the COC
32) Return the glass sample bottle to the box and fill out the COC

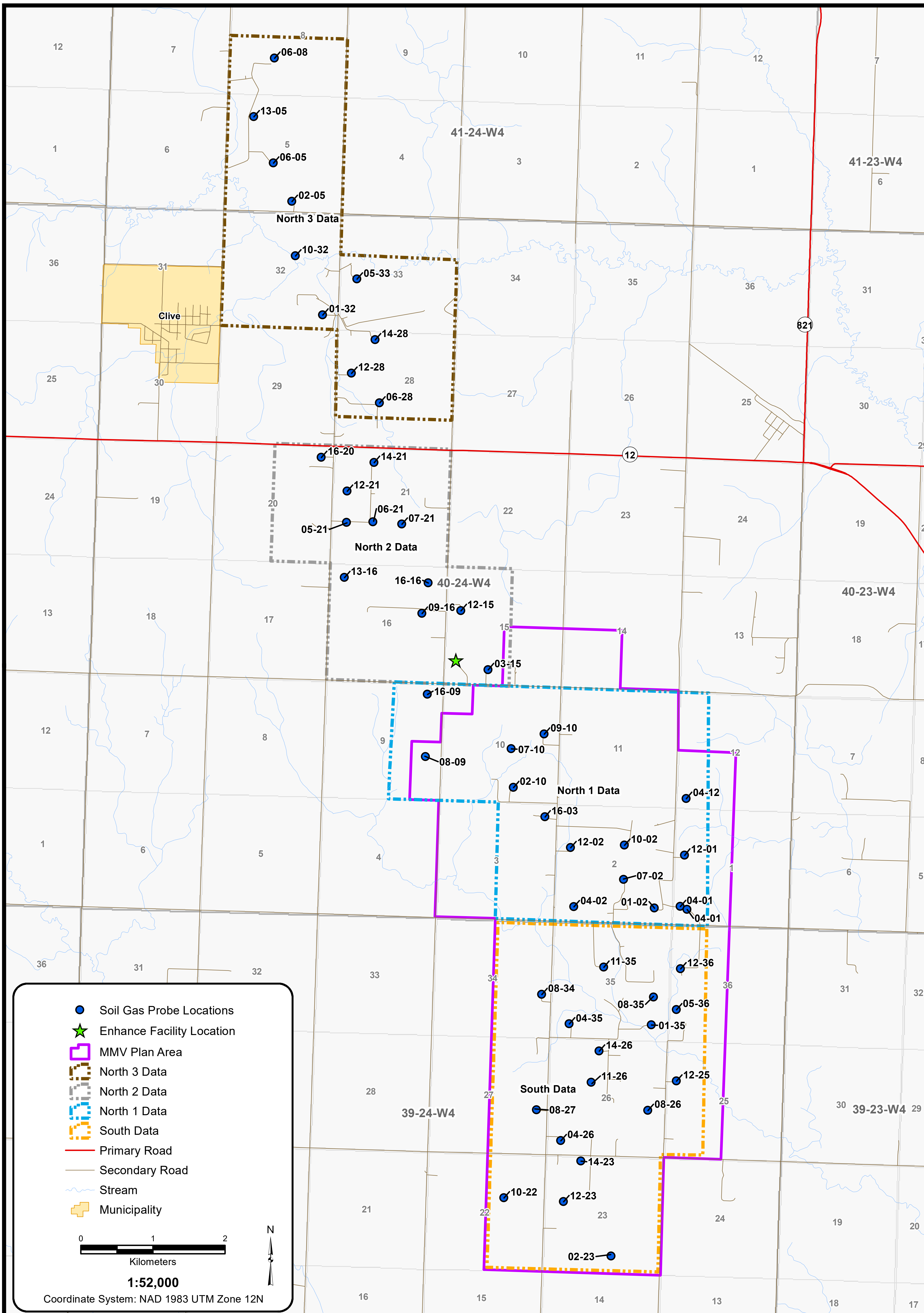
Recording Final Gas Readings

33) Connect the ¼ tubing to the GGA to collect additional post-purge of the in-situ sampling for methane and carbon dioxide
34) Open the soil gas sampling fitting valve and record final values for methane and carbon dioxide concentrations
35) Close the soil gas sampling fitting and disconnect the ¼" tubing from the GGA
36) Disconnect the ¼" tubing and compression fitting from the soil gas sampling fitting, verify the valve has been closed and return the fitting to the manhole
37) Close up manhole, and clean up all materials from Site

TECHNICAL REFERENCES

https://www.eurofinsus.com/media/161448/guide-to-air-sampling-analysis-2014-06-27_revised-logos.pdf

Appendix 3: Soil Gas Probe Networks & Temporal Trend Charts



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

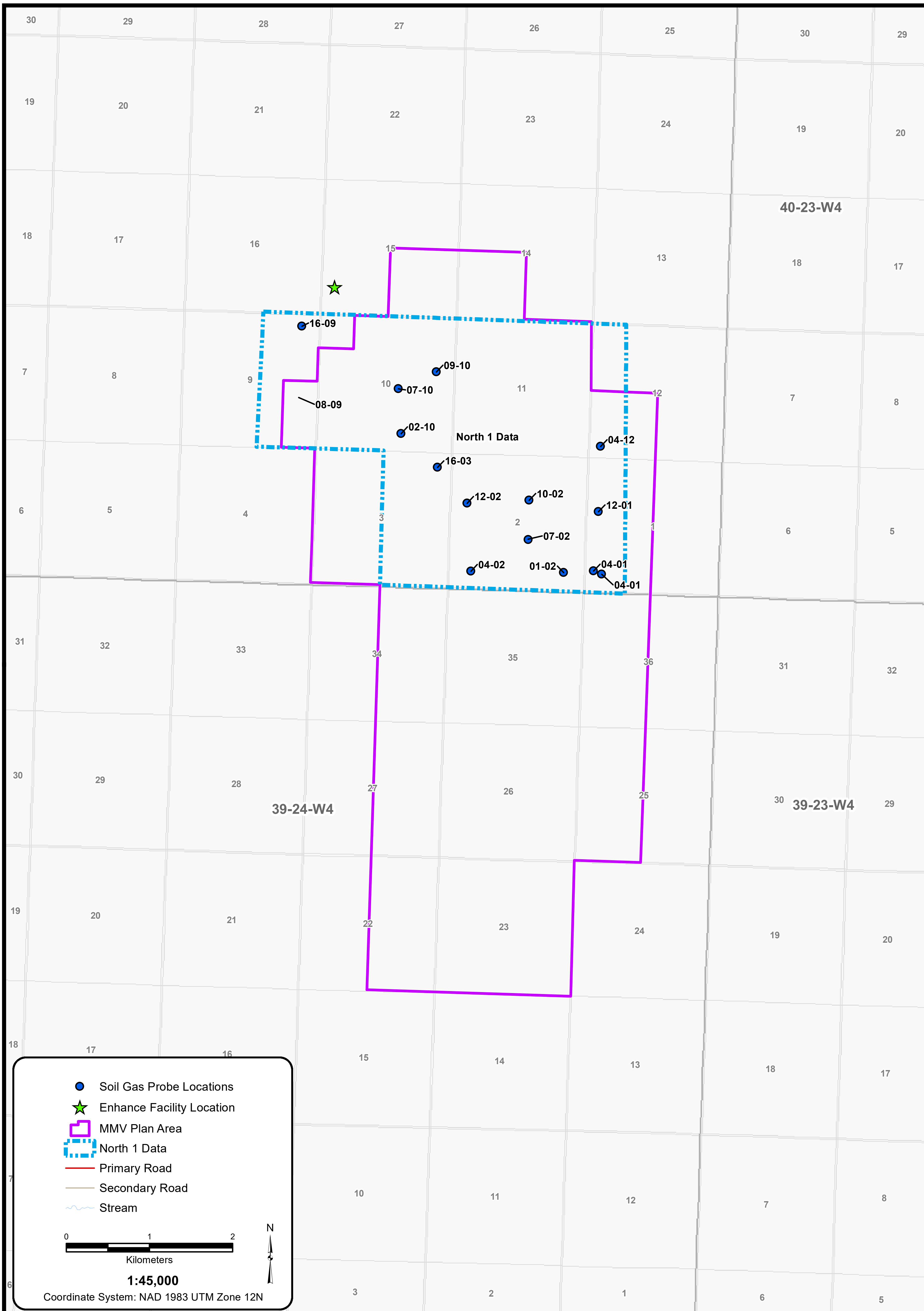
enhance

ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
LOCATIONS AND AREAS

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 1	REVISION: 0

NOTES: 27-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Appendix3_Fig1-CP22-EEI-01-00-SoilGas_Locations_AreasRev0.mxd, Saved: 2/27/2023 3:13:05 PM



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

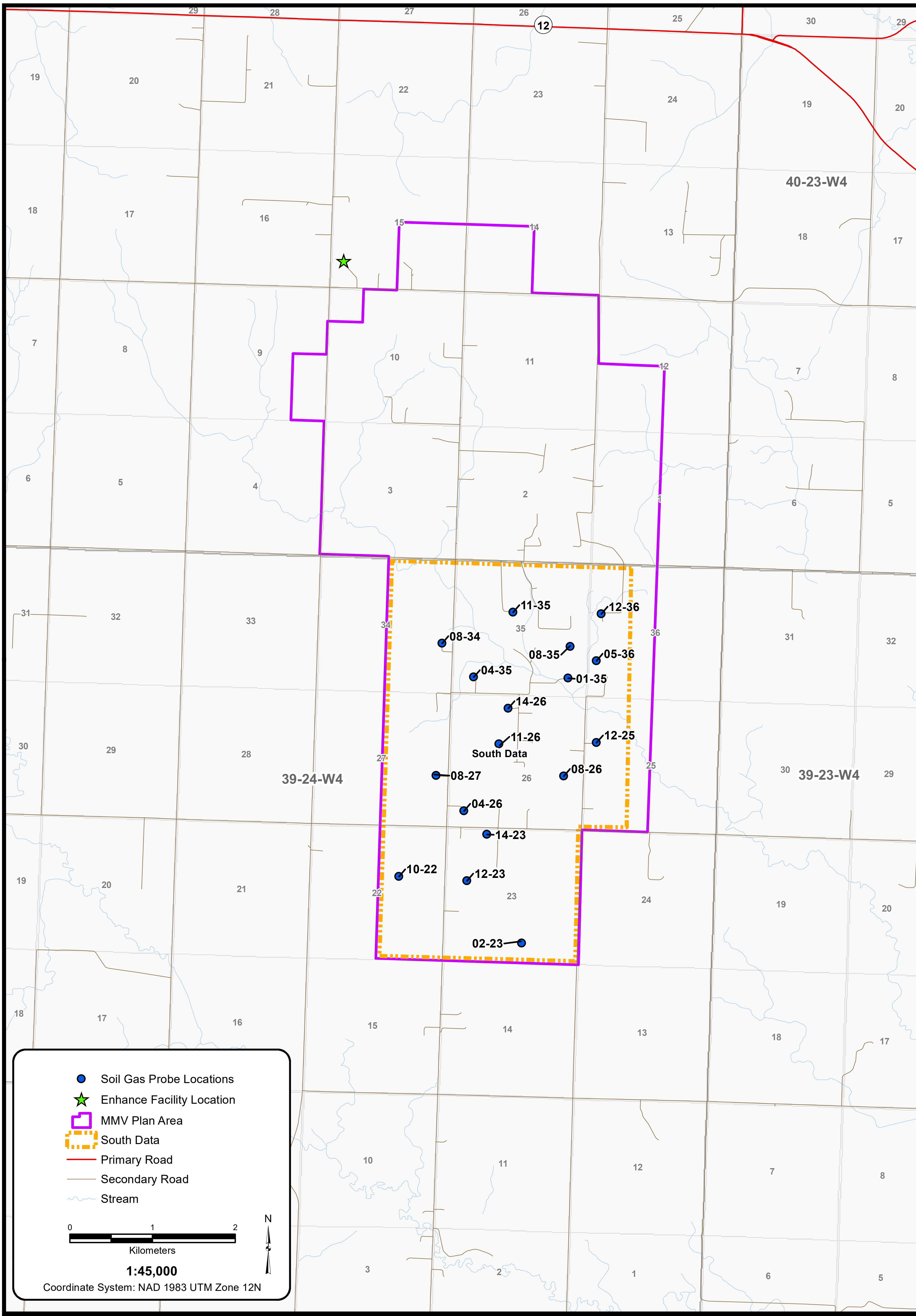
enhance

ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
NORTH 1 AREA

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 2	REVISION: 0

NOTES: 27-FEB-23
Source: Roads from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Saved: 2/27/2023 3:14:47 PM
Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Appendix3_Fig2-CP22-EEI-01-00-SoilGas_North1_AreasRev0.mxd,



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

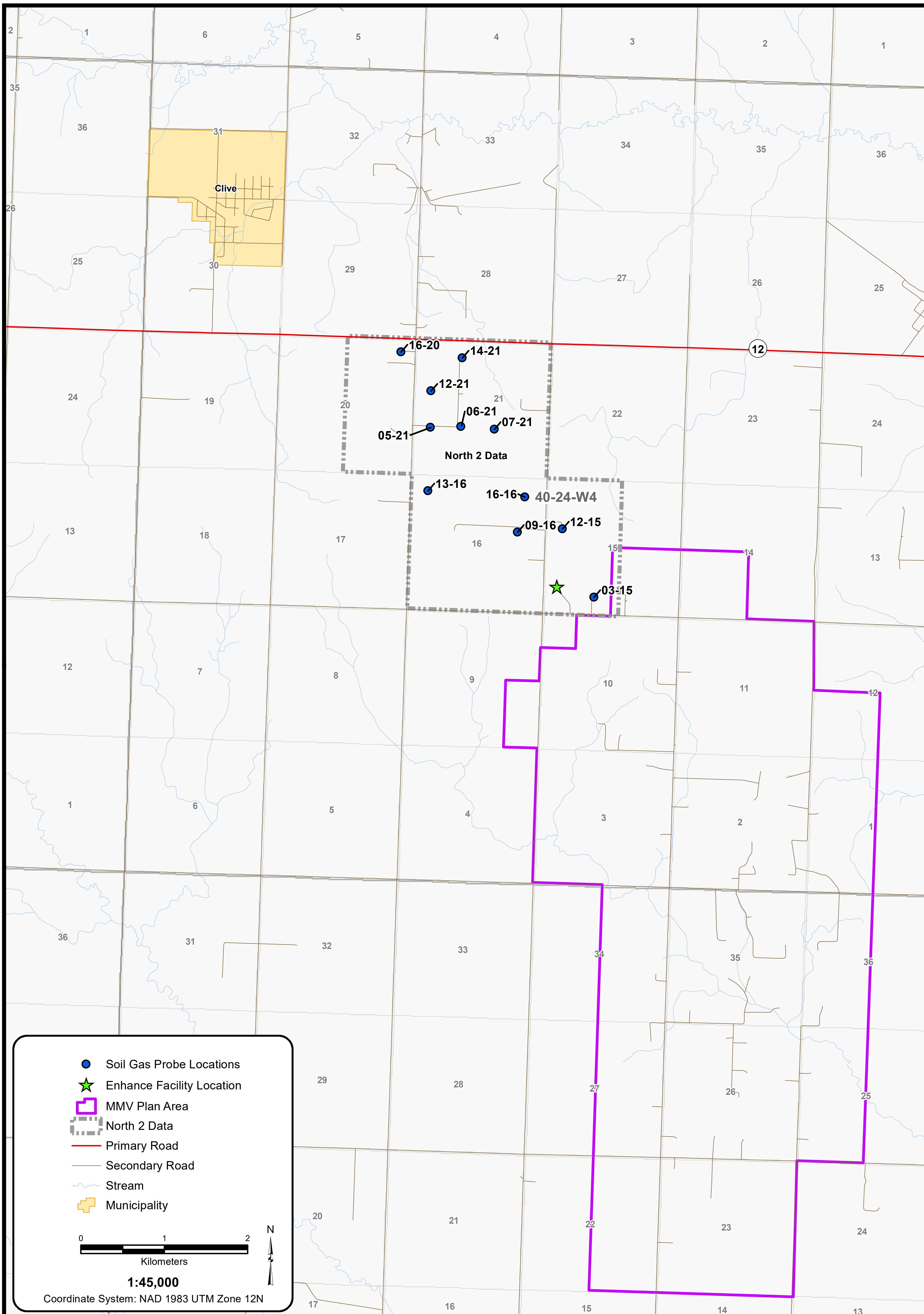
enhance

ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
SOUTH AREA

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 3	REVISION: 0

NOTES: 6-FEB-23
Source: Roads from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Appendix3_Fig3CP22-EEI-01-00-SoilGas_South_AreasRev0.mxd, Saved: 2/6/2023 4:25:55 PM



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

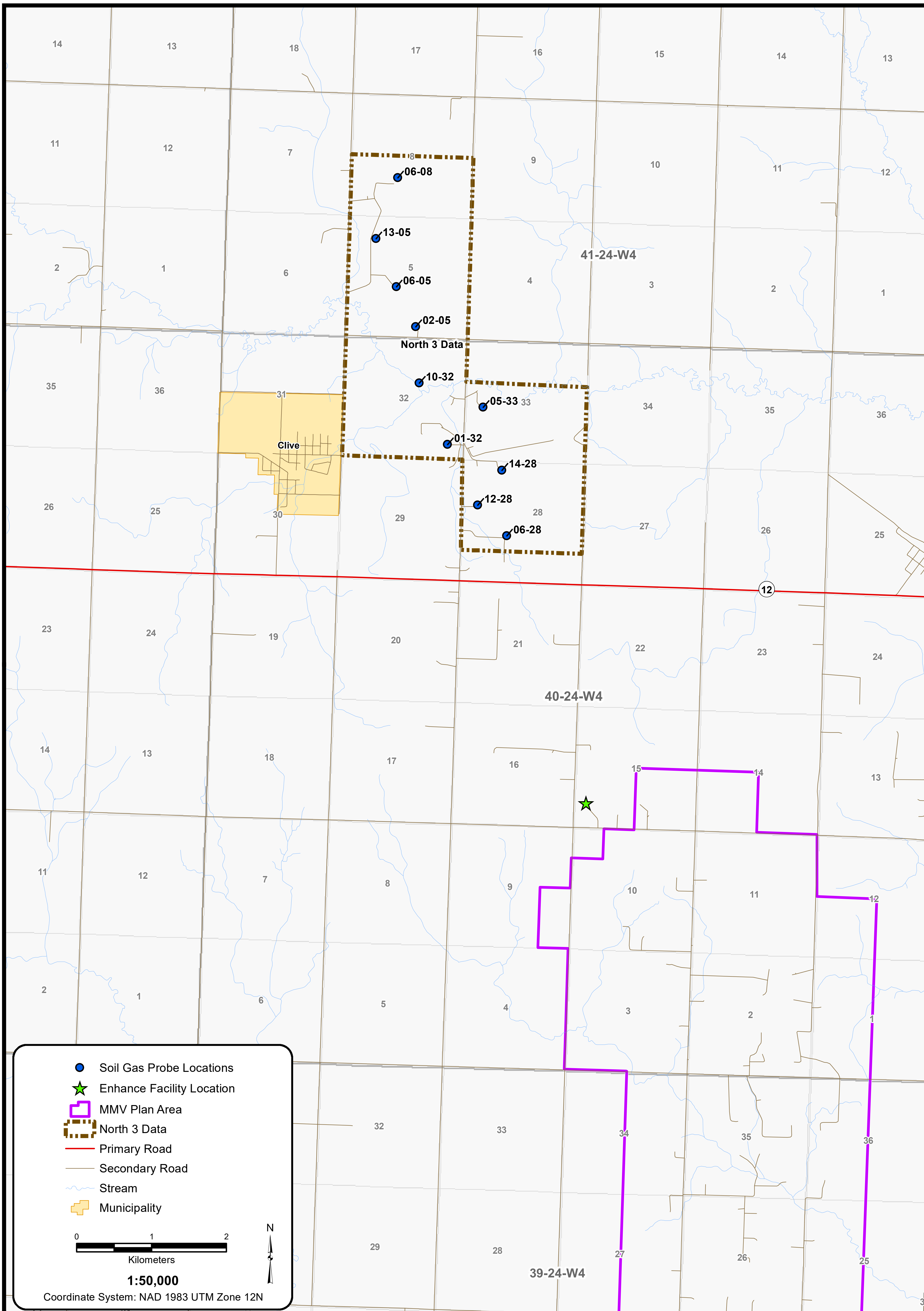
enhance

ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
NORTH 2 AREA

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 4	REVISION: 0

NOTES: 6-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Appendix3_Fig4-CP22-EEI-01-00-SoilGas_North2_Areas_Rev0-touseforall.mxd, Saved: 2/6/2023 4:09:35 PM



PREPARED BY:

INTEGRATED SUSTAINABILITY

CLIENT:

enhance

ENHANCE ENERGY INC.
SOIL GAS PROBE NETWORK
NORTH 3 AREA

DRAWN BY: K.MATEUSH	CHECKED BY: J.FENNELL	APPROVED BY: I.GRANT
PROJECT NO. CP22-EEI-01-00	FIGURE NO. 5	REVISION: 0

NOTES: 6-FEB-23
Source: Roads and Urban Areas from Altalis. MMV Plan Area provided by Enhance. FWMIS Streams from Government of Alberta.

Document Path: N:\Projects\EEI\CP22-EEI-01-00\MXD\2022_Groundwater_Report\Appendix3_Fig5-CP22-EEI-01-00-SoilGas_North3_AreasRev0.mxd, Saved: 2/6/2023 4:17:28 PM

INTEGRATED SUSTAINABILITY

Appendix 4: Soil Gas Probe Lithology

Soil Probe ID	Depth (m)	Soil Description
05-33-040-24 W4M	2.25	Clay
10-32-040-24 W4M	1.03	Clay and Sand: Fine-grained sand, trace oxidation, medium plasticity, moist, some gravel
02-05-041-24 W4M	1.05	Cobbles, Gravel and Sand
06-08-041-24 W4M	1.03	Clay and Sand: Trace to some gravel (up to 4cm), trace coal, trace oxidation, mottling, medium plasticity
12-21-040-24 W4M	1.05	Clay: Some sand, some gravel (up to 2 cm), med-low plasticity, low dry strength
14-21-040-24 W4M	0.98	Sand: Fine-grained sand, trace coal, moist, loose
13-16-040-24 W4M	1.00	Sand: Fine-grained sand, dark brown to light brown, loose, moist, poorly grated, homogenous
16-20-040-24 W4M	1.05	Sand: Fine-grained sand, trace oxidation, homogenous, poorly graded
06-28-040-24 W4M	1.05	Clay and sand: fine grained sand, moist, medium plasticity, medium dry strength, dark brown
12-28-040-24 W4M	1.03	Sand: Fine-grained sand, trace to some gravel (up to 3 cm), trace to some coal, poorly graded, pink color in sand
14-28-040-24 W4M	1.00	Sand: Fine-grained sand, loose, poorly sorted, moist
01-32-040-24 W4M	1.03	Sand: Fine-grained sand, trace to some silt, trace coal, trace oxidation, moist, homogenous
14-05-041-24 W4M	0.93	Sand: Fine-grained sand, trace clay, moist to wet,
06-05-041-24 W4M	1.03	Clay and sand: Very fine-grained sand, trace silt, trace gravel (up to 3 cm) med-high plasticity, trace oxidation
16-03-040-24 W4M	0.88	Clay: Hard
07-02-040-24 W4M	0.95	Clay and sand: Fine- to medium-grained sand, trace gravel (up to 1 cm), trace coal, trace oxidation

Soil Probe ID	Depth (m)	Soil Description
04-35-039-24 W4M	0.95	Clay: some fine-grained sand, trace silt, trace gravel, trace oxidation, moist, brown and black
14-26-039-24 W4M	0.93	Clay and gravel: some fine-coarse grained sand, oxidized, dry to moist
12-01-040-24 W4M	0.90	Clay and Sand: fine-med grained sand, trace coal, trace gravel, moist
16-16-040-24 W4M	0.60	Clay: sandy, fine-grained sand, light brown, moist

APPENDIX VI- Clive CO_2 Injection Reports

Submitted on March 31, 2023

Clive CO2 Injection Well

enhance

Clive CO2 Volumes Report

Date: 1/1/2022 to 1/31/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	689.48	8469.6	12,054.0	11,419.9	22,440	21,259	94.74%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	649.00	8397.6	12,441.2	11,794.1	23,160	21,956	94.80%
Clive Inj 06-02 Pad 00/01-03 Gas Mtr - 006-FIT-0004A	396.14	6178.1	5,511.6	5,214.3	10,260	9,707	94.61%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	681.68	9622.5	10,568.4	10,012.4	19,674	18,639	94.74%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	683.85	9044.8	15,168.0	14,382.9	28,237	26,775	94.82%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	657.09	9053.8	13,836.6	13,139.3	25,758	24,460	94.96%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	617.52	9338.4	9,496.7	9,016.2	17,679	16,785	94.94%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	500.33	6849.7	9,126.4	8,651.1	16,990	16,105	94.79%
Average			**2,845.3**	**2,697.7**	**5,297**	**5,022**	**94.82%**
Total			88,202.9	83,630.0	164,198	155,686	94.82%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	648.73	11324.6	48,328.8	48,058.8	89,969	89,466	99.44%
Average			**1,559.0**	**1,550.3**	**2,902**	**2,886**	**99.44%**
Total			48,328.8	48,058.8	89,969	89,466	99.44%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	668.06	0.0	37,525.8	33,355.1	69,858	62,094	88.89%
Average			**1,210.5**	**1,076.0**	**2,253**	**2,003**	**88.89%**
Total			37,525.8	33,355.1	69,858	62,094	88.89%

Total Injection (e3m3)	**88,202.9**
Total Delivery (e3m3)	**85,854.6**
Proration	**102.7%**

Monday, March 07, 2022 2:24:10 PM

Clive CO2 Volumes Report

Date: 2/1/2022 to 2/28/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	663.67	8503.9	13,538.3	12,798.8	25,203	23,826	94.54%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	661.98	8522.5	13,489.0	12,751.4	25,111	23,738	94.53%
Clive Inj 06-02 Pad 00/01-03 Gas Mtr - 006-FIT-0004A	16.15	352.8	393.2	373.3	732	695	94.94%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	671.58	9891.2	11,837.1	11,193.5	22,036	20,838	94.56%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	671.85	9042.1	16,407.5	15,513.4	30,544	28,880	94.55%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	671.85	9087.1	15,002.9	14,187.4	27,929	26,411	94.56%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	525.91	7022.1	7,789.5	7,365.0	14,501	13,711	94.55%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	670.80	9455.8	13,176.3	12,461.5	24,529	23,198	94.58%
Average			**3,272.6**	**3,094.4**	**6,092**	**5,761**	**94.55%**
Total			91,633.8	86,644.3	170,585	161,297	94.55%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	647.63	11937.5	53,480.9	52,871.0	99,560	98,425	98.86%
Average			**1,910.0**	**1,888.3**	**3,556**	**3,515**	**98.86%**
Total			53,480.9	52,871.0	99,560	98,425	98.86%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	665.95	0.0	37,961.0	33,592.4	70,668	62,536	88.49%
Average			**1,355.7**	**1,199.7**	**2,524**	**2,233**	**88.49%**
Total			37,961.0	33,592.4	70,668	62,536	88.49%

Total Injection (e3m3)	**91,633.8**
Total Delivery (e3m3)	**91,441.8**
Proration	**100.2%**

enhance

Clive CO2 Volumes Report

Date: 3/1/2022 to 3/31/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	716.48	8620.6	13,446.1	12,859.3	25,031	23,939	95.64%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	714.71	8661.2	12,772.1	12,198.0	23,777	22,708	95.50%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	743.55	9652.6	15,193.7	14,555.4	28,285	27,096	95.80%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	742.43	9655.2	13,708.6	13,125.7	25,520	24,435	95.75%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	575.10	8388.8	13,655.2	13,043.5	25,420	24,282	95.52%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	648.90	9196.4	14,078.4	13,455.3	26,208	25,048	95.57%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	3.22	298.9	94.0	89.4	175	166	95.15%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	744.00	9481.3	14,680.0	14,057.6	27,328	26,170	95.76%
Average			**3,149.3**	**3,012.4**	**5,863**	**5,608**	**95.65%**
Total			97,628.1	93,384.3	181,745	173,844	95.65%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	739.84	11591.5	59,903.7	59,616.2	111,517	110,982	99.52%
Average			**1,932.4**	**1,923.1**	**3,597**	**3,580**	**99.52%**
Total			59,903.7	59,616.2	111,517	110,982	99.52%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	740.43	0.0	39,207.7	35,214.1	72,989	65,554	89.81%
Average			**1,264.8**	**1,135.9**	**2,354**	**2,115**	**89.81%**
Total			39,207.7	35,214.1	72,989	65,554	89.81%

Total Injection (e3m3)	**97,628.1**
Total Delivery (e3m3)	**99,111.5**
Proration	**98.5%**

Clive CO2 Volumes Report

Date: 4/1/2022 to 4/30/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	720.00	8536.3	15,208.6	14,562.9	28,312	27,110	95.75%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	718.12	8258.1	15,245.3	14,601.4	28,381	27,182	95.78%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	718.02	9358.0	14,619.3	14,006.8	27,215	26,075	95.81%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	720.00	9669.8	15,550.6	14,894.1	28,949	27,727	95.78%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	559.50	8101.0	13,477.2	12,878.7	25,089	23,975	95.56%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	566.97	7933.7	12,475.5	11,923.3	23,224	22,196	95.57%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	0.0	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	720.00	9165.3	15,004.1	14,371.4	27,932	26,754	95.78%
Average			**3,386.0**	**3,241.3**	**6,303**	**6,034**	**95.73%**
Total			101,580.5	97,238.8	189,102	181,020	95.73%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	719.87	11806.0	66,234.1	65,811.9	123,301	122,515	99.36%
Average			**2,207.8**	**2,193.7**	**4,110**	**4,084**	**99.36%**
Total			66,234.1	65,811.9	123,301	122,515	99.36%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	718.66	0.0	35,445.8	31,521.9	65,986	58,681	88.93%
Average			**1,181.5**	**1,050.7**	**2,200**	**1,956**	**88.93%**
Total			35,445.8	31,521.9	65,986	58,681	88.93%

Total Injection (e3m3)	**101,580.5**
Total Delivery (e3m3)	**101,679.8**
Proration	**99.9%**

Clive CO2 Volumes Report

Date: 5/1/2022 to 5/31/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	744.00	8340.4	13,407.5	12,795.6	24,959	23,820	95.44%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	744.00	8309.2	12,883.8	12,295.5	23,984	22,889	95.43%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	743.92	9345.2	17,590.6	16,792.4	32,747	31,261	95.46%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	744.00	9339.7	17,076.5	16,303.6	31,790	30,351	95.47%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	744.00	8710.1	18,132.3	17,304.6	33,755	32,214	95.44%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	744.00	8779.9	15,700.8	14,984.6	29,229	27,895	95.44%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	0.0	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	744.00	9085.4	18,063.7	17,244.8	33,627	32,103	95.47%
Average			**3,640.5**	**3,474.9**	**6,777**	**6,469**	**95.45%**
Total			112,855.1	107,720.9	210,091	200,533	95.45%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	743.46	11871.5	68,707.9	68,280.6	127,907	127,111	99.38%
Average			**2,216.4**	**2,202.6**	**4,126**	**4,100**	**99.38%**
Total			68,707.9	68,280.6	127,907	127,111	99.38%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	743.95	0.0	44,618.9	39,893.3	83,062	74,265	89.41%
Average			**1,439.3**	**1,286.9**	**2,679**	**2,396**	**89.41%**
Total			44,618.9	39,893.3	83,062	74,265	89.41%

Total Injection (e3m3)	**112,855.1**
Total Delivery (e3m3)	**113,326.8**
Proration	**99.6%**

enhance

Clive CO2 Volumes Report

Date: 6/1/2022 to 6/30/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	719.97	8094.9	15,152.5	14,180.3	28,208	26,398	93.58%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	720.00	8094.4	13,124.9	12,272.2	24,433	22,846	93.50%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	711.00	9441.7	14,804.1	13,861.5	27,559	25,805	93.63%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	719.25	9374.0	15,316.5	14,336.2	28,513	26,688	93.60%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	719.10	8743.1	16,289.4	15,253.2	30,324	28,395	93.64%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	718.52	8777.6	19,561.6	18,314.8	36,416	34,095	93.63%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	0.0	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	662.72	8924.7	14,790.1	13,864.3	27,533	25,810	93.74%
Average			**3,634.6**	**3,402.8**	**6,766**	**6,335**	**93.62%**
Total			109,039.1	102,082.6	202,987	190,037	93.62%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	718.79	11771.1	62,160.7	61,367.0	115,718	114,241	98.72%
Average			**2,072.0**	**2,045.6**	**3,857**	**3,808**	**98.72%**
Total			62,160.7	61,367.0	115,718	114,241	98.72%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	705.20	0.0	43,554.2	37,600.3	81,080	69,997	86.33%
Average			**1,451.8**	**1,253.3**	**2,703**	**2,333**	**86.33%**
Total			43,554.2	37,600.3	81,080	69,997	86.33%

Total Injection (e3m3)	**109,039.1**
Total Delivery (e3m3)	**105,714.9**
Proration	**103.1%**

enhance

Clive CO2 Volumes Report

Date: 7/1/2022 to 7/31/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
	0.00	0.0	0.0	0.0	0	0	0.00%
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	744.00	7922.3	15,629.2	14,752.2	29,095	27,463	94.39%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	744.00	7915.7	14,750.4	13,923.1	27,459	25,919	94.39%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	742.52	9257.8	16,407.5	15,487.2	30,544	28,831	94.39%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	744.00	9223.2	17,334.3	16,363.0	32,270	30,461	94.40%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	735.23	8623.9	15,430.3	14,562.1	28,725	27,109	94.37%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	732.47	8631.1	15,573.0	14,696.7	28,991	27,359	94.37%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	0.0	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	744.00	8966.3	16,629.7	15,697.1	30,958	29,222	94.39%
Average			**3,605.0**	**3,402.6**	**6,711**	**6,334**	**94.39%**
Total			111,754.3	105,481.6	208,042	196,364	94.39%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	744.00	11827.0	70,202.9	69,709.7	130,690	129,772	99.30%
Average			**2,264.6**	**2,248.7**	**4,216**	**4,186**	**99.30%**
Total			70,202.9	69,709.7	130,690	129,772	99.30%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	717.45	0.0	42,390.0	36,563.3	78,913	68,066	86.25%
Average			**1,367.4**	**1,179.5**	**2,546**	**2,196**	**86.25%**
Total			42,390.0	36,563.3	78,913	68,066	86.25%

Total Injection (e3m3)	**111,754.3**
Total Delivery (e3m3)	**112,592.8**
Proration	**99.3%**

Clive CO2 Volumes Report

Date: 8/1/2022 to 8/31/2022

Location	Time On (hrs)	Pressure (kpa)	Clive CO2 Injection Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	512.54	7235.4	8,050.6	7,412.9	14,987	13,800	92.08%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	713.21	8905.8	13,031.4	11,823.8	24,259	22,011	90.73%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	474.75	5701.3	6,017.4	5,585.7	11,202	10,398	92.83%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	811.45	9651.2	9,396.1	8,624.7	17,492	16,056	91.79%
Clive Inj 08-09 Pad 02/16-10 Gas Meter - 017-FIT-0006	0.00	0.0	0.0	0.0	0	0	0.00%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	741.04	9289.1	12,064.1	10,966.0	22,459	20,414	90.90%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	740.41	9296.3	11,084.6	10,095.8	20,635	18,794	91.08%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	2.2	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	633.24	9484.1	12,270.9	11,219.2	22,844	20,886	91.43%
Average			**2,319.8**	**2,120.3**	**4,319**	**3,947**	**91.40%**
Total			71,915.1	65,728.1	133,877	122,359	91.40%

Location	Time On (hrs)	Pressure (kpa)	ACTL Sales Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	711.85	10821.1	24,924.9	24,831.5	46,400	46,226	99.63%
Average			**804.0**	**801.0**	**1,497**	**1,491**	**99.63%**
Total			24,924.9	24,831.5	46,400	46,226	99.63%

Location	Time On (hrs)	Pressure (kpa)	Clive 04-15 Sales Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	741.03	0.0	45,737.8	39,782.7	85,146	74,059	86.98%
Average			**1,475.4**	**1,283.3**	**2,747**	**2,389**	**86.98%**
Total			45,737.8	39,782.7	85,146	74,059	86.98%

Total Injection (e3m3)	**71,915.1**
Total Delivery (e3m3)	**70,662.7**
Proration	**101.8%**

Clive CO2 Volumes Report

Date: 9/1/2022 to 9/30/2022

			Clive CO2 Injection				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	716.05	10083.2	5,104.0	4,556.9	9,502	8,483	89.28%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	717.92	4121.2	5,998.3	5,352.0	11,166	9,963	89.23%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	118.08	(11.6)	8.4	7.5	16	14	88.96%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	170.45	10305.6	1,087.3	975.4	2,024	1,816	89.71%
Clive Inj 08-09 Pad 02/16-10 Gas Meter - 017-FIT-0006	687.09	32.0	28,744.7	25,660.2	53,511	47,769	89.27%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	278.49	10216.3	2,429.5	2,168.9	4,523	4,038	89.27%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	277.33	10250.6	2,116.5	1,889.4	3,940	3,517	89.27%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	9.7	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	762.92	10368.1	8,206.0	7,325.1	15,276	13,636	89.27%
Average			**1,789.8**	**1,597.8**	**3,332**	**2,975**	**89.27%**
Total			53,694.8	47,935.3	99,958	89,236	89.27%

			ACTL Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	473.27	10357.0	6,870.4	6,787.5	12,790	12,636	98.79%
Average			**229.0**	**226.3**	**426**	**421**	**98.79%**
Total			6,870.4	6,787.5	12,790	12,636	98.79%

			Clive 04-15 Sales				CO2 Content
Location	**Time On (hrs)**	**Pressure (kpa)**	**Gross Volume (e3m3)**	**Net CO2 (e3m3)**	**Gross (Tonnes)**	**Net CO2 (Tonnes)**	**%**
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	715.07	0.0	45,187.8	39,698.3	84,122	73,902	87.85%
Average			**1,506.3**	**1,323.3**	**2,804**	**2,463**	**87.85%**
Total			45,187.8	39,698.3	84,122	73,902	87.85%

Total Injection (e3m3)	**53,694.8**
Total Delivery (e3m3)	**52,058.2**
Proration	**103.1%**

Clive CO2 Volumes Report

Date: 10/1/2022 to 10/31/2022

Location	Time On (hrs)	Pressure (kpa)	Clive CO2 Injection Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	684.15	10004.9	6,627.0	5,950.2	12,337	11,077	89.79%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	688.60	6260.4	7,101.2	6,395.7	13,220	11,906	90.06%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	0.00	(10.4)	0.0	0.0	0	0	0.00%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	0.05	8811.3	0.0	0.0	0	0	0.00%
Clive Inj 08-09 Pad 02/16-10 Gas Meter - 017-FIT-0006	478.90	3756.9	26,812.0	24,242.4	49,913	45,130	90.42%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	421.63	10234.7	5,611.2	5,050.2	10,446	9,401	90.00%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	421.63	10340.3	5,326.3	4,784.2	9,915	8,906	89.82%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	0.00	10.9	0.0	0.0	0	0	0.00%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	602.97	10318.3	7,222.4	6,504.9	13,445	12,110	90.07%
Average			**1,893.6**	**1,707.3**	**3,525**	**3,178**	**90.17%**
Total			58,700.2	52,927.5	109,276	98,530	90.17%

Location	Time On (hrs)	Pressure (kpa)	ACTL Sales Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	345.66	10272.4	12,589.2	12,434.4	23,436	23,148	98.77%
Average			**406.1**	**401.1**	**756**	**747**	**98.77%**
Total			12,589.2	12,434.4	23,436	23,148	98.77%

Location	Time On (hrs)	Pressure (kpa)	Clive 04-15 Sales Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	743.62	0.0	45,505.5	39,965.6	84,713	74,400	87.83%
Average			**1,467.9**	**1,289.2**	**2,733**	**2,400**	**87.83%**
Total			45,505.5	39,965.6	84,713	74,400	87.83%

Total Injection (e3m3)	**58,700.2**
Total Delivery (e3m3)	**58,094.7**
Proration	**101.0%**

Clive CO2 Volumes Report

Date: 11/1/2022 to 11/30/2022

Location	Time On (hrs)	Pressure (kpa)	Clive CO2 Injection Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	170.32	9606.3	3,613.1	3,407.4	6,726	6,343	94.31%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	149.21	9584.8	3,138.3	2,959.5	5,842	5,509	94.30%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	0.00	(7.4)	0.0	0.0	0	0	0.00%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	583.86	9649.0	4,089.3	3,705.0	7,613	6,897	90.60%
Clive Inj 08-09 Pad 02/16-10 Gas Meter - 017-FIT-0006	714.80	9635.9	22,542.1	20,678.2	41,964	38,494	91.73%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	704.60	9738.4	11,303.6	10,280.3	21,043	19,138	90.95%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	642.22	9404.0	7,586.5	6,848.1	14,123	12,748	90.27%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	650.67	9135.7	11,010.8	10,022.7	20,498	18,658	91.03%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	51.15	1286.1	742.1	654.5	1,381	1,218	88.19%
Average			**2,134.2**	**1,951.9**	**3,973**	**3,634**	**91.46%**
Total			64,025.9	58,555.7	119,191	109,007	91.46%

Location	Time On (hrs)	Pressure (kpa)	ACTL Sales Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	616.64	10097.9	21,693.3	21,384.3	40,384	39,809	98.58%
Average			**723.1**	**712.8**	**1,346**	**1,327**	**98.58%**
Total			21,693.3	21,384.3	40,384	39,809	98.58%

Location	Time On (hrs)	Pressure (kpa)	Clive 04-15 Sales Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	CO2 Content %
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	704.86	0.0	42,164.9	37,033.5	78,494	68,941	87.83%
Average			**1,405.5**	**1,234.4**	**2,616**	**2,298**	**87.83%**
Total			42,164.9	37,033.5	78,494	68,941	87.83%

Total Injection (e3m3)	**64,025.9**
Total Delivery (e3m3)	**63,858.2**
Proration	**100.3%**

Clive CO2 Volumes Report

Date: 12/1/2022 to 12/31/2022

Location	Time On (hrs)	Pressure (kpa)	Clive CO2 Injection				CO2 Content
			Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	%
Clive Inj 02-26 Pad 00/11-25 Gas Meter - 013-FIT-0010B	737.17	8638.6	16,151.2	15,289.6	30,067	28,463	94.67%
Clive Inj 02-26 Pad 02/02-22 Gas Meter - 013-FIT-0010A	742.53	8553.6	16,575.3	15,681.0	30,857	29,192	94.60%
Clive Inj 06-02 Pad 00/01-03 Gas Meter - 006-FIT-0004A	0.00	(4.4)	0.0	0.0	0	0	0.00%
Clive Inj 06-02 Pad 03/16-02 Gas Meter - 006-FIT-0004B	591.34	8161.4	10,001.8	9,441.9	18,619	17,577	94.40%
Clive Inj 08-09 Pad 02/16-10 Gas Meter - 017-FIT-0006	358.62	6417.6	20,299.9	19,140.7	37,790	35,632	94.29%
Clive Inj 15-26 Pad 00/01-27 Gas Meter - 011-FIT-0010A	742.45	9358.8	16,079.6	15,229.1	29,934	28,351	94.71%
Clive Inj 15-26 Pad 02/11-36 Gas Meter - 011-FIT-0010B	650.57	7854.3	9,918.1	9,356.3	18,464	17,418	94.34%
Clive Inj 15-35 Pad 00/01-34 Gas Meter - 009-FIT-0010B	736.72	9626.4	17,415.6	16,484.6	32,421	30,688	94.65%
Clive Inj 15-35 Pad 02/06-01 Gas Meter - 009-FIT-0010A	0.00	140.3	0.0	0.0	0	0	0.00%
Average			**3,433.6**	**3,245.9**	**6,392**	**6,043**	**94.53%**
Total			106,441.7	100,623.3	198,152	187,320	94.53%

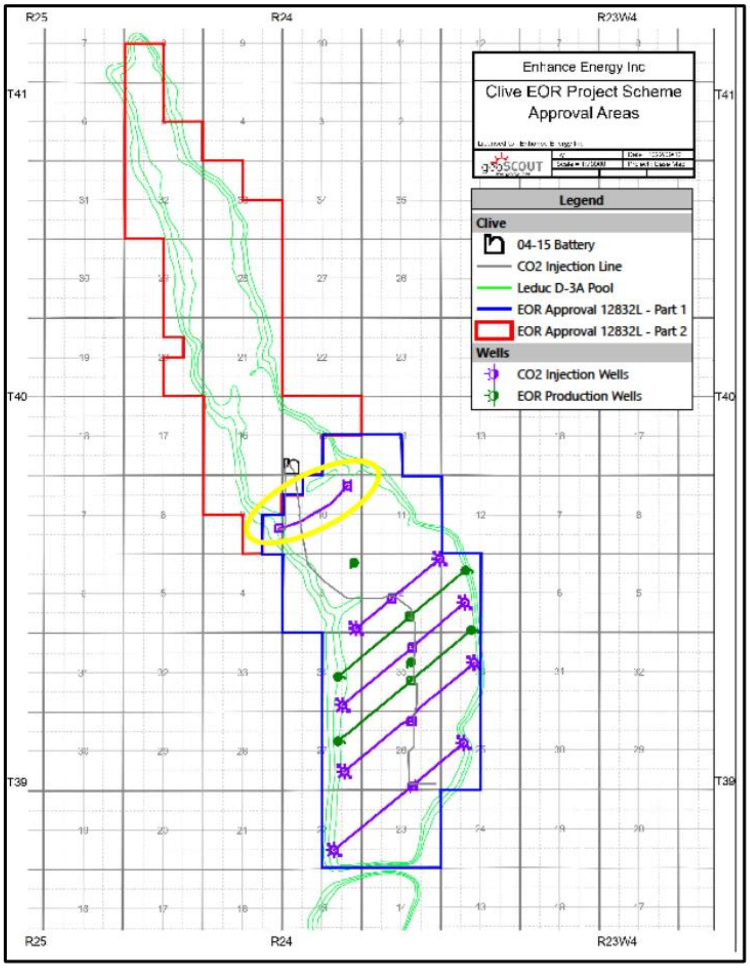
Location	Time On (hrs)	Pressure (kpa)	ACTL Sales				CO2 Content
			Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	%
Clive 4-15-40-24W4 ACTL Delivery Meter - 090-FIT-0202	743.27	11309.0	65,551.9	64,670.6	122,031	120,391	98.66%
Average			**2,114.6**	**2,086.1**	**3,936**	**3,884**	**98.66%**
Total			65,551.9	64,670.6	122,031	120,391	98.66%

Location	Time On (hrs)	Pressure (kpa)	Clive 04-15 Sales				CO2 Content
			Gross Volume (e3m3)	Net CO2 (e3m3)	Gross (Tonnes)	Net CO2 (Tonnes)	%
Clive Battery 4-15-40-24W4 Recycle Gas - 091-FIT-0034A	715.00	0.0	40,798.2	35,838.1	75,950	66,716	87.84%
Average			**1,316.1**	**1,156.1**	**2,450**	**2,152**	**87.84%**
Total			40,798.2	35,838.1	75,950	66,716	87.84%

Total Injection (e3m3)	**106,441.7**
Total Delivery (e3m3)	**106,350.1**
Proration	**100.1%**

APPENDIX VII- Clive Injection and Production Well Charts

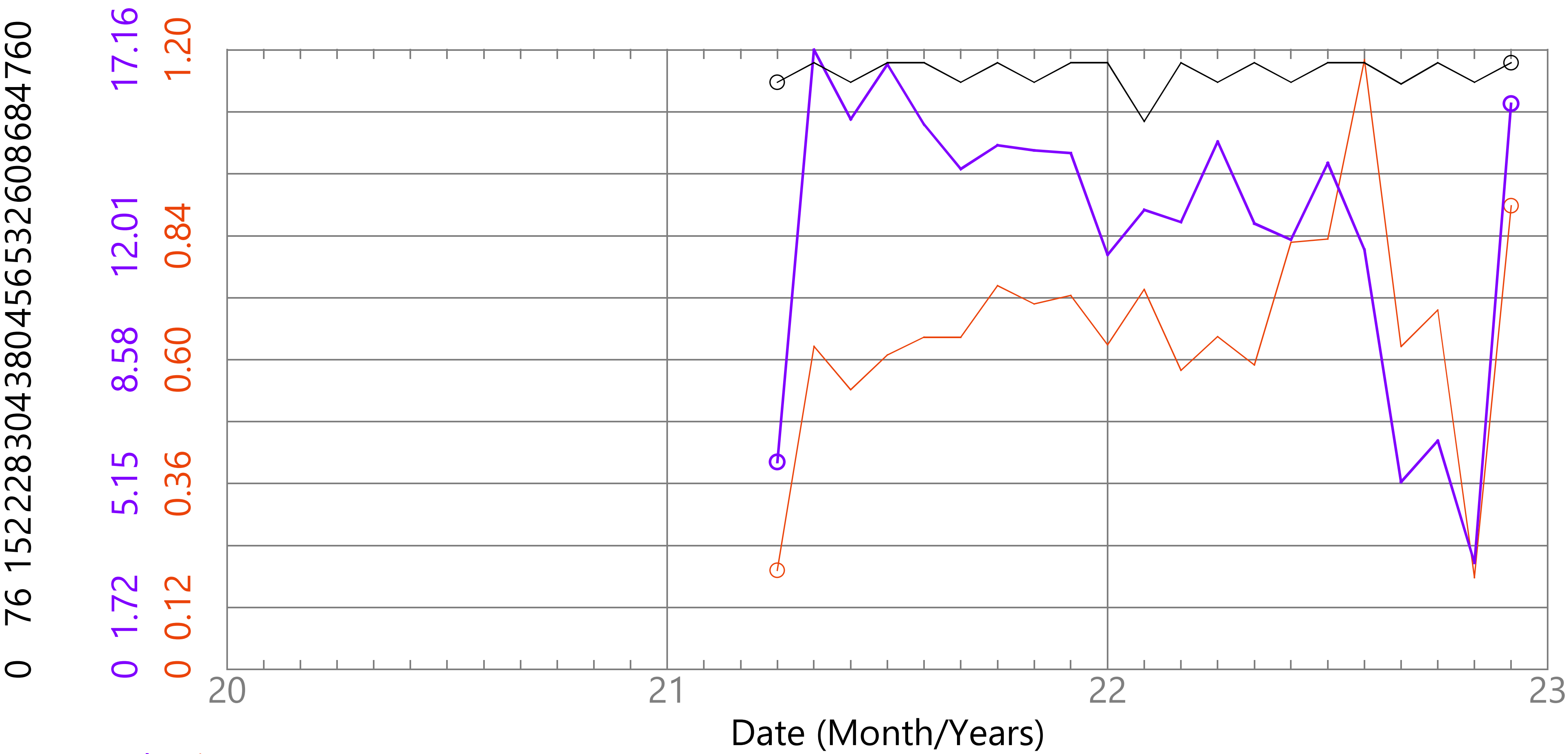
Submitted on March 31, 2023



Clive Injection and Production Wells and AER Approval Area

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB)	102/02-22-039-24W4/00	Field: CLIVE (0224)
From: 2021-04	ENHANCEENERGY CLIVE 2-22-39-24	Pool: D-3 A (0720001)
To: 2022-12	Carbon Dioxide Injection	Unit: Clive D-3a Unit No. 1



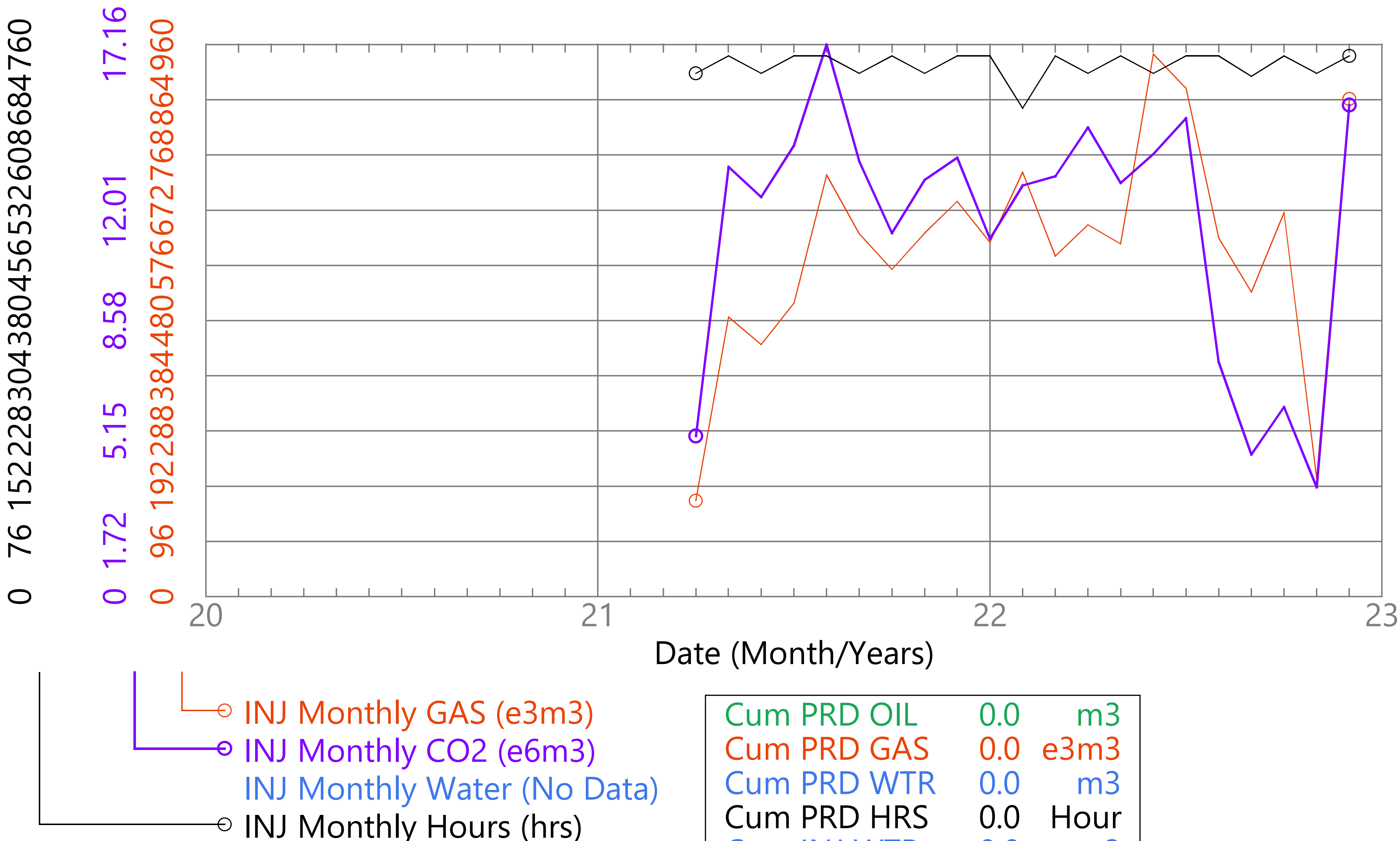
INJ Monthly GAS (e6m3)
INJ Monthly CO2 (e6m3)
INJ Monthly Water (No Data)
INJ Monthly Hours (hrs)

Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	0.0	m3

geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 100/11-25-039-24W4/00 | Field: CLIVE (0224)
From: 2021-04 | ENHANCEENERGY CLIVE 11-25-39-24 | Pool: D-3 A (0720001)
To: 2022-12 | Carbon Dioxide Injection | Unit: Clive D-3a Unit No. 1

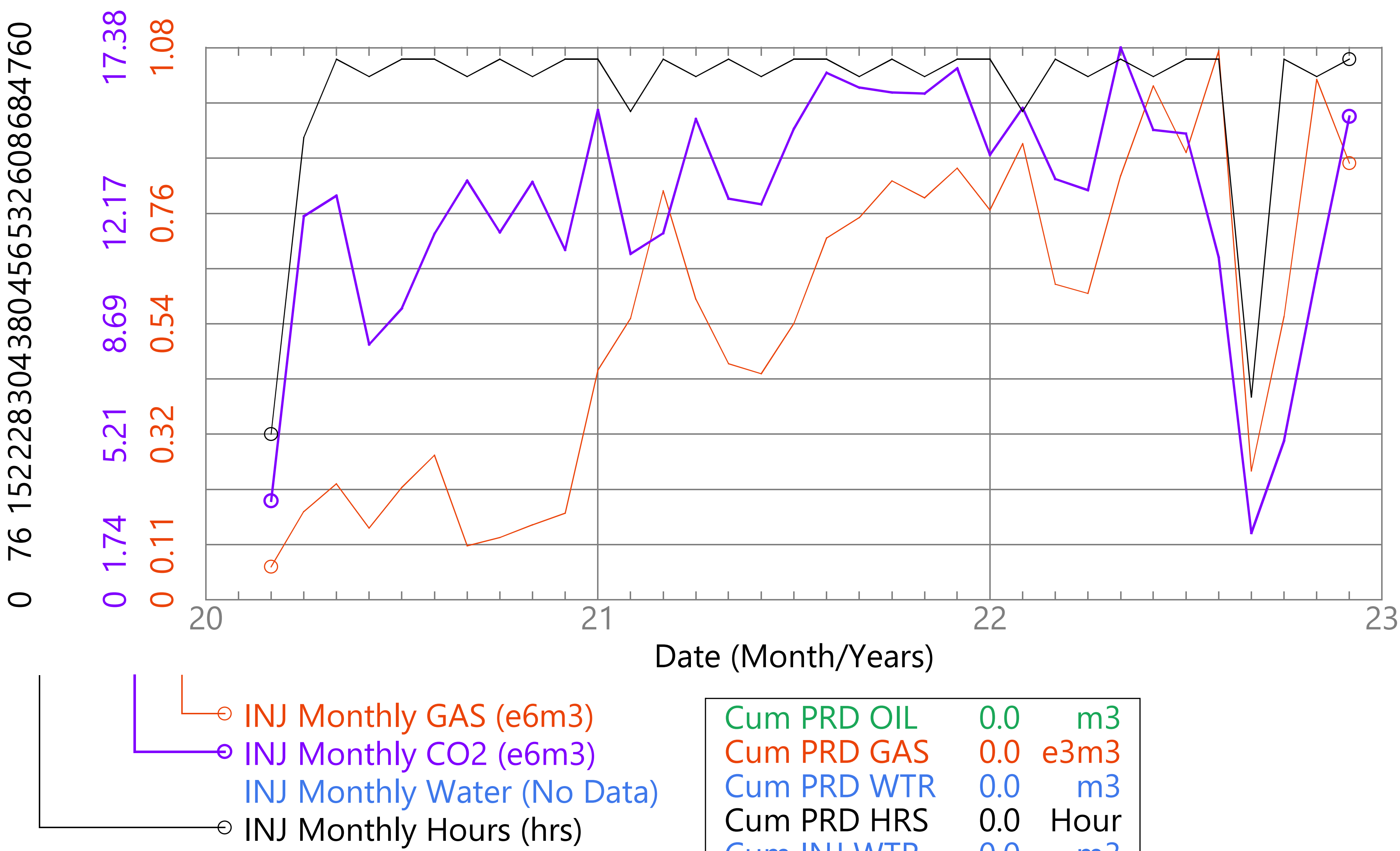


Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	0.0	m3

geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 100/01-27-039-24W4/00 | Field: CLIVE (0224)
From: 2020-03 | ENHANCEENERGY CLIVE 1-27-39-24 | Pool: D-3 A (0720001)
To: 2022-12 | Carbon Dioxide Injection | Unit: Clive D-3a Unit No. 1



Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	0.0	m3

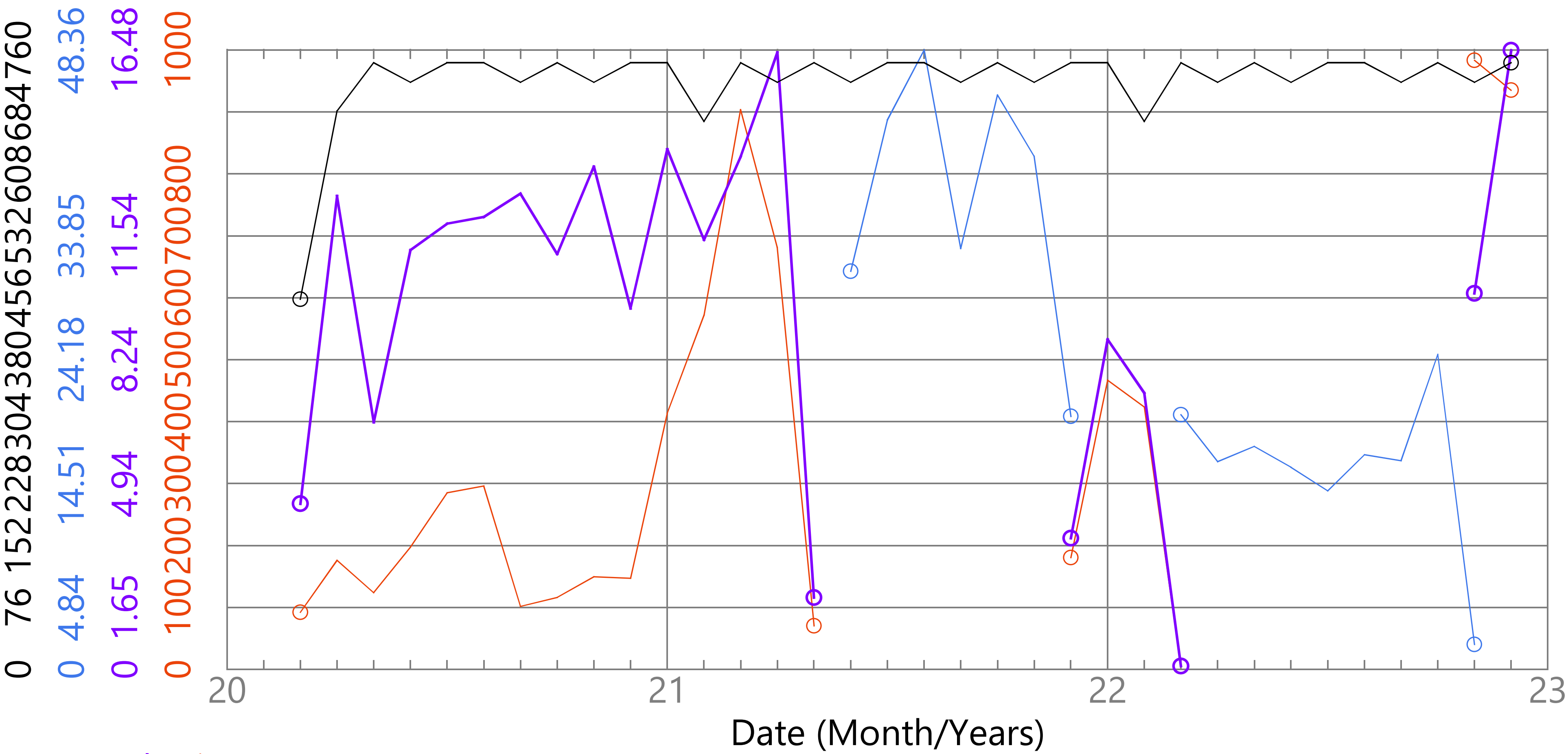
geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 100/01-34-039-24W4/00 | Field: CLIVE (0224)

From: 2020-03 | ENHANCEENERGY CLIVE 1-34-39-24 | Pool: D-3 A (0720001)

To: 2022-12 | Carbon Dioxide Injection | Unit: Clive D-3a Unit No. 1

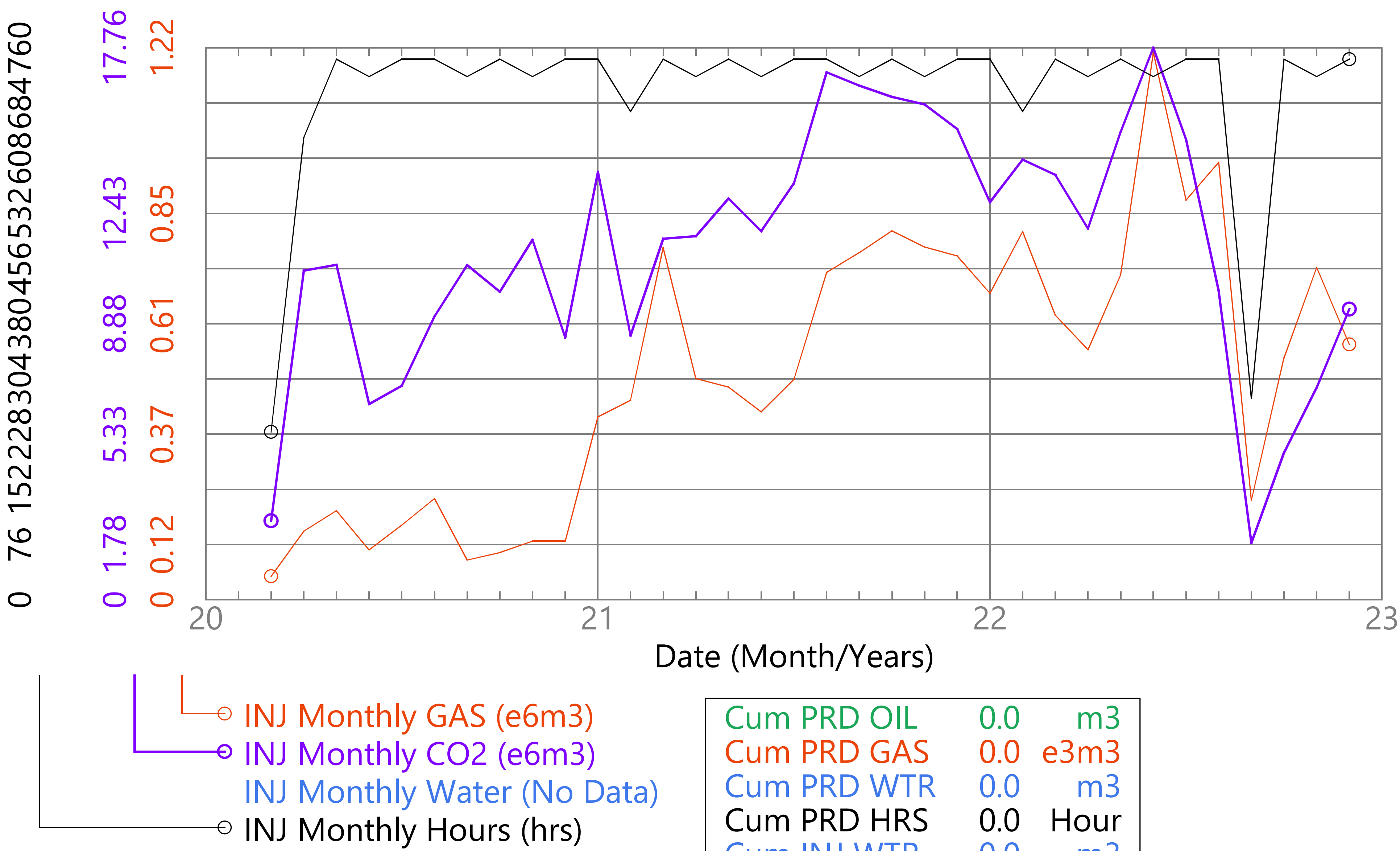


INJ Monthly GAS (e3m3)
INJ Monthly CO2 (e6m3)
INJ Monthly Water (e3m3)
INJ Monthly Hours (hrs)

Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	402.5	e3m3

INDIVIDUAL PRODUCTION/INJECTION

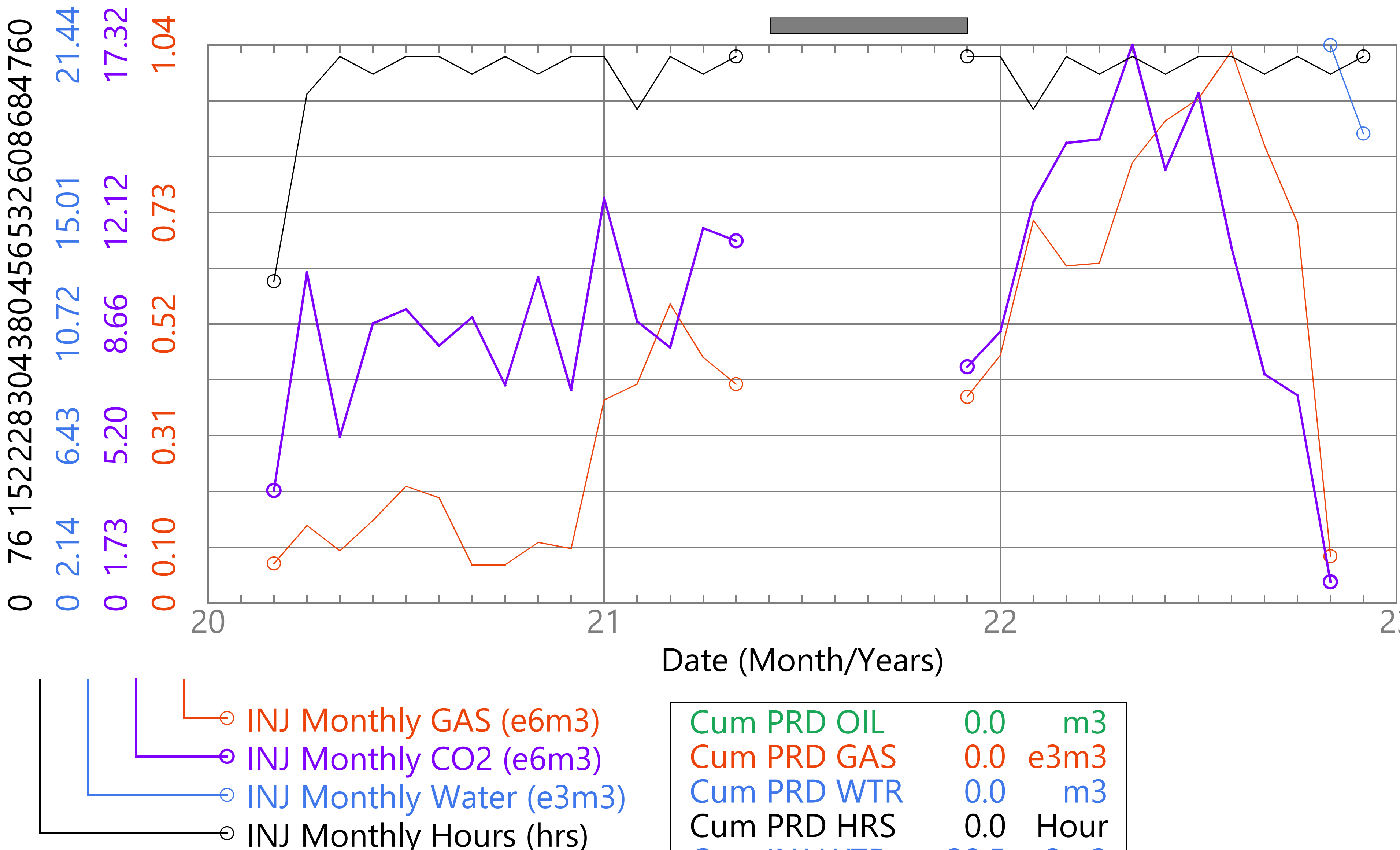
Data As Of: 2022-12 (AB) | 102/11-36-039-24W4/00 | Field: CLIVE (0224)
From: 2020-03 | ENHANCEENERGY CLIVE 11-36-39-24 | Pool: D-3 A (0720001)
To: 2022-12 | Carbon Dioxide Injection | Unit: Clive D-3a Unit No. 1



Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	0.0	m3

INDIVIDUAL PRODUCTION/INJECTION

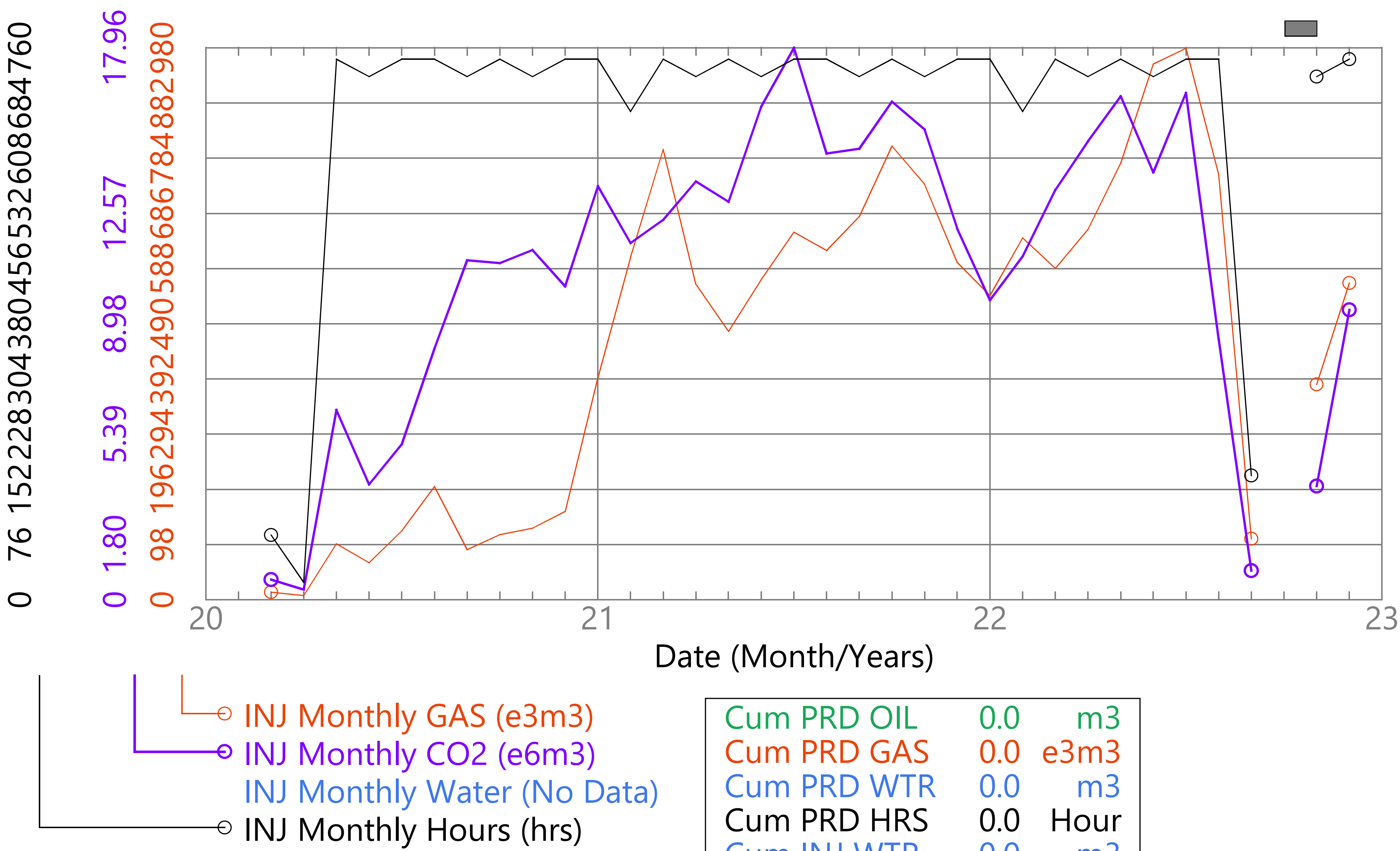
Data As Of: 2022-12 (AB)	102/06-01-040-24W4/00	Field: CLIVE (0224)
From: 2020-03	ENHANCEENERGY CLIVE 6-1-40-24	Pool: D-3 A (0720001)
To: 2022-12	Carbon Dioxide Injection	Unit: Clive D-3a Unit No. 1



Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	39.5	e3m3

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 103/16-02-040-24W4/00 | Field: CLIVE (0224)
From: 2020-03 | ENHANCEENERGY CLIVE 16-2-40-24 | Pool: D-3 A (0720001)
To: 2022-12 | Carbon Dioxide Injection | Unit: Clive D-3a Unit No. 1

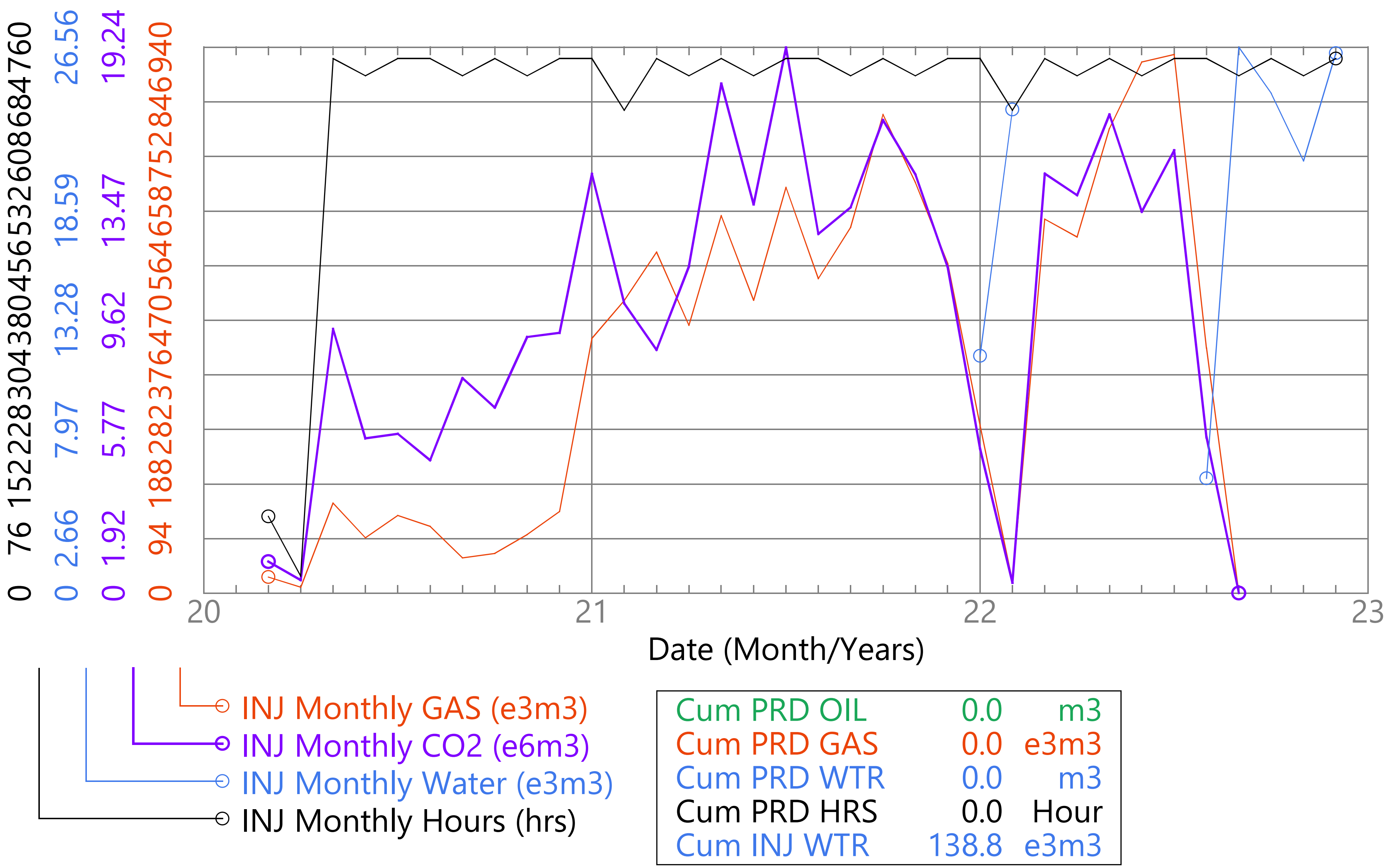


Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	0.0	m3

geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB)	100/01-03-040-24W4/00	Field: CLIVE (0224)
From: 2020-03	ENHANCEENERGY CLIVE 1-3-40-24	Pool: D-3 A (0720001)
To: 2022-12	Carbon Dioxide Injection	Unit: Clive D-3a Unit No. 1



Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	138.8	e3m3

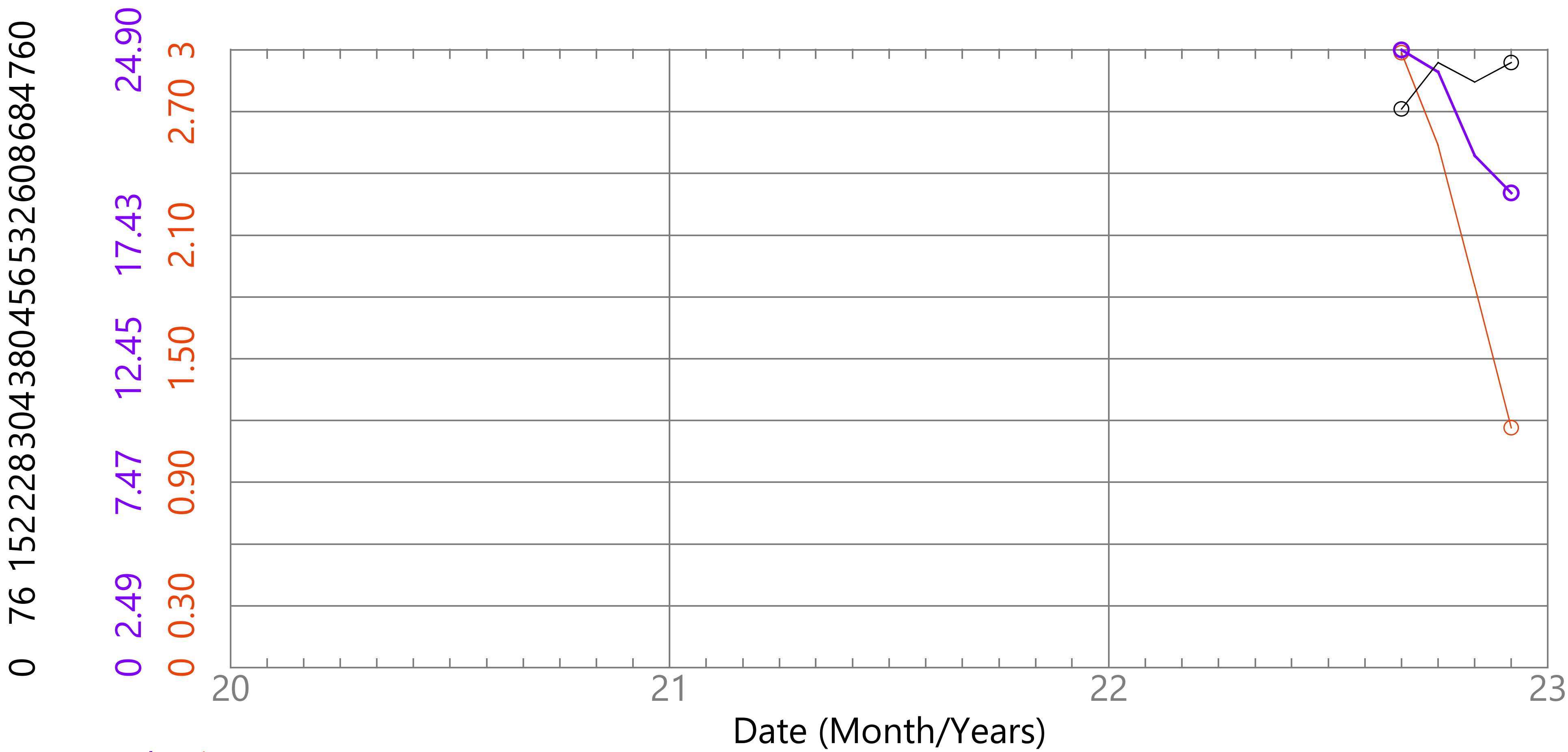
geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 102/16-10-040-24W4/00 | Field: CLIVE (0224)

From: 2022-09 | ENHANCEENERGY CLIVE 16-10-40-24 | Pool: D-3 A (0720001)

To: 2022-12 | Carbon Dioxide Injection | Unit: Clive D-3a Unit No. 1



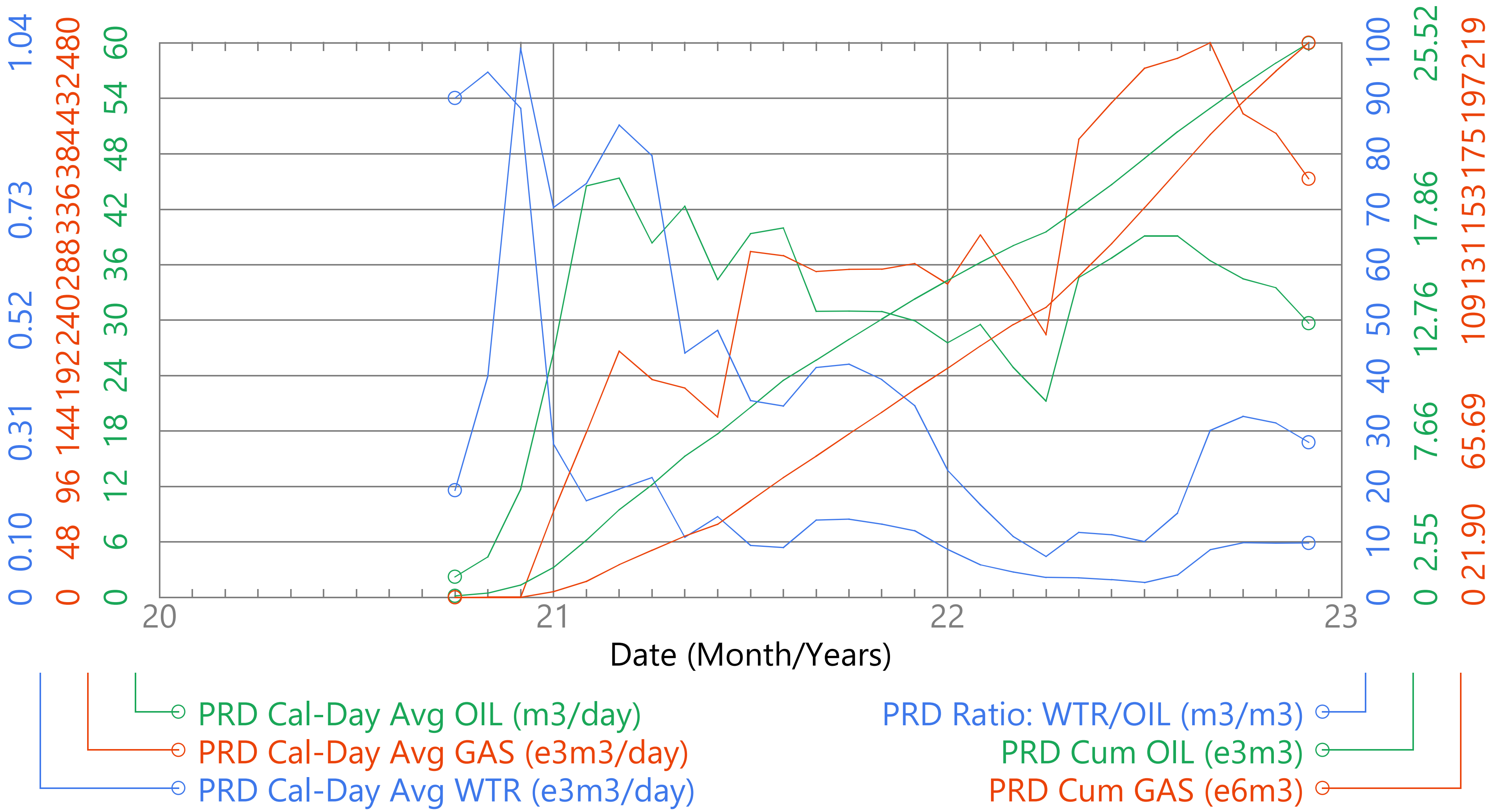
INJ Monthly GAS (e6m3)
INJ Monthly CO2 (e6m3)
INJ Monthly Water (No Data)
INJ Monthly Hours (hrs)

Cum PRD OIL	0.0	m3
Cum PRD GAS	0.0	e3m3
Cum PRD WTR	0.0	m3
Cum PRD HRS	0.0	Hour
Cum INJ WTR	0.0	m3

geoSCOUT www.geologic.com

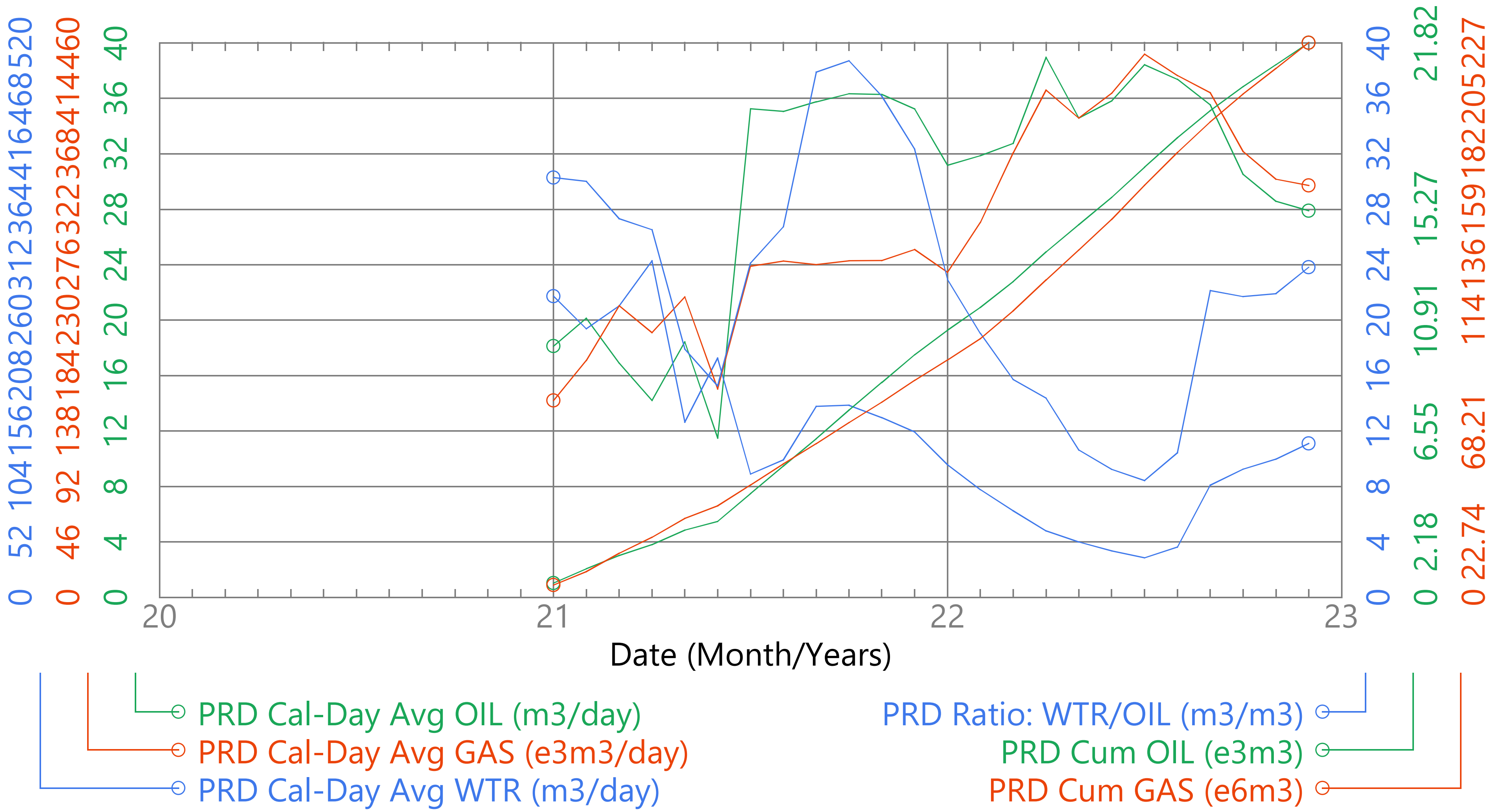
INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 100/10-27-039-24W4/00 | Field: CLIVE (0224)
From: 2020-10 | ENHANCEENERGY CLIVE 10-27-39-24 | Pool: D-3 A (0720001)
To: 2022-12 | Flowing Crude Oil | Unit: Clive D-3a Unit No. 1



INDIVIDUAL PRODUCTION/INJECTION

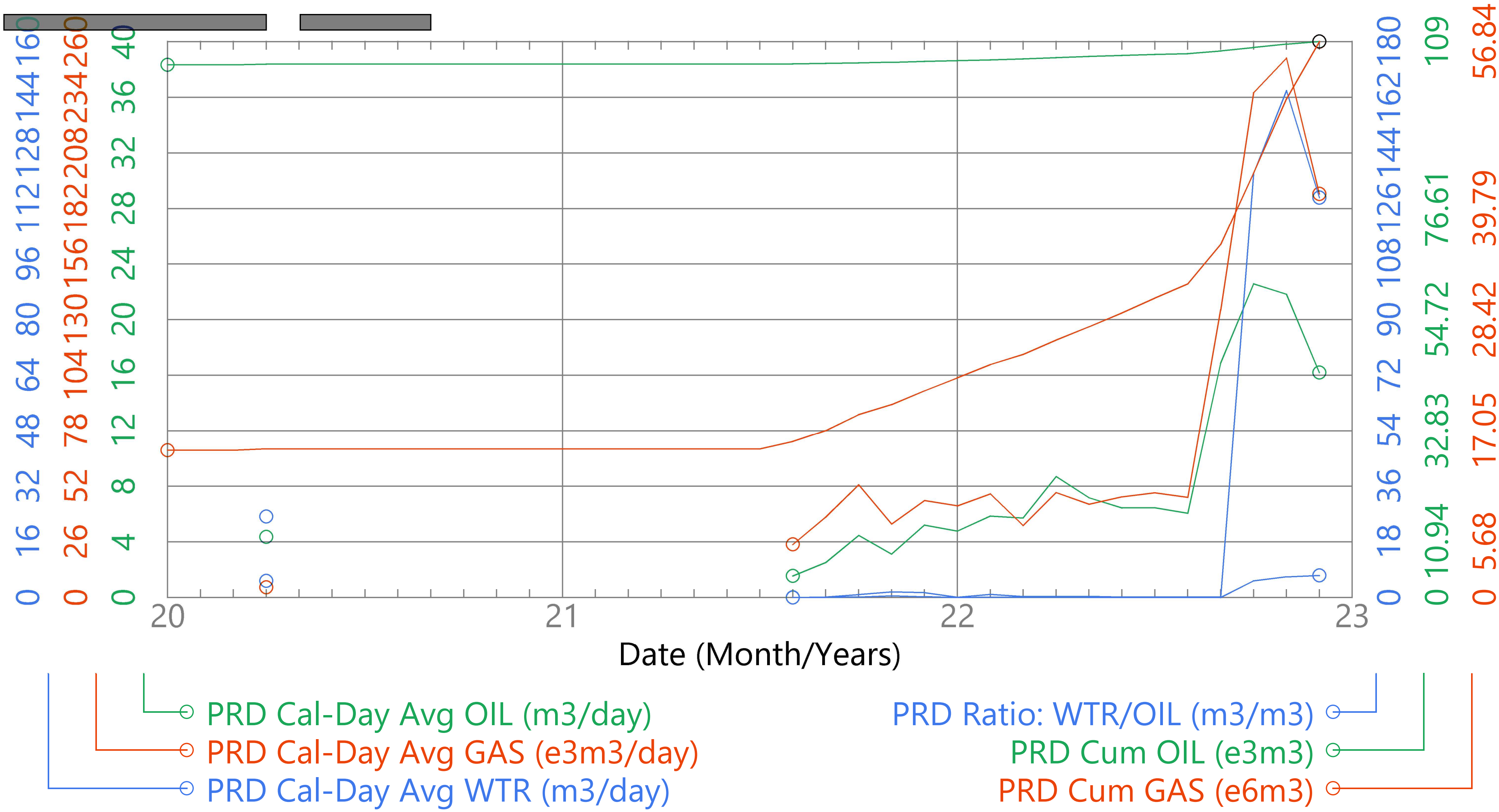
Data As Of: 2022-12 (AB) | 100/07-34-039-24W4/00 | Field: CLIVE (0224)
From: 2021-01 | ENHANCEENERGY CLIVE 7-34-39-24 | Pool: D-3 A (0720001)
To: 2022-12 | Flowing Crude Oil | Unit: Clive D-3a Unit No. 1



geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

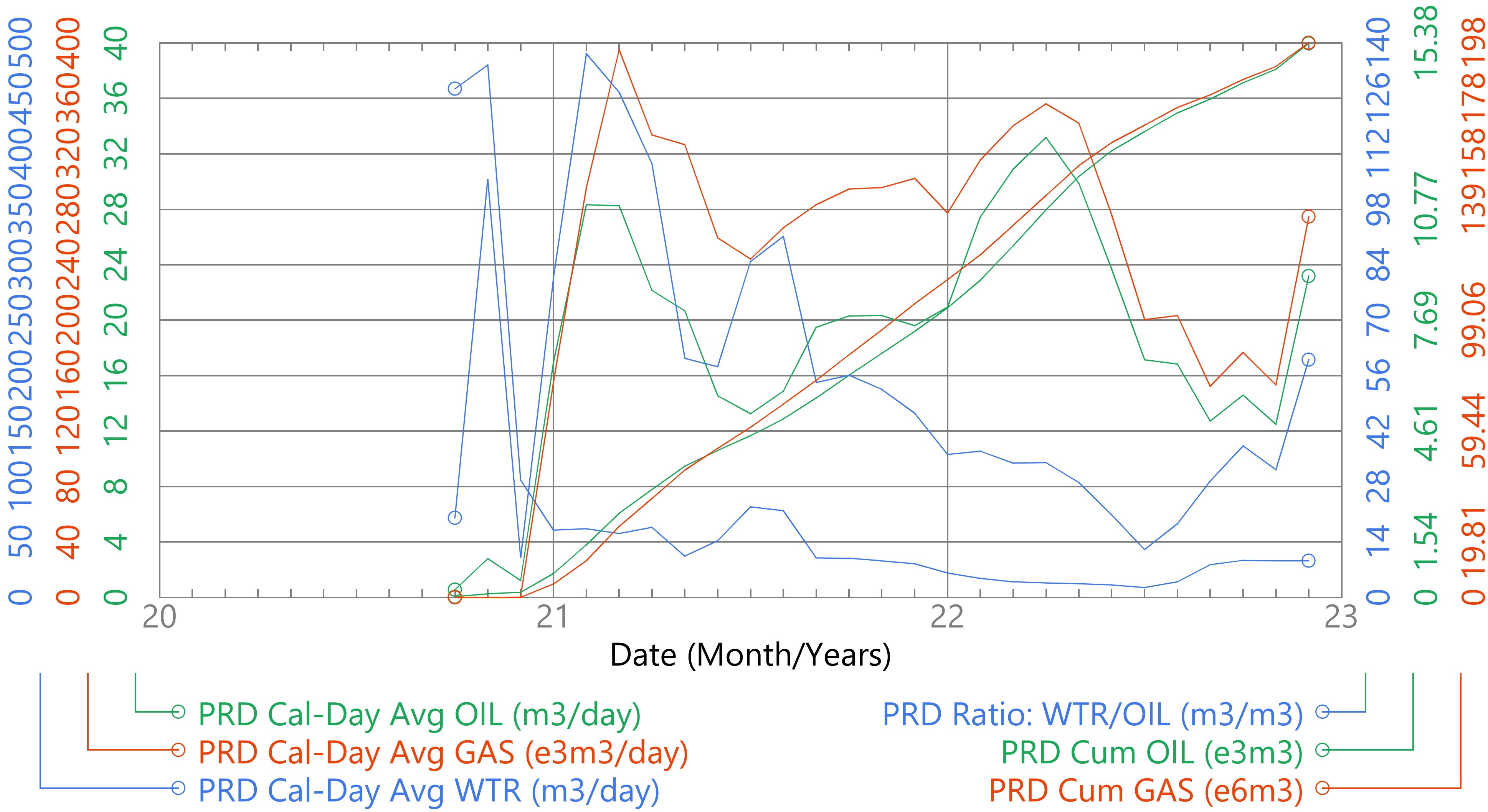
Data As Of: 2022-12 (AB) | 100/10-35-039-24W4/00 | Field: CLIVE (0224)
From: 1966-03 | ENHANCEENERGY CLIVE 10-35-39-24 | Pool: D-3 A (0720001)
To: 2022-12 | Pumping Crude Oil | Unit: Clive D-3a Unit No. 1



geoSCOUT www.geologic.com

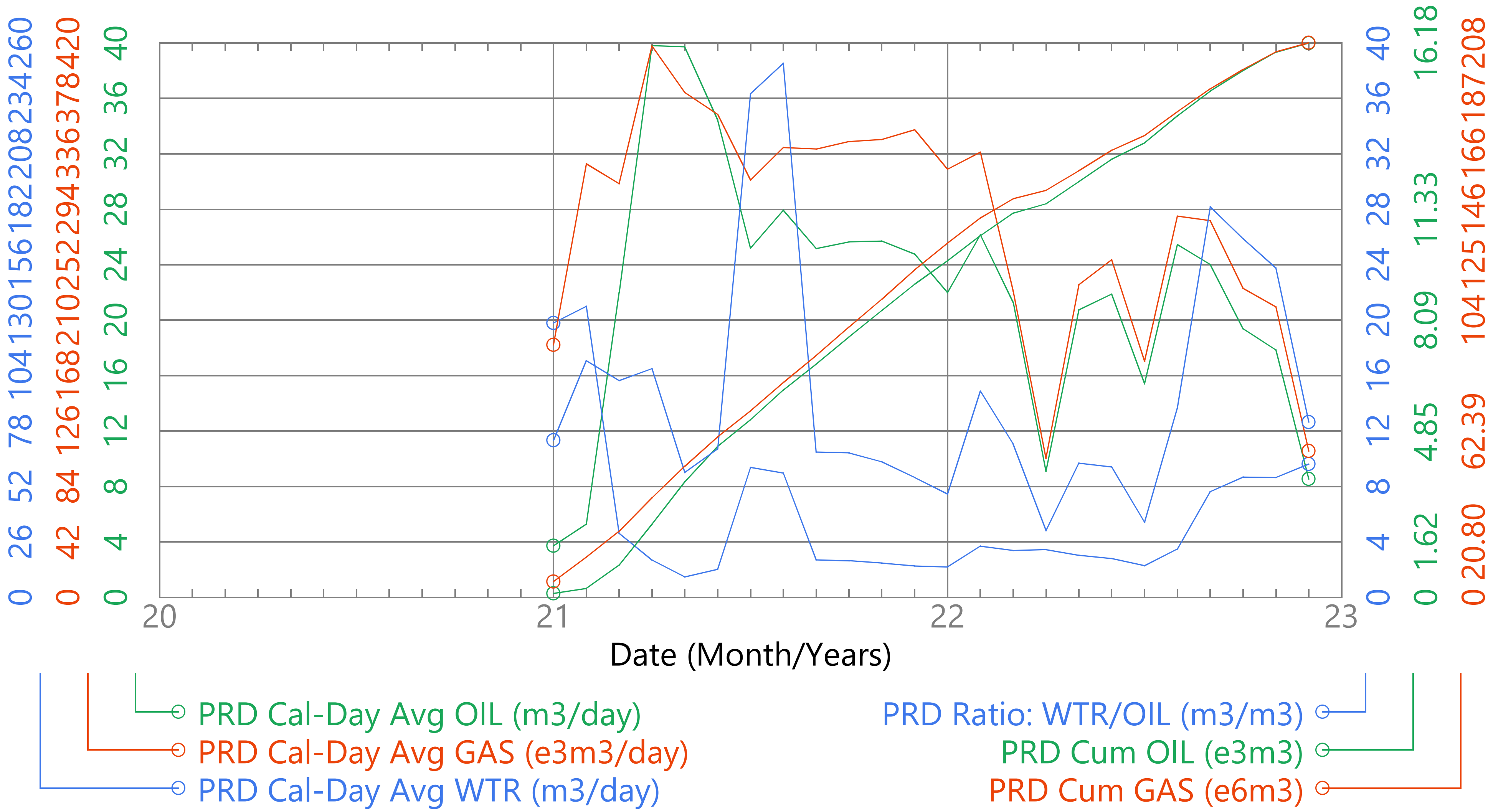
INDIVIDUAL PRODUCTION/INJECTION

Data As Of: 2022-12 (AB) | 100/03-01-040-24W4/00 | Field: CLIVE (0224)
From: 2020-10 | ENHANCEENERGY CLIVE 3-1-40-24 | Pool: D-3 A (0720001)
To: 2022-12 | Flowing Crude Oil | Unit: Clive D-3a Unit No. 1



INDIVIDUAL PRODUCTION/INJECTION

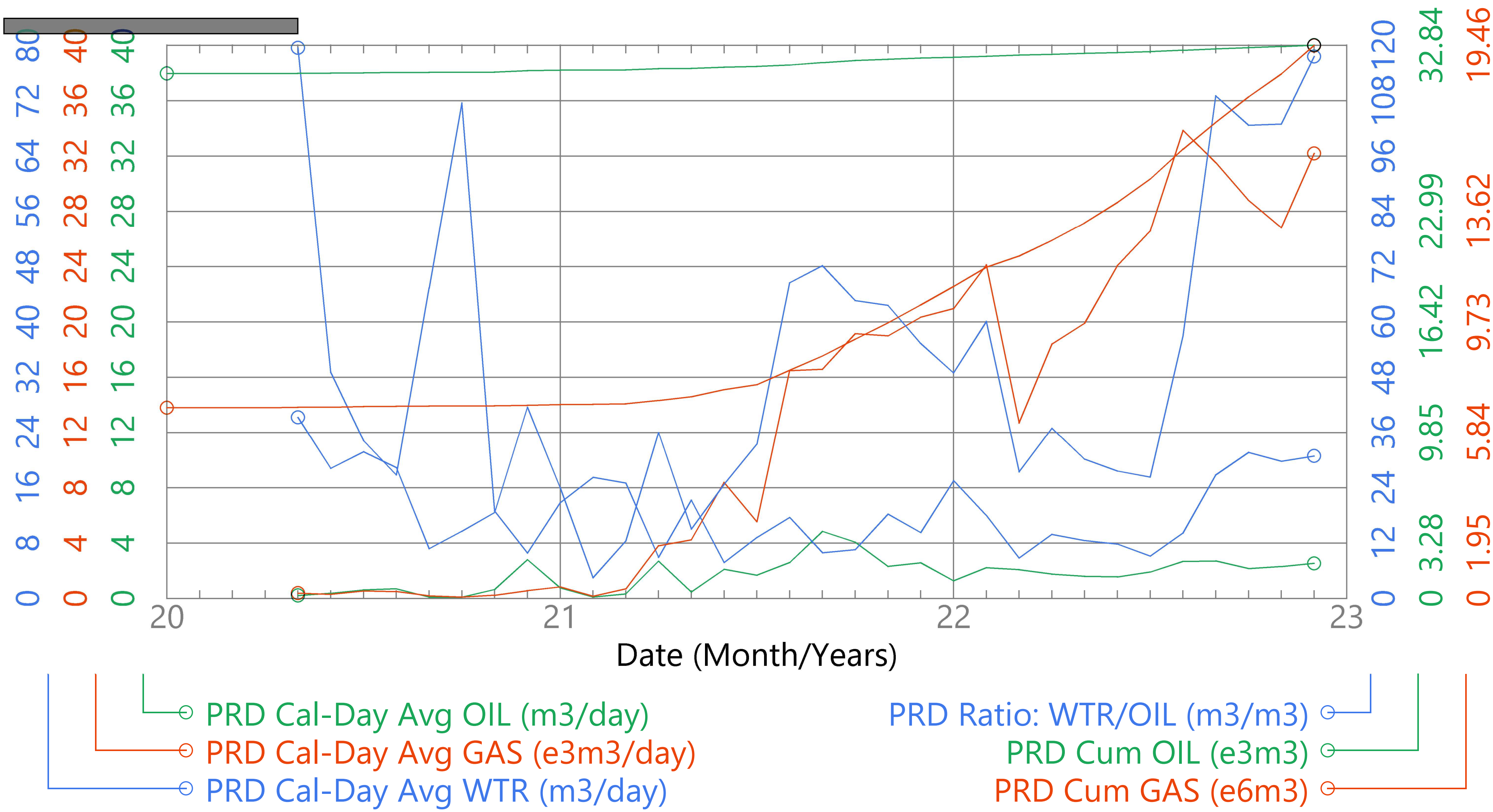
Data As Of: 2022-12 (AB) | 100/14-01-040-24W4/00 | Field: CLIVE (0224)
From: 2021-01 | ENHANCEENERGY CLIVE 14-1-40-24 | Pool: D-3 A (0720001)
To: 2022-12 | Flowing Crude Oil | Unit: Clive D-3a Unit No. 1



geoSCOUT www.geologic.com

INDIVIDUAL PRODUCTION/INJECTION

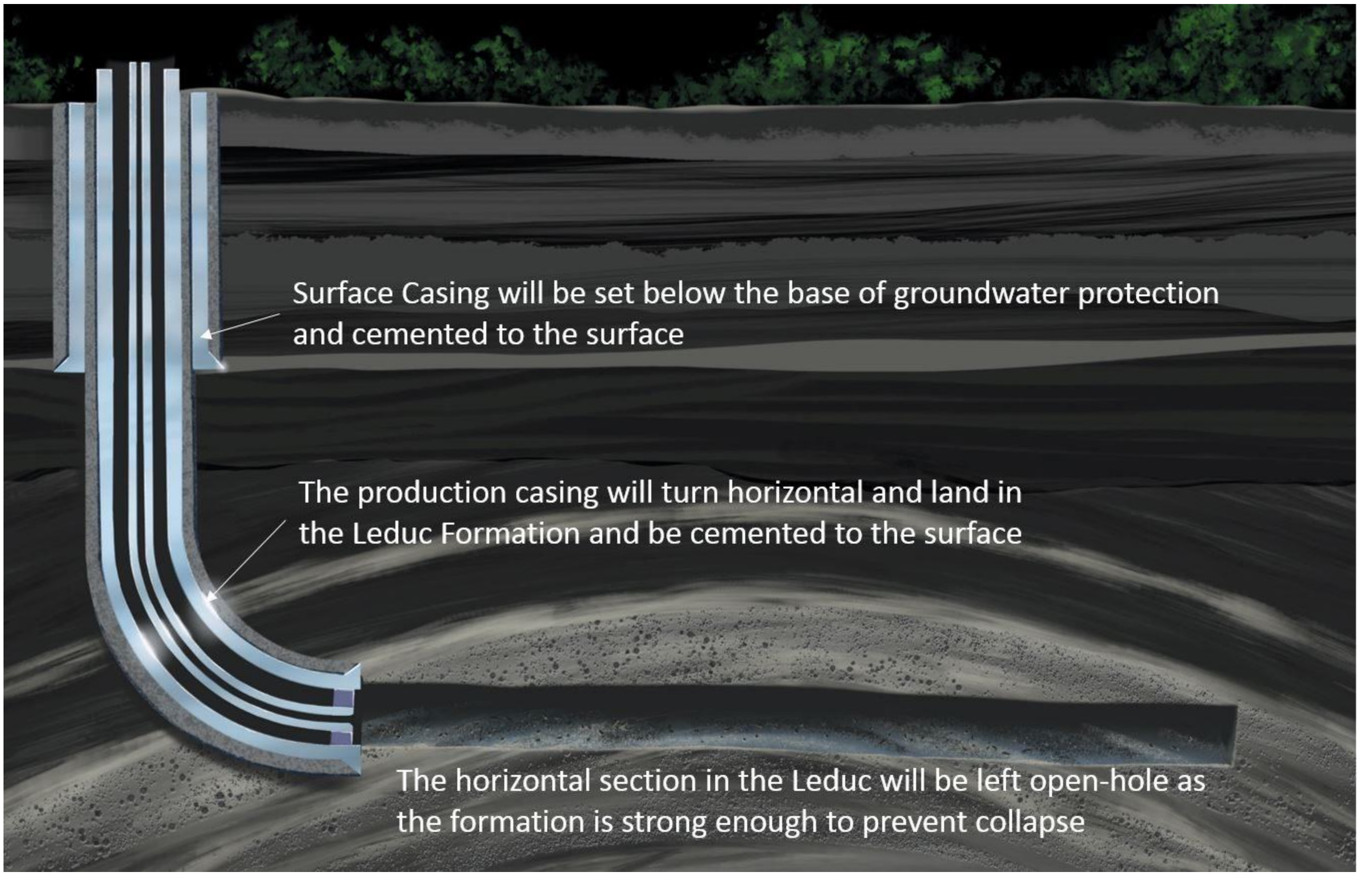
Data As Of: 2022-12 (AB) | 100/16-03-040-24W4/02 | Field: CLIVE (0224)
From: 1966-08 | ENHANCEENERGY CLIVE 16-3-40-24 | Pool: D-3 A (0720001)
To: 2022-12 | Pumping Crude Oil | Unit: Clive D-3a Unit No. 1



geoSCOUT www.geologic.com

APPENDIX VIII- Clive Injection Well Drilling and Completion Records

Submitted on March 31, 2023



Clive CO_2 Injection Well Schematic

Alberta Energy Regulator

Well Drilling Completion Data
Submission Report

Submission ID:	2159022
Submission Status:	Accepted
Submission Date:	Monday, July 18, 2022 10:27:20 AM

ACCOUNT DETAILS

Company Code:	A216
Company Name:	Enhance Energy Inc.
Contact Name:	Kevin Meyer (KMeyer1000)
Contact Phone:	403-984-0206
Contact Fax:	403-984-0226
Contact Email:	kmeyer@enhanceenergy.com

LICENCE OPERATION

Licence Number	0499729
Operation Start Date	20220618
Operation End Date	20220714
Submitter Reference	1-15

WELL OPERATION 1

Drilling Operation		Completion Operation	Y
Deepening Operation		Preset Operation	

UNIQUE WELL IDENTIFIER

SS	LE	LSD	SEC	TWP	RGE	EW	M	ES
1	02	16	10	040	24	W	4	0

WELL INCIDENTS (1)

WELL INCIDENT 1

Occurrence Type Code	99	Controlled Date	
Operation InProgress Code		Controlled Depth	
occurrenceDate	20220714	Controlled Mud Density	
Occurrence Depth		Lost Circulation Total Fluid	
Occurrence Mud Density			

PACKERS (2)

PACKER 1

Packer Date	20220708	Packer Code	
Packer Operation	P	Packer Depth	2127.0
Packer To Modify Date		Packer To Modify Code	
Packer To Modify Depth			

PACKER 2

Packer Date	20220713	Packer Code	1
Packer Operation	S	Packer Depth	2127.4
Packer To Modify Date		Packer To Modify Code	
Packer To Modify Depth			

Well Drilling Completion Data
Submission Report

Submission ID:	2153721
Submission Status:	Accepted
Submission Date:	Tuesday, June 7, 2022 3:06:51 PM

ACCOUNT DETAILS

Company Code:	A216
Company Name:	Enhance Energy Inc.
Contact Name:	Kevin Meyer (KMeyer1000)
Contact Phone:	403-984-0206
Contact Fax:	403-984-0226
Contact Email:	kmeyer@enhanceenergy.com

LICENCE OPERATION

Licence Number	0499729
Operation Start Date	20220517
Operation End Date	20220602
Submitter Reference	1-15

WELL OPERATION 1

Drilling Operation	Y	Completion Operation	Y
Deepening Operation		Preset Operation	

UNIQUE WELL IDENTIFIER

SS	LE	LSD	SEC	TWP	RGE	EW	M	ES
1	00	01	15	040	24	W	4	0

DRILLING

Drilling Contractor Code	0ZG2	Rig Release Date	20220602
Rig Number	10	Kelly Bushing Elevation	908.4
Spud Date	20220517	Total Depth	3456.0
Finished Drilling Date	20220531	Initial Status Code	1

CASINGS (2)

CASING 1

Casing Date	20220519	Casing Grade Yield Strength	55
Casing Code	2	Casing Density	53.6
Casing Liner Outside Diameter	244.5	Shoe Set Depth	646.5
Casing Grade Steel Process	J	Liner Top Depth	

CEMENTINGS (1)

CEMENTING 1

Cement Code	3	Interval Top	0.0
Cement Amount	28	Interval Base	646.5
Cement UnitCode	2		

CASING 2

Casing Date	20220526	Casing Grade Yield Strength	80
Casing Code	3	Casing Density	34.2
Casing Liner Outside Diameter	177.8	Shoe Set Depth	2150.0
Casing Grade Steel Process	L	Liner Top Depth	

CEMENTINGS (3)

CEMENTING 1

Cement Code	42	Interval Top	1600.0
Cement Amount	14.8	Interval Base	2150.0
Cement UnitCode	2		

CEMENTING 2

Cement Code	42	Interval Top	661.2
Cement Amount	36.8	Interval Base	1600.0
Cement UnitCode	2		

CEMENTING 3

Cement Code	42	Interval Top	0.0
Cement Amount	13.3	Interval Base	661.2
Cement UnitCode	2		

KICKOFFS (2)

KICKOFF 1

KickOff Date	20220517	KickOff Reason Code	1
KickOff Depth	202.0		

KICKOFF 2

KickOff Date	20220524	KickOff Reason Code	4
KickOff Depth	2066.9		

WELL INCIDENTS (1)

WELL INCIDENT 1

Occurrence Type Code	99	Controlled Date	
Operation InProgress Code		Controlled Depth	
occurrenceDate	20220602	Controlled Mud Density	
Occurrence Depth		Lost Circulation Total Fluid	
Occurrence Mud Density			

COMPLETIONS (1)

COMPLETION 1

Completion Date	20220531	Cement Amount	
Operation Type Code	8	Cement Unit Code	
Interval Top	2150.0	Abandonment Code	
Interval Base	3456.0	Log Tag Code	
Shots Per Metre			

PACKERS (1)

PACKER 1

Packer Date	20220601	Packer Code	2
Packer Operation	S	Packer Depth	2127.0
Packer To Modify Date		Packer To Modify Code	
Packer To Modify Depth			

Well ID: **102/16-10-040-24W4/00 [CA-AB]**
Name: ENHANCEENERGY CLIVE 16-10-40-24
Profile: **Horizontal**, Has Survey

Status: Act CO2 Inj
Lahee: SVC
geoLOGIC Prd/Inj Forn **Dleduc**

Current Operator: Enhance Enrg Inc
Original Operator: Enhance Enrg Inc
Facility Operator: Enhance Enrg Inc

License #: 0499729
Date: 2021/03/30
Lic Substance: Gas

Govt KB: 908.4m GL: 903.6m MD: 3456.0m TVD: 1928.0m
LL: 1389.1m
Fm@TD: Dleduc Proj Fm@TD: Dleduc Proj Depth: 3986.0m
Spud Date: 2022/05/17 Compl Drl: 2022/05/31 Days: 15 RR: 2022/06/02
Drilling Rig: Excalibur Drlg Ltd #10
Status: 2021/03/30 Licenced; 2022/05/31 Drl&Cased; 2022/09/01 Act CO2 Inj

Casing:

Type	Size (mm)	Depth (m)	Weight (kg/m)	Grade
SRF	244.5	646.5	53.6	J055
INT	177.8	2150.0	34.2	L080

Logs: N (– 2127.0m), LITHO (2150.0 – 3456.0m), LITHO (1990.0 – 2150.0m), GR (646.0 – 3456.0m), N (– 1923.2m), CB (3.5 – 2127.3m), TEMPL (0.0 – 2192.0m), GR (646.0 – 1923.2m)

Location

BH Coordinates: N 1397.6m SW 10-040-24W4
E 1333.4m
SH Location: 08-09-040-24W4
SH Coordinates: N 525.4m SE 09-040-24W4
W 60.3m

BH Lat: 52.43216 deg N
BH Lon: 113.36766 deg W
SH Lat: 52.42433 deg N
SH Lon: 113.38843 deg W

Formation Tops

geoSCOUT Ref Elev(m): +908.4

Formation	TVD (m)	Elev (m)	MD (m)	N Pay
Kbearpaw	615.2	+293.2	616.3	
Kbelly_rv	644.8	+263.6	646.0	
Kbsbrv_ss	861.2	+47.2	862.4	
Klea_park	870.9	+37.5	872.1	
Kmilk_rv	916.3	-7.9	917.5	
Kcolorado	1032.0	-123.6	1033.2	
K2nd_ws	1289.7	-381.3	1290.9	
Kbfs	1390.7	-482.3	1391.9	
Kviking	1423.2	-514.8	1424.4	
Kvik_ss	1434.5	-526.1	1435.7	
Kjoli_fou	1458.3	-549.9	1459.5	
Kmannvl	1479.6	-571.2	1480.8	
Kglauc_ss	1594.9	-686.5	1597.2	
Kostracod	1610.7	-702.3	1613.3	
Kellrslie	1622.0	-713.6	1624.8	
Dwabamun	1710.9	-802.5	1719.8	
Dcalmar	1864.2	-955.8	1923.0	
Dnisku	1872.6	-964.2	1938.0	
Direton	1908.4	-1000.0	2025.8	
Dleduc	1922.5	-1014.1	2131.3	

Completions

Date	Interval	Type	Subtype	Formation
2022/05/31	2150.0 – 3456.0m	OpenHole		Dleduc
2022/07/13	2127.4m	Treat	Packer	Direton

Production Summary

Proprietary Data Available: No

Field: CLIVE[0224]
Pool: D-3 A[0720001]
Unit: Clive D-3a Unit No. 1 [02096]
Facility: IF0156447

Status: Act CO2 Inj
Prd/Inj Form: **Dleduc**
On:
Operator: Enhance Enrg Inc
On: 2022/09/01

Injection Dates	Injection Product	Cumulative Injection
2022/09-2022/12	Gas	8,537 e3m3
2022/09-2022/12	Carbon Dioxide	88,633 e3m3

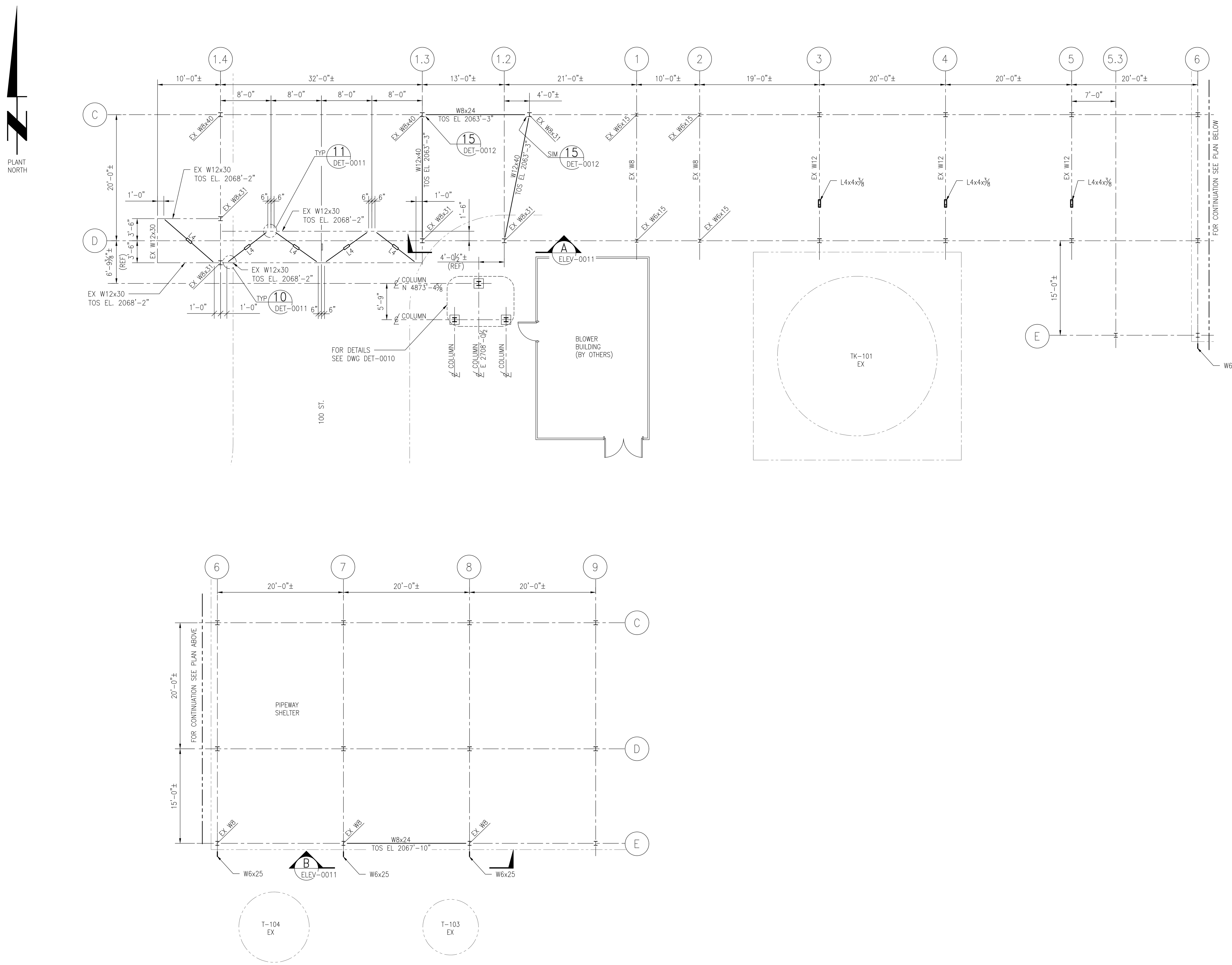
No IP Tests, Core Summary, Oil Zone Pressure Tests, AOFPs/Pressure Tests or DSTs/Formation Tests reported.

Note: Locational information is presented using the NAD 83 datum.

Well ID:	**102/16-10-040-24W4/00 [CA-AB]**	Status:	Act CO2 Inj
Name:	ENHANCEENERGY CLIVE 16-10-40-24	Lahee:	SVC
Profile:	**Horizontal**, Has Survey	geoLOGIC Prd/Inj Forn	**Dleduc**

APPENDIX IX- Plant #1 Tie-In Design Materials **Submitted on March 31, 2023**

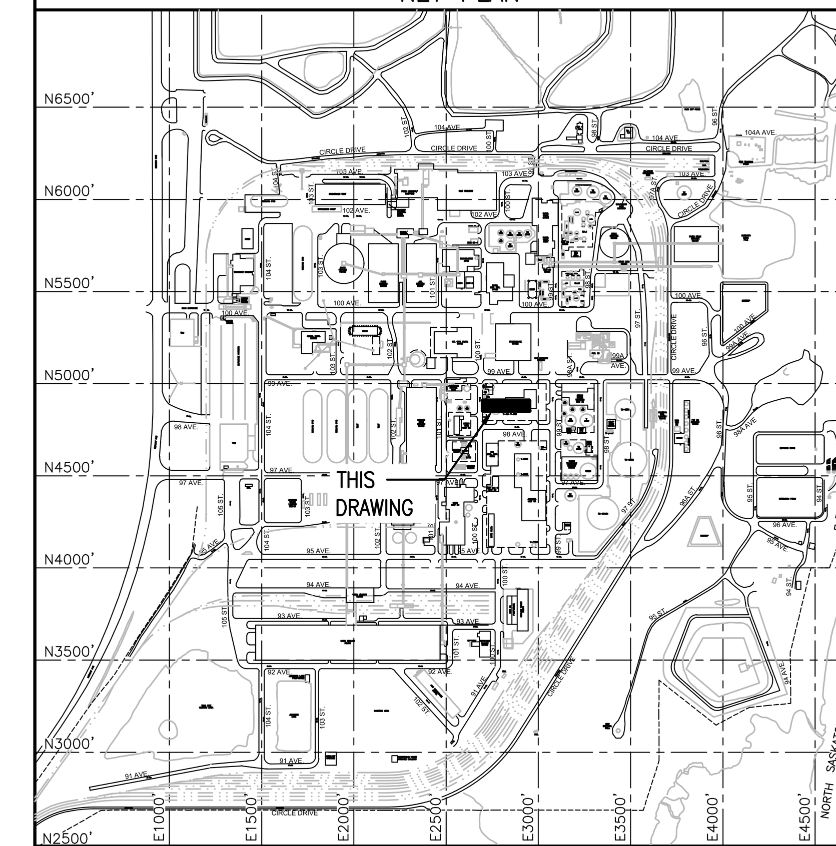
Redwater CO_2 Recovery Unit



PLAN – MISC SUPPORTS

1/8" = 1'-0"
(FOR GRID ELEVATIONS SEE DWG ELEV-0010 & 0011)
L4 = L4x4x3/8

KEY PLAN



GENERAL NOTES:

1. ALL COORDINATES, DIMENSIONS AND ELEVATIONS ARE IN FEET AND INCHES.
2. ALL EXISTING INFORMATION, COORDINATES, DIMENSIONS AND ELEVATIONS HAVE BEEN DERIVED FROM LASER SCAN 19-051_Nutrien Rock COMPLETED BY MIRACAD TECHNOLOGIES INC. IN AUGUST 2019.
3. ALL EXISTING ELEVATIONS AND DIMENSIONS SHALL BE FIELD CHECKED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORK.
4. ALL WORK SHALL BE DONE IN ACCORDANCE WITH THE FOLLOWING NUTRIEN SPECIFICATIONS UNO:
   - EP-4-5-1 STRUCTURAL STEEL
   - EP 10-3-1 SHOP AND FIELD COATING
   - IHM-CHM-03.04.01 LEAD MANAGEMENT PROGRAM
5. ALL STEEL SHALL BE CARBON STEEL UNO.
6. FOR CARBON STEEL GENERAL NOTES SEE DWG. 07-S-D-22904-01.
7. ALL STEEL SHALL BE PRIMED AND PAINTED.
   A) SHOP APPLICATION
      - SURFACE PREPARATION: AS PER MANUFACTURER SPECIFIED REQUIREMENTS
      - PRIMER: 2.0-3.0mil DFT RED OXIDE PRIMER 71330 BY CLOVERDALE OR APPROVED EQUAL. FOLLOW MANUFACTURER'S INSTRUCTIONS.
      - PAINT: TOP COAT TO COLOR MATCH EXISTING STRUCTURAL GREY OR RED. CONTRACTOR TO ADVISE IF REQUIRED.
   B) FIELD TOUCH-UP
      - SURFACE PREPARATION: AS PER MANUFACTURERS SPECIFIED REQUIREMENTS
      - PRIMER: COLD GALVANIZING AEROSOL COMPOUND SPRAY
      - PAINT: TOP COAT TO COLOR MATCH EXISTING STRUCTURAL GREY OR RED. CONTRACTOR TO ADVISE IF REQUIRED.

Rev.	Date	Project Revision	Des.	Chk.	Eng.	App.
0	14NOV22	ISSUED FOR CONSTRUCTION (PPM# 1006206)	BS	DY	EJ	DAC
A	24OCT22	ISSUED FOR REVIEW (PPM# 1006206)	BS	DY	EJ	DAC

Rally Engineering Inc.

THIS DRAWING WAS PREPARED SOLELY FOR THE USE OF THE OWNER, RALLY ENGINEERING INC. AND ITS AFFILIATES ("RALLY"). RALLY ASSUMES NO LIABILITY TO ANY OTHER PARTY FOR ANYTHING CONTAINED IN OR OMITTED FROM THIS DRAWING OR FOR ITS USE FOR ANY OTHER PURPOSE.

Reference Drawings

Drawing No.	Description
21E-M-5	PIPEWAY STANCHION FRAMES SHT.2
21E-M-1	PIPEWAY STANCHIONS PLAN SHT.1
1E-M-17	UNIT NO 1 AMMONIA UNIT PIPEWAY SHELTER SHT. 1
22E-M-1010	INTERCONNECTING PIPING PLAN, SECTIONS & DETAILS
1E-M-61	UNIT NO 1 AMMONIA UNIT PIPEWAY ISOMETRIC

Rev.	Date	Revision	Dwn.	Chk.	App.

PROFESSIONAL ENGINEER HUA JING ID 96863 ALBERTA

Rev 0 Only
2022-11-16

PERMIT TO PRACTICE
RALLY ENGINEERING INC.
RM SIGNATURE:
RM APEGA ID: 55787
DATE: 16 Nov. 2022
PERMIT NUMBER: P09247
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)

enhance Nutrien Feeding the Future REDWATER ALBERTA

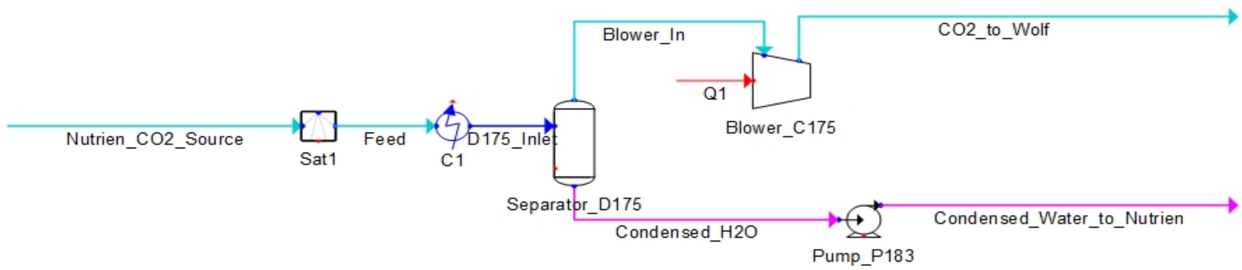
AREA 11 UNIT 01 AMMONIA PLANT
MISCELLANEOUS PIPE SUPPORTS
PLANS

Dwn.: BS	Chk'd.: DY	Drawing No.: 01-S-PLOT-0004	Rev. 0
App'd: DAC	Date: 27SEP22		SRev.
Project: PPM# 1006206			
Scale: AS NOTED		Sheet of	

01-S-PLOT-0004.dwg 15-Nov-22

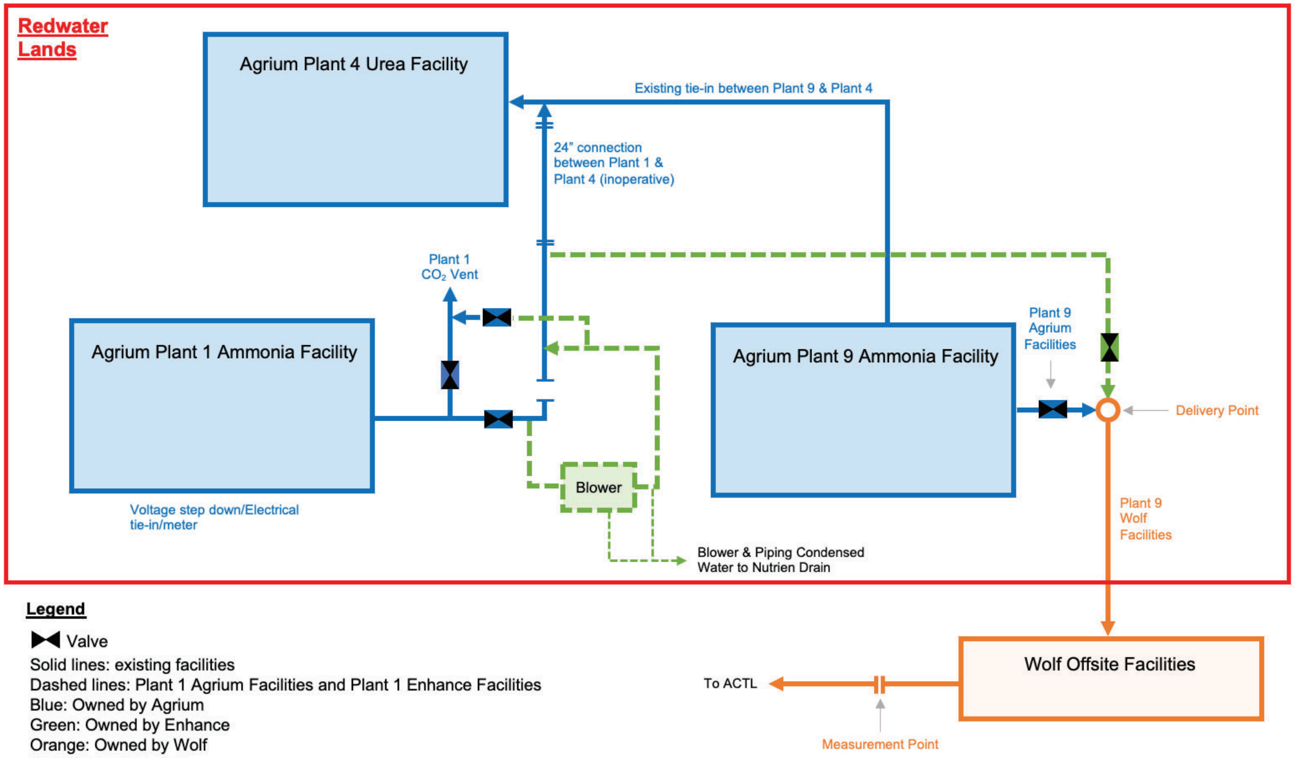
	Nutrien_CO2_Source	Feed	D175_Inlet	Blower_In	Condensed_H2O	Condensed_Water_to_Nutrien	CO2_to_Wolf
In.VapFrac	1.00	1.00	0.9770	1.00	0.00	0.00E+00	1.00
In.T [F]	160.0	160.0	155.0	155.0	155.0	155.0	230.0
In.P [psia]	15.20	15.20	14.20	14.20	14.20	50.00	21.70
In.Mole Flow [lbmol/h]	1782.20	2589.97	2589.97	2530.28	59.69	59.69	2530.28
In.Mass Flow [lb/h]	77917.00	92469.19	92469.19	91393.59	1075.60	1075.60	91393.59
In.Volume Flow [ft3/s]	215.793	312.993	324.795	324.790	0.005	0.005	238.388
In.Mole Fraction [Fraction]							
WATER	0.00	0.3119	0.3119	0.2957	0.9998	0.9998	0.2957
HYDROGEN	0.0050	0.0034	0.0034	0.0035	5.12E-08	5.12E-08	0.0035
HELIUM-4	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00
NITROGEN	0.0050	0.0034	0.0034	0.0035	2.68E-08	2.68E-08	0.0035
CARBON DIOXIDE	0.9900	0.6812	0.6812	0.6973	1.57E-04	1.57E-04	0.6973
In.Std Liq Volume Flow [ft3/s]	0.429	0.494	0.494	0.489	0.005	0.005	0.489
In.Std Gas Volume Flow [MMSCFD]	1.6232E+1	2.3588E+1	2.3588E+1	2.3045E+1	5.4365E-1	5.4365E-1	2.3045E+1
In.Energy [Btu/h]	8.273E+6	1.224E+7	1.104E+7	1.184E+7	-8.005E+5	-8.004E+5	1.354E+7
In.H [Btu/lbmol]	4641.9	4725.8	4261.0	4677.9	-13410.9	-13408.4	5352.7
In.MW	43.72	35.70	35.70	36.12	18.02	18.02	36.12
In.Mass Density [lb/ft3]	0.1003	0.0821	0.0791	0.0782	61.0654	61.0677	0.1065
In.Cp [Btu/lbmol-F]	9.337	8.985	9.196	8.982	18.254	18.253	9.267
In.Thermal Conductivity [Btu/h-ft-F]	0.0124	0.0127	0.0168	0.0125	0.3790	0.3790	0.0146
In.Viscosity [cP]	1.7094E-2	1.5023E-2	1.6882E-2	1.5014E-2	4.1347E-1	4.1340E-1	1.6664E-2
In.Molar Volume [ft3/lbmol]	435.897	435.054	451.457	462.101	0.295	0.295	339.171
In.Z Factor	0.9964	0.9946	0.9720	0.9949	7.57E-04	0.0027	0.9946
In.Mass Fraction [Fraction]							
WATER	0.00	0.1574	0.1574	0.1475	0.9996	0.9996	0.1475
HYDROGEN	2.31E-04	1.94E-04	1.94E-04	1.97E-04	5.73E-09	5.73E-09	1.97E-04
HELIUM-4	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
NITROGEN	0.0032	0.0027	0.0027	0.0027	4.17E-08	4.17E-08	0.0027
CARBON DIOXIDE	0.9966	0.8397	0.8397	0.8496	3.83E-04	3.83E-04	0.8496
In.Std Liq Vol Fraction [Fraction]							
WATER	0.00	0.1312	0.1312	0.1227	0.9995	0.9995	0.1227
HYDROGEN	0.0058	0.0050	0.0050	0.0051	1.77E-07	1.77E-07	0.0051
HELIUM-4	0.00	0.00	0.00	0.00	0.00E+00	0.00E+00	0.00
NITROGEN	0.0081	0.0071	0.0071	0.0071	1.31E-07	1.31E-07	0.0071
CARBON DIOXIDE	0.9861	0.8568	0.8568	0.8652	4.69E-04	4.69E-04	0.8652
In.MoleFlows [lbmol/h]							
WATER	0.00	807.77	807.77	748.09	59.68	59.68	748.09
HYDROGEN	8.91	8.91	8.91	8.91	0.00	0.00	8.91
HELIUM-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	8.91	8.91	8.91	8.91	0.00	0.00	8.91
CARBON DIOXIDE	1764.38	1764.38	1764.38	1764.37	0.01	0.01	1764.37
In.MassFlows [lb/h]							
WATER	0.00	14552.19	14552.19	13477.00	1075.19	1075.19	13477.00
HYDROGEN	17.96	17.96	17.96	17.96	0.00	0.00	17.96
HELIUM-4	0.00	0.00	0.00	0.00	0.00	0.00	0.00
NITROGEN	249.63	249.63	249.63	249.63	0.00	0.00	249.63
CARBON DIOXIDE	77649.41	77649.41	77649.41	77649.00	0.41	0.41	77649.00
In.StdLiqVolumeFlows [ft3/s]							
WATER	0.000	0.065	0.065	0.060	0.005	0.005	0.060
HYDROGEN	0.002	0.002	0.002	0.002	0.000	0.000	0.002
HELIUM-4	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NITROGEN	0.003	0.003	0.003	0.003	0.000	0.000	0.003
CARBON DIOXIDE	0.423	0.423	0.423	0.423	0.000	0.000	0.423

Enhance Nutrien Plant 1 Blower
Heat and Material Balance
Mar 21 2023



Enhance Nutrien Plant 1 Blower PFD

March 20, 2023



Configuration of Plant 1 tie-in may vary based on final design

Enhance Nutrien Plant 1 Blower Facility Block Diagram
March 21 2023