

# **As Built Report Effluent Water Treatment Plant (EWTP)**

**6205-693-132-REP-003**

In Accordance with Licence 2AM DOH 1335, Part D, item 1

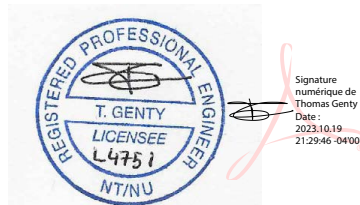
Prepared by:

Agnico Eagle Mines Limited – Hope Bay Division



## DOCUMENT CONTROL

Version	Date (YMD)	Section	Page	Revision
R0	03/10/2022			As Built Report



Prepared By: 2022-10-18

Thomas Genty  
Water Treatment Eng.  
NAPEG L4751

Prepared By: Jack Dutil Digitally signed by Jack Dutil  
DN: cn=Jack Dutil  
Date: 2023.10.23 16:32:54 -04'00'

Construction Superintendent

Approved by: Guy Dufour Digitally signed by Guy Dufour  
Date: 2023.10.24 04:56:06 -06'00'

Guy Dufour  
Environment General Supervisor



## TABLE OF CONTENTS

<b>1</b>	<b>INTRODUCTION .....</b>	<b>5</b>
1.1	Site Location and Access .....	5
1.2	Site Facilities.....	5
1.3	Purpose of the Document.....	5
<b>2</b>	<b>PROCESS DESCRIPTION .....</b>	<b>8</b>
2.1	Water treatment plant (wtP) SUmmary .....	8
2.2	Reactor .....	10
2.3	Actiflo® .....	10
2.4	Reagents & Service Water System .....	10
<b>3</b>	<b>CONSTRUCTION AND COMMISSIONINGSUMMARY .....</b>	<b>12</b>
3.1	Construction Schedule .....	12
3.2	Field decisions that deviate from original design.....	12
3.3	As built drawings and photographs .....	12



## **LIST OF FIGURES**

Figure 1 : General location plan .....	7
Figure 2 : WTP Overall Process Concept .....	9

## **LIST OF APPENDICES**

Appendix A: EWTP As Built Drawings
Appendix B: Pictures
Appendix C: Safety Data Sheets



## **1 INTRODUCTION**

### **1.1 SITE LOCATION AND ACCESS**

The Doris Project is a gold mining and milling undertaking of Agnico Eagle. The Project is located 705 km northeast of Yellowknife and 153 km southwest of Cambridge Bay in Nunavut Territory and is situated east of Bathurst Inlet. Agnico Eagle operated the Doris Project until 2022 under an existing water license. The site is currently under Care & Maintenance.

### **1.2 SITE FACILITIES**

The current mine plan focuses on the development of the Doris gold deposit which is mined using underground mining operations. Current mining facilities to support the mine include a camp for accommodations, tailings storage facility, rock storage facilities, ore pads, process plant, power plant, maintenance facilities, water management treatment plants and supporting water management infrastructure.

### **1.3 PURPOSE OF DOCUMENT**

As required by the Water License, this report summarizes the construction and commissioning work associated with the Effluent Water Treatment Plant (EWTP). The design of the EWTP is presented in the approved design report 6205-693-132-REP-002. Included in this report are:

- A description of the Process;
- Documentation on field decisions that deviate from the original plans;
- Building location;
- Photographs; and
- Safety Data sheets of chemical used in the EWTP.

The present report does not present the construction documentation link to the Pad where the EWTP building is located. A separate As Built Report has been submitted in January 2023 for the pad. Note that this construction report is mainly focused on Building construction and mobilization of the EWTP equipment into a new building.

Construction drawings of the listed infrastructure are presented in appendices of this report. Appendix A presents as built drawing including P&ID and Appendix B Picture of the EWTP.

A general location plan for the project of EWTP is shown in Figure 1.



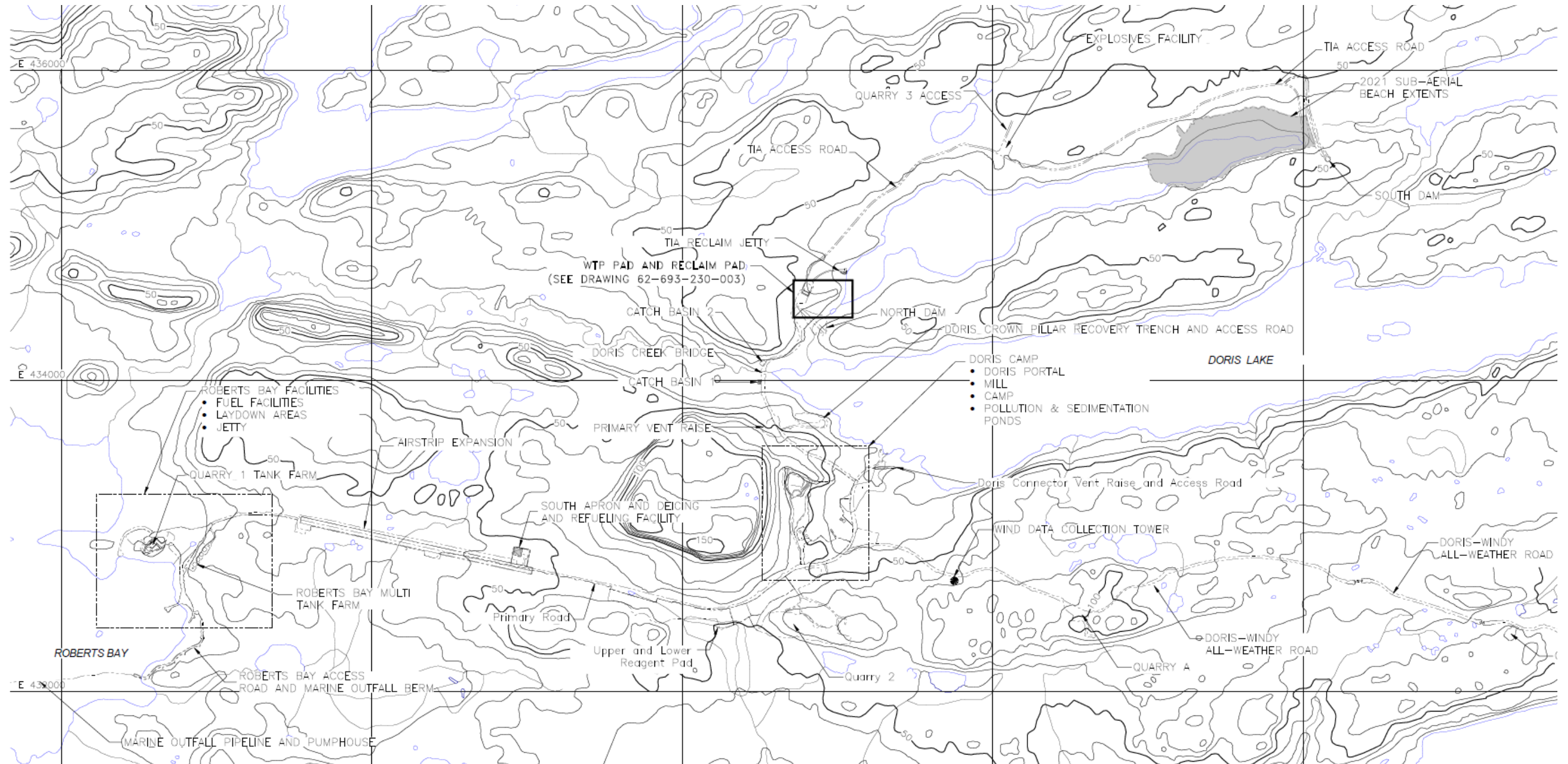


Figure 1 : General location plan



## **2 PROCESS DESCRIPTION**

### **2.1 WATER TREATMENT PLANT (WTP) SUMMARY**

The treatment consists mainly on treating total suspended solid from the Tailing Impoundment Area (TIA) prior to be discharged.

The first treatment component consists of a reactor for coagulation (RX3-75). This reactor could be used in the future to precipitate metal by addition of metal precipitator chemicals.

The second treatment component consists of one Actiflo® clarifier with two (2) recirculation lines and two (2) hydrocyclones. The Actiflo® can be operated with one (1) or two (2) lines, depending on the influent flow rate and TSS content. The hydrocyclone overflow is sent to the sludge splitter box from where sludge is both extracted to the TIA and also partially recirculated the first reactor by overflow. The final effluent is monitored for pH, turbidity and flow rate, which are monitored continuously.

The treatment concept is presented in Figure 2.



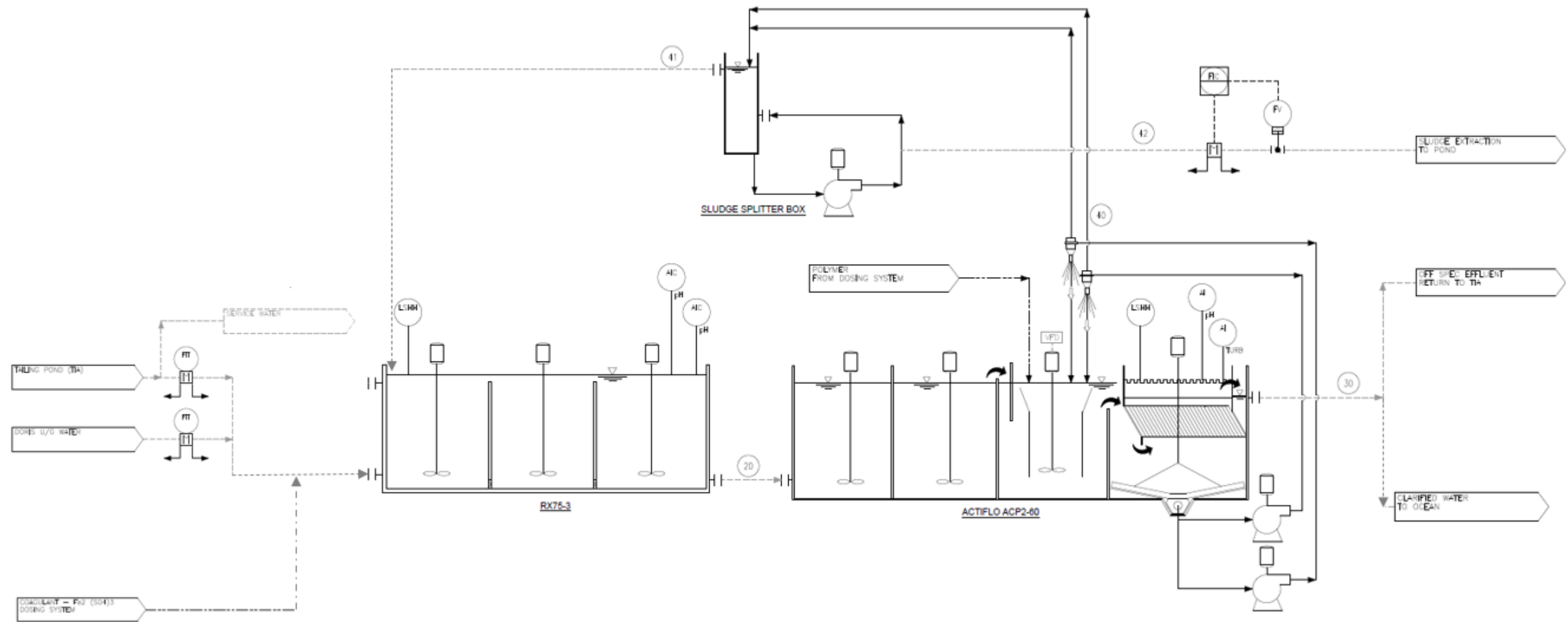


Figure 2 : WTP Overall Process Concept



## 2.2 REACTOR

The purpose of this step is to precipitate the dissolved metals. The influent will be sent to the Metal Removal Reactor. In this reactor, the influent water will be mixed with ferric sulfate (Coagulant) and recycled sludge. The ferric sulfate forms a floc of ferric hydroxide ( $\text{Fe}(\text{OH})_3$ ) which act both as a bridge to tie colloidal particles together and as an active surface which form surface complexes with many metals. To promote metal precipitation in the future, an alkali and a metal precipitator could be added to ensure the optimal removal (not currently included in the current design report).

## 2.3 ACTIFLO®

The water from the metal precipitation reactor will then flow to the ACTIFLO clarifier. The proposed ACTIFLO is designed to remove suspended solids present in the water and produced in the Metal Precipitation Reactor. Sand-ballasted settling is a high-rate coagulation/flocculation/sedimentation process that utilizes microsand as a seed for floc formation. The microsand provides a surface area that enhances flocculation and acts as a ballast or weight. The use of microsand also permits the unit to perform well under dramatically changing flow rates without impacting final effluent quality.

The ACTIFLO has four chambers. The slurry from the precipitation step flows to a pre-coagulation chamber and then to a coagulation chamber where the reaction is completed. The slurry then flows to the maturation tank, where an anionic polymeric flocculant and microsand are added to initiate floc formation. These serve as a “seed” for floc formation and development in the next process step. In this tank, a Turbomix mixer provides ideal conditions for bridging between the microsand and the destabilized suspended solids. The fully formed ballasted floc enters into the last tank, the settling tank, equipped with a lamella, which provides the rapid and effective removal of the microsand/sludge floc. The clarified water exits the system via a weir.

The sand-sludge mixture settles to the bottom of the clarifier. Scrapers force the sludge collected at the bottom of the clarifier into a centre cone from which it is continuously withdrawn and pumped in a hydrocyclone where sludge and microsand are separated by centrifugal force. After separation, the higher density microsand is discharged from the bottom of the hydrocyclone and injected into the process for reuse.

A sludge recirculation is included in the Actiflo design to maximize the sludge efficiency to capture heavy metals and to optimize the chemical product consumption. The ferric hydroxide created in the reactor will slowly transform to hydrous ferric oxide. The hydrous ferrous oxide is the molecule that can adsorb arsenic and copper and that will co-precipitate with it. By recirculating the sludge, we are promoting the hydrous ferrous oxide creation that will capture arsenic and copper in the influent water. The sludge recirculation also optimizes the chemical requirements by recirculating chemicals (like polymers) that don't have to react with water. At any time, this recirculation can be by passed.

## 2.4 REAGENTS & SERVICE WATER SYSTEM

The following reagents will be used at the WTP:

- Coagulant: Ferric sulfate
- Polymer: Anionic
- Sand ballast: Actisand
- pH adjustment: sulphuric acid



The service water system consists of multimedia filter, heater and service water pumps. Service water is used in the preparation of dry chemicals and for polymer makeup systems. Coagulant and polymer may require heated water. TIA water tank is be the source of process water.



### 3 CONSTRUCTION AND COMMISSIONING SUMMARY

#### 3.1 CONSTRUCTION SCHEDULE

The construction of the EWTP was conducted between June 2022 and July 2023. The commissioning started in May 2023 and was completed in July 2023. Construction and commissioning were completed according to the milestone dates shown in Table 1.

Table 1: Construction and Commissioning Milestone

Activities	Timeline
Pad construction	June, 2022 to October 2023
Concrete Foundations and Structure for the Building	October 2022 to mid January 2023
Building Construction	October 2022 to mid January 2023
Building Systems and Services Installation (mechanical, electricity, piping, HVAC, Ventilation, Heating), pumping station in TIA and exterior piping	Mid January 2023 to end of July 2023
Commissioning (process stable, chemistry adjusted, complete minor piping modifications)	Mid May 2023 to end of July 2023

#### 3.2 FIELD DECISIONS THAT DEVIATE FROM ORIGINAL DESIGN

No major variation from the original design were noted during the construction of the building. Minor piping modification occurred to adjust to the field situation. Red lining modification are presented on Appendix A on the P&ID.

#### 3.3 AS BUILT DRAWINGS AND PHOTOGRAPHS

As-built documentation is presented in Appendices A and B:

- As Built Drawings;
- Photographs.





## **APPENDIX A – As built drawings**



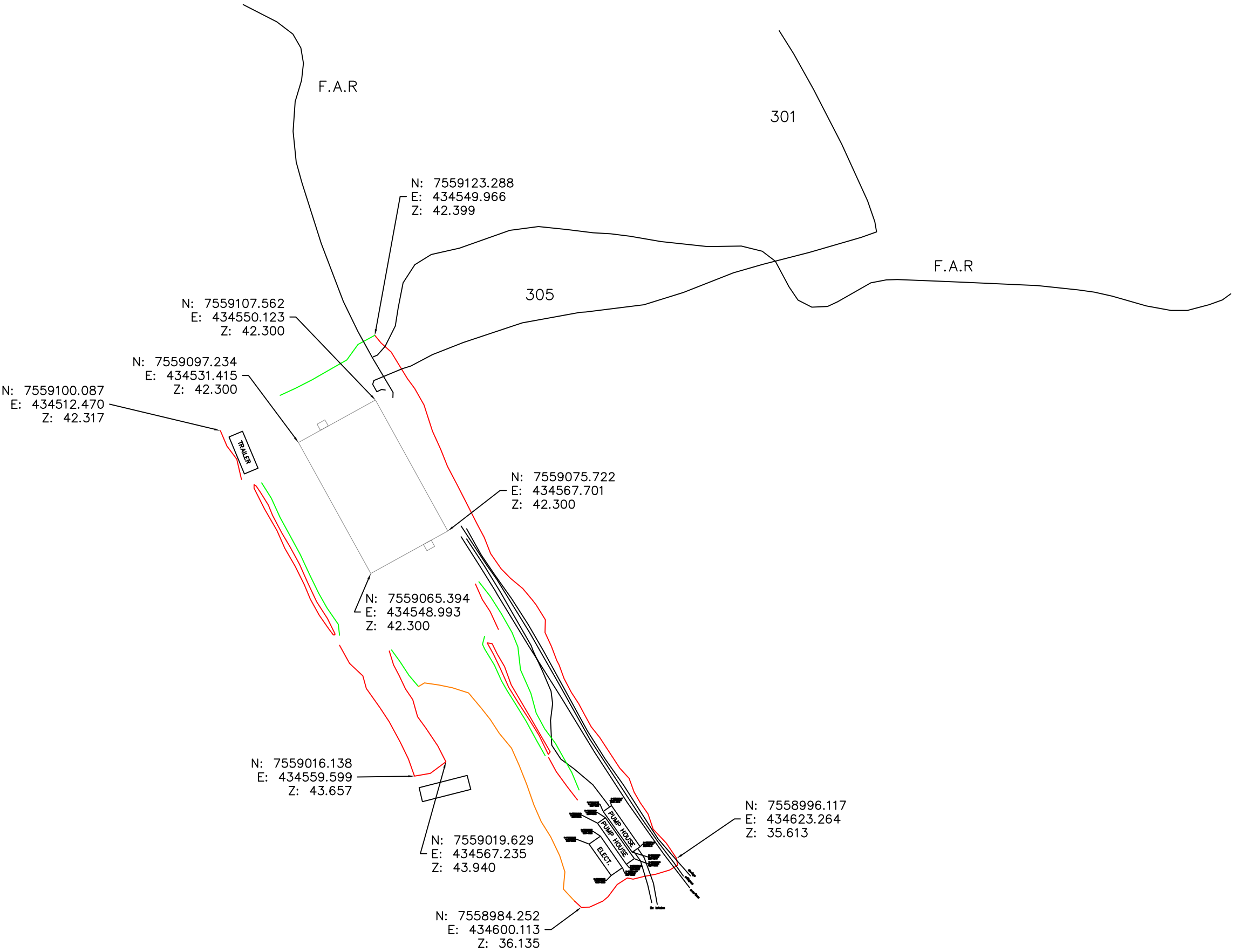




As Built Report  
Effluent Water Treatment Plant

October 2023

## As Built Survey







L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET DOIT ÊTRE RETOURNÉE SUR DEMANDE, SANS AUTORISATION ÉCRITE PRÉALABLE. TOUTE TRANSMISSION DE COPIES À AUTRUI ET TOUTE UTILISATION AUTRE QUE CELLE POUR LAQUELLE L'INFORMATION EST PRÊTÉE SONT INTERDITES.  
© AGNICO EAGLE LTD.

THE INFORMATION HERE ON IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETURNED UPON REQUEST. WITHOUT WRITTEN PERMISSION, ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED.  
© AGNICO EAGLE LTD.

TITRE / TITLE	# DWG

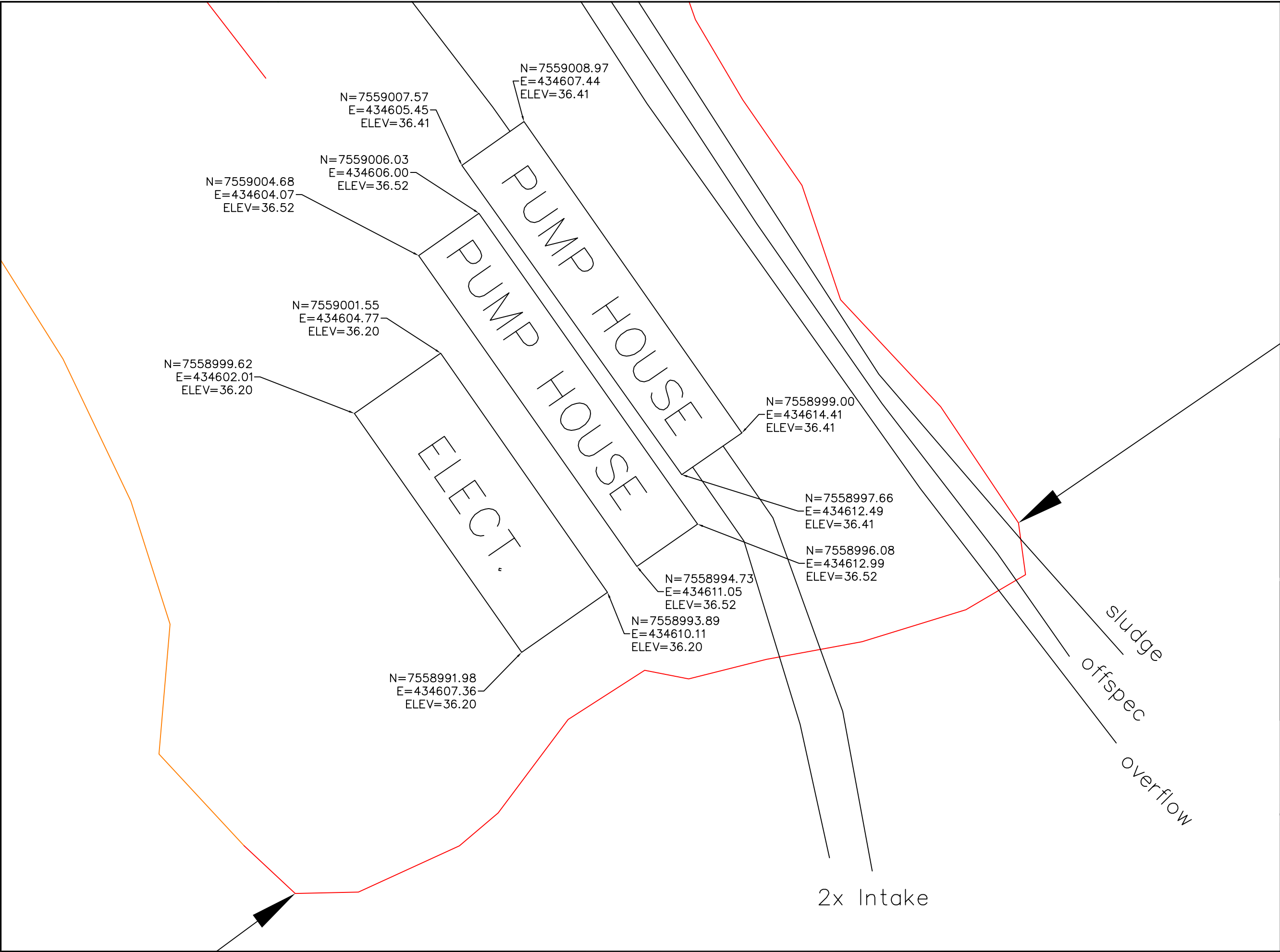
DESSINS EN RÉFÉRENCE/REFERENCE DRAWINGS			
1	general as-built wtp	2023-10-11	TH
REV	DESCRIPTION	DATE	PAR BY



REVISIONS	
DESSINÉ PAR DRAWN BY	T. Hanneuse
VÉRIFIÉ PAR CHECKED BY	
APPROUVÉ PAR APPROVED BY	
No. PROJET PROJECT NO.	6205
DATE	2023-10-11

TITRE / TITLE	
AGNICO-EAGLE - DIVISION 693 - WATER TREATMENT PLANT	
GENERAL AS-BUILT	

ÉCHELLE/ SCALE	n.t.s.	FICHER FILE	.DWG
No. DESSIN/ DRAWING NO.	6205-693-142-203-AB_WTP		
REVISION	1	FEUILLE/SHT	1 / 1







L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET DOIT ÊTRE RETOURNÉE SUR DEMANDE, SANS AUTORISATION ÉCRITE PRÉALABLE. TOUTE TRANSMISSION DE COPIES À AUTRUI ET TOUTE UTILISATION AUTRE QUE CELLE POUR LAQUELLE L'INFORMATION EST PRÊTÉE SONT INTERDITES.  
© AGNICO EAGLE LTD.

THE INFORMATION HERE ON IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETURNED UPON REQUEST. WITHOUT WRITTEN PERMISSION, ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED.  
© AGNICO EAGLE LTD.

TITRE / TITLE		# DWG	
DESSINS EN RÉFÉRENCE/REFERENCE DRAWINGS			
1	pump house area as-built wtp	2023-10-11	TH
REV	DESCRIPTION	DATE	PAR BY

REVISIONS	
DESSINÉ PAR DRAWN BY	T. Hanneuse
VÉRIFIÉ PAR CHECKED BY	
APPROUVÉ PAR APPROVED BY	
No. PROJET PROJECT NO.	6205
DATE	2023-10-11
TITRE / TITLE	
AGNICO-EAGLE - DIVISION 693 - WATER TREATMENT PLANT  PUMP HOUSE AREA AS-BUILT	

ÉCHELLE/ SCALE	FICHER FILE	REVISION	FEUILLE/SHT
n.t.s.	.DWG	1	1 / 1
No. DESSIN/ DRAWING NO.		6205-693-142-203-AB_WTP	



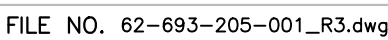


As Built Report  
Effluent Water Treatment Plant

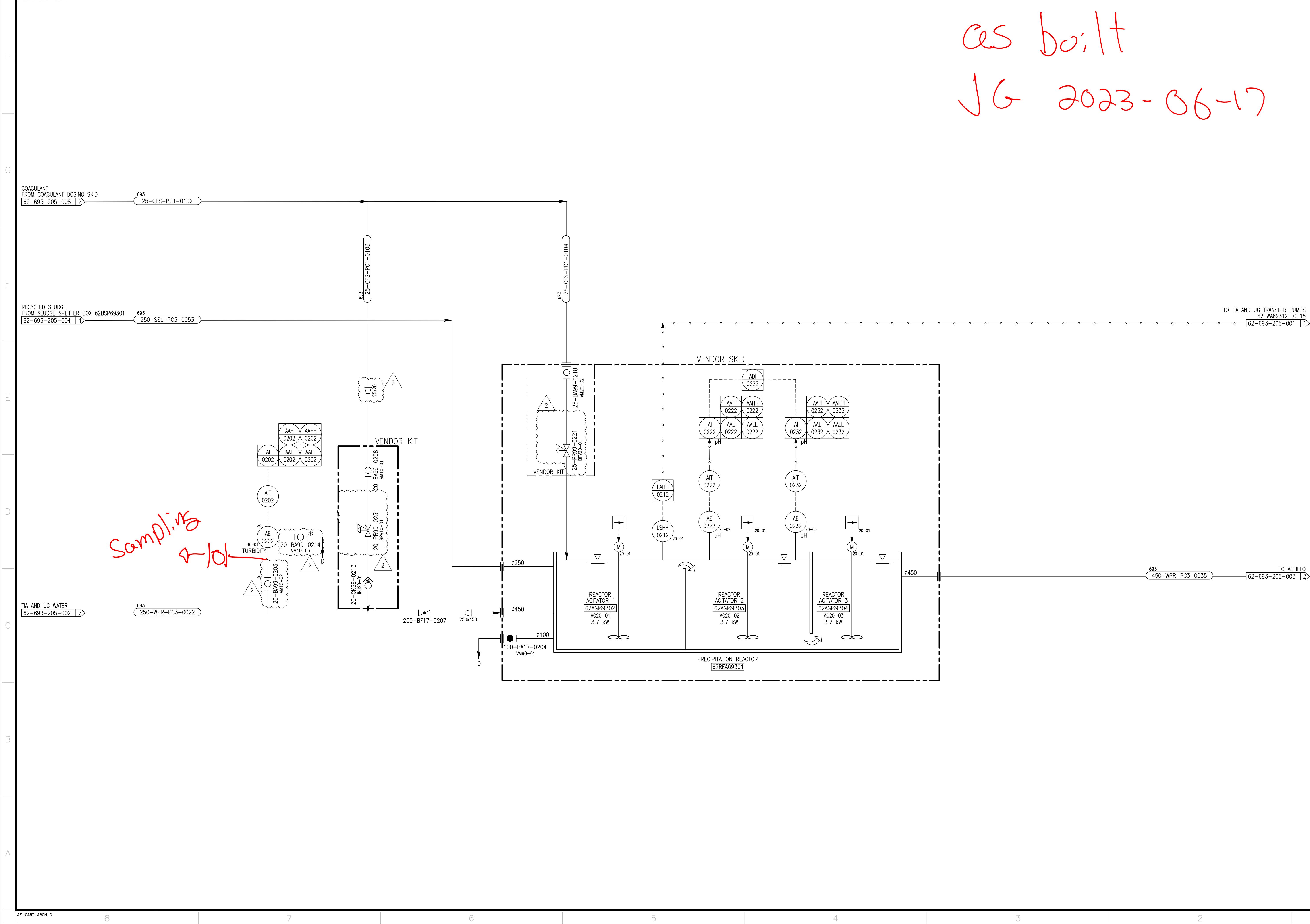
October 2023

**As Built PID with Red Lining**









PLAN CLE  
KEY PLAN

NOTES GÉNÉRALES / GENERAL NOTES

1. VENDOR SKID INFORMATION IS PROVIDED ON THIS P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION CLARITY AND TAGGING STANDARDIZATION. FOR ANY PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR VENDOR SKIDS.

POUR CONSTRUCTION  
FOR CONSTRUCTION

AGNICO EAGLE

DATE : 2022-08-03

L'INFORMATION CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. IL N'EST PAS À RETENIR SUR BREVET. SANS AUTORISATION, COPIER, RÉPRODUIRE, TRANSMETTRE, COMMUNIQUER À TROISIÈME PARTIE, OU UTILISER D'UNE MANIÈRE QUELCONQUE, EST INTERDIT. L'INFORMATION EST FURNIE SANS GARANTIE.

THE INFORMATION HEREIN IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETAINED UNDER RESTRICTED. WITHOUT WRITTEN PERMISSION, ANY OTHER TRANSMISSION, TO THIRD PARTY, OR ANY USE, EXCEPT THAT FOR WHICH IT IS ISSUED, ARE PROHIBITED.

AGNICO EAGLE LTD.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	#	DWG
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003	- P10001

REV.	DATE	DESCRIPTION	PAR/REV.	APP.	CLIENT
1	2022-04-28	FOR REVIEW	MS	SD	-
2	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	-
3	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	-
4	2022-06-23	ISSUED FOR TENDER	MS	SD	-

REVISIONS

PERMIT TO PRACTICE

CIMA CANADA INC. c/c CIMA+

Signature: [Signature]

Date: 2022-08-03

PERMIT NUMBER: P942

NTNU Association of Professional Engineers and Geoscientists

TITRE / TITLE

AGNICO EAGLE - HOPE BAY

693 - WATER TREATMENT PLANT

205 - PIPING & INSTRUMENTATION DIAGRAM

METAL PRECIPITATION REACTOR

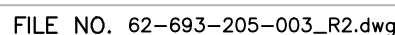
DESSINÉ PAR DRAWN BY	JOHN OSI, Tech.	DATE 2022-04-08
VÉRIFIÉ PAR CHECKED BY	MARYAM SADEGHI, EIT	2022-04-08
APPROUVÉ PAR APPROVED BY	SYLVIE DESSUREAULT, P.Eng	2022-04-08
ÉCHELLE SCALE	N.T.S.	DATE 2022-04-08

NO. DESSIN  
DRAWING NO.

62-693-205-002

NO. PROJET PROJECT NO.	REVISION	Feuille / Sht
6205	2	1 / 1

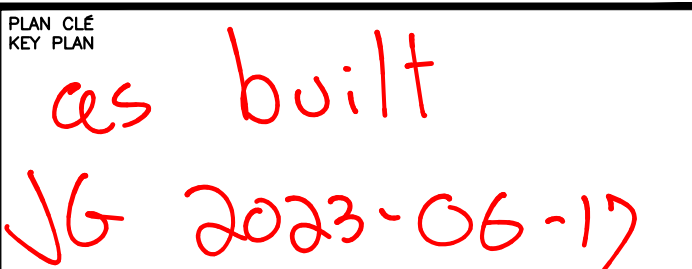












## NOTES GÉNÉRALES / GENERAL NOTES

1. PC4 PIPING SPECIFICATION MODIFIED AS FOLLOWS:  
INSIDE PIPING MATERIAL (CPVC) REPLACED WITH PTFE
2. FROM SPEC BREAK, OUTSIDE PIPING IS NOT PRESENT.
3. ONLY ONE VALVE FV-0521 OR FV-0531 OPEN  
AT ANYTIME.
4. THE INDICATED PIPING DIAMETER CORRESPONDS TO  
THE INSIDE PIPING (TEFLON). OUTSIDE PIPING  
DIAMETER IS 50mm (CPVC SCH80).

POUR CONSTRUCTION  
CONSTRUCTION

DATE : 2022-08-03

L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE AIGMO ENGL LTD. ET DOIT ÊTRE RETOURNÉE SUR DEMANDE, SANS AUTORISATION ÉCRITE PRÉALABLE, TOUTE TRANSMISSION DE COPIE(S) À AUTRUI ET TOUTE UTILISATION AUTRE QUE CELLE POUR LAQUELLE L'INFORMATION EST PRÊTÉE SONT INTERDITES.

(C) AIGMO ENGL LTD.

THE INFORMATION HERE ON IS THE PROPERTY OF AIGMO ENGL LTD. AND MUST BE RETURNED UPON REQUEST, WITHOUT WRITTEN PERMISSION, ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE, EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED.

(C) AIGMO ENGL LTD.

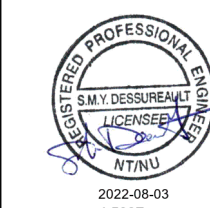
DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

[illegible]

## AGNICO EAGLE

	*	*	.		*	*	*	*
2	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	.			
1	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	.			
0	2022-06-06	ISSUED FOR TENDER	MS	SD	.			
A	2022-04-28	FOR REVIEW	MS	SD	.			
REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT			

## REVISIONS



**PERMIT TO PRACTICE**  
CIMA CANADA INC. c/o CIMA

Signature 

PERMIT NUMBER: P941

PERMIT NUMBER: P942

Engineers and Geoscientists

TITLE / TITLE

AGNICO EAGLE - HOPE BAY  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
TREATED WATER TANK

DESSINÉ PAR DRAWN BY	JOHN OSI, Tech.	DATE 2022-04-08
-------------------------	-----------------	--------------------

VERIFIÉ PAR CHECKED BY	MARYAM SADEGHI, EIT	2022-04-08
---------------------------	---------------------	------------

APPROUVÉ PAR APPROVED BY	Sylvie Dessureault, P. Eng.	2022-04-08
-----------------------------	-----------------------------	------------

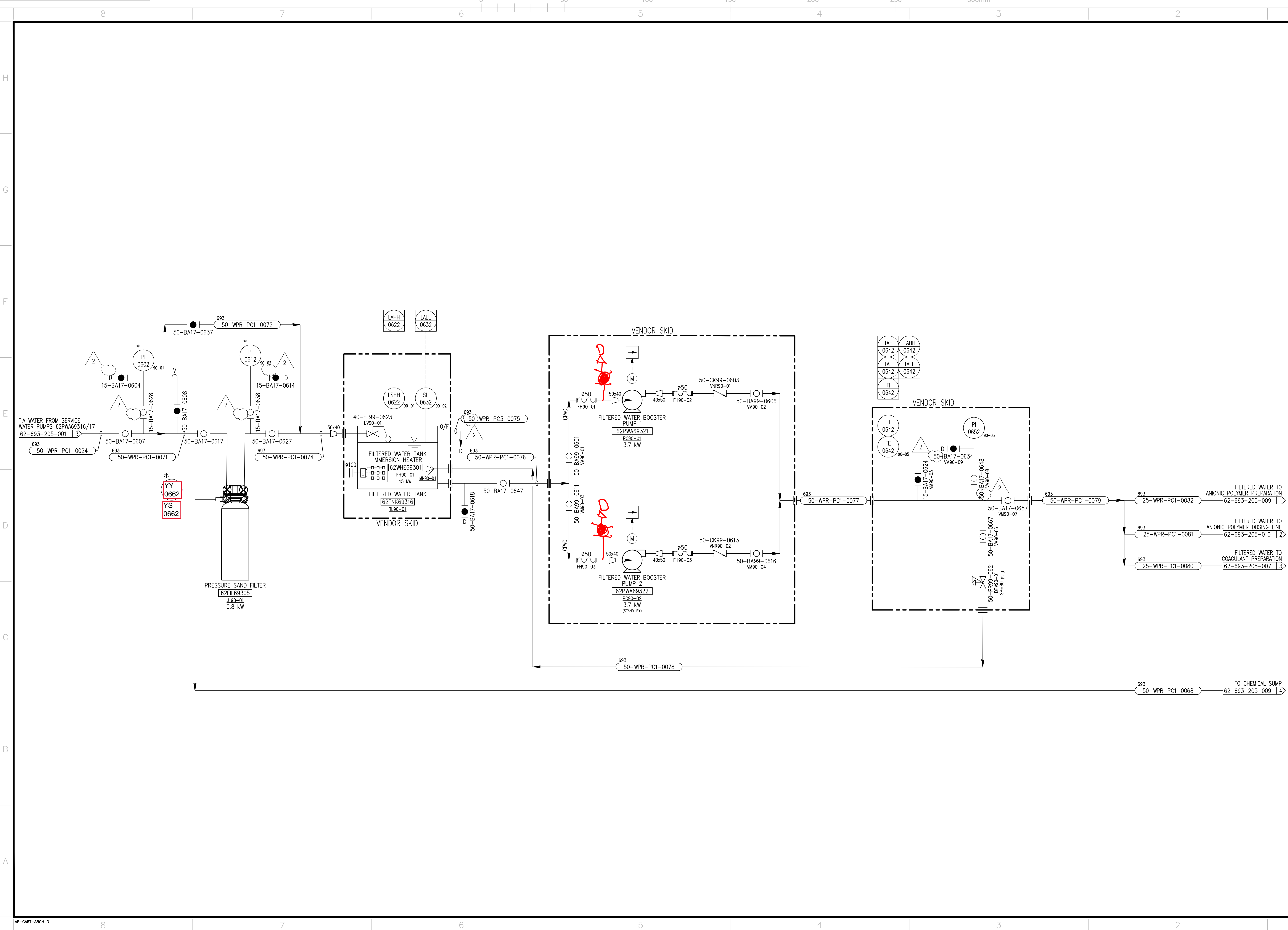
ÉCHELLE	DATE
---------	------

SCALE	N.T.S.	2022-04-08
-------	--------	------------

NO. DESSIN  
DRAWING NO.      1111      1111      1111      1111

62-693-205-005





PLAN 06  
KEY PLAN

ces built  
JG 2023-06-17

CIMA+

NOTES GÉNÉRALES / GENERAL NOTES

1. VENDOR SKID INFORMATION IS PROVIDED ON THIS P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION CLARITY AND TAGGING STANDARDIZATION. FOR ANY PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR VENDOR SKIDS.

POUR CONSTRUCTION  
FOR CONSTRUCTION  
AGNICO EAGLE  
DATE : 2022-08-03

L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ELLE N'EST RETENUE QUE RÉFÉRENCE. SANS AUTANT, SANS GARANTIE. TOUTE TRANSMISSION DE CETTE À UN TROISIÈME PARTI SE FAIT À VOS RISQUES ET SANS GARANTIE. L'INFORMATION EST PRÉSENTÉE SANS GARANTIE.

THE INFORMATION HEREON IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETURNED UPON REQUEST. WITHOUT WRITTEN PERMISSION, ANY COPIES TRANSMISSION TO OTHERS AND ANY USE, EXCEPT THAT FOR WHICH IT IS ISSUED ARE PROHIBITED.

DESIGNS EN REFERENCE / REFERENCE DRAWINGS

VEOLIA P&ID REV. 4 (13 SHEETS) 5000220003 - PID001

AGNICO EAGLE

REV. DATE DESCRIPTION PAR/BY APP. CLIENT

REVISIONS

Signature: [Signature]  
Date: 2022-08-03  
PERMIT NUMBER: P942  
NTNU Association of Professional Engineers and Geoscientists

TITRE / TITLE  
AGNICO EAGLE - HOPE BAY  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
SERVICE WATER FILTRATION SYSTEM

DESIGNÉ PAR  
DRAWN BY JOHN OSI, Tech. DATE 2022-04-08

VERIFIÉ PAR  
CHECKED BY MARYAM SADECHI, EIT 2022-04-08

APPROUVÉ PAR  
APPROVED BY SYLVIE DESSUREAULT, P.Eng 2022-04-08

ÉCHELLE  
SCALE N.T.S. DATE 2022-04-08

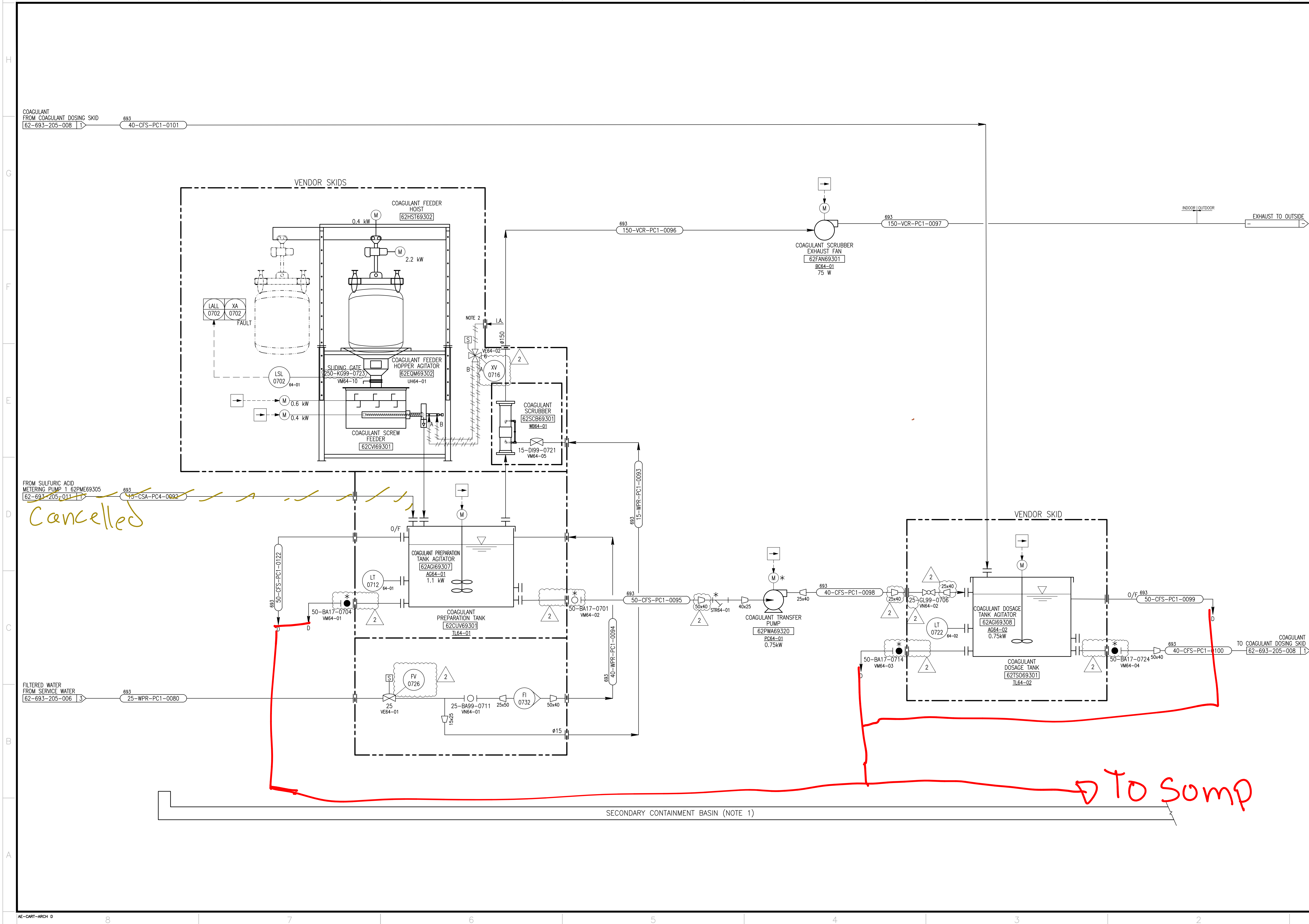
NO. DESSIN  
DRAWING NO. 62-693-205-006

NO. PROJET  
PROJECT NO. 6205

REVISION 2

FEUILLE / SHT 1 / 1





as built  
JG 2023-06-17

**CIMA+**

NOTES GÉNÉRALES / GENERAL NOTES

- COMMON SECONDARY CONTAINMENT FOR COAGULANT AND ANIONIC POLYMER PREPARATION/DOSAGE SYSTEMS.
- 90-VE62-02 COMPRESSED AIR REQUIREMENT:  
4 in<sup>3</sup> AT 50 psig PER PISTON TRAVEL.  
THE FLOWRATE TO BE PROVIDED DEPENDS ON THE NUMBER OF TRAVELS.
- VENDOR SKID INFORMATION IS PROVIDED ON THIS P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION CLARITY AND TAGGING STANDARDIZATION. FOR ANY PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR VENDOR SKIDS.

**POUR CONSTRUCTION**  
FOR CONSTRUCTION  
AGNICO EAGLE  
DATE : 2022-08-03

L'INFORMATION CI-CONTINUE EST LA PROPRIÉTÉ DE AGNICO EAGLE. IL N'EST PAS PERMIS DE LA REPRODUIRE, D'EN FAIRE UN USAGE NON AUTORISÉ, NI DE LA COMMUNIQUER À UN TIERS. L'INFORMATION CI-CONTINUE EST LA PROPRIÉTÉ DE AGNICO EAGLE. IL N'EST PAS PERMIS DE LA REPRODUIRE, D'EN FAIRE UN USAGE NON AUTORISÉ, NI DE LA COMMUNIQUER À UN TIERS.

DESSEINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003 - P10001

**AGNICO EAGLE**

REV.	DATE	DESCRIPTION	PAR / BY	APP.	CLIENT
2	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	
1	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	
D	2022-06-04	ISSUED FOR TENDER	MS	SD	
A	2022-04-28	FOR REVIEW	MS	SD	

**REVISIONS**

PERMIT TO PRACTICE  
CIMA CANADA INC. c/o CIMA+  
Signature: [Signature]  
Date: 2022-08-03  
PERMIT NUMBER: P942  
NTNU Association of Professional Engineers and Geoscientists

TITRE / TITLE  
AGNICO EAGLE - HOPE BAY  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
COAGULANT PREPARATION SYSTEM

DESSEIN PAR DRAWN BY	DATE
JOHN OSI, Tech.	2022-04-08

VERIFIER PAR CHECKED BY	DATE
MARYAM SADEGHI, EIT	2022-04-08

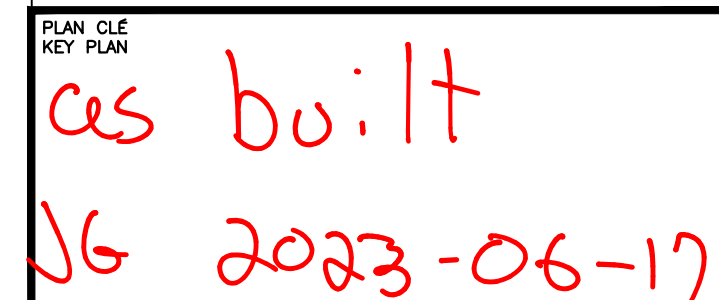
APPROUVER PAR APPROVED BY	DATE
SYLVIE DESSUREAULT, P.Eng	2022-04-08

ÉCHELLE SCALE	DATE
N.T.S.	2022-04-08

NO. DESSIN  
DRAWING NO. 62-693-205-007

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6205	2	1 / 1





## NOTES GÉNÉRALES / GENERAL NOTES

1. COMMON SECONDARY CONTAINMENT FOR COAGULANT AND ANIONIC POLYMER PREPARATION/DOSAGE SYSTEMS.
2. VENDOR SKID INFORMATION IS PROVIDED ON THIS P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION CLARITY AND TAGGING STANDARDIZATION. FOR ANY PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR VENDOR SKIDS.

POUR CONSTRUCTION  
FOR CONSTRUCTION

THE INFORMATION HERE ON IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETURNED UPON REQUEST, WITHOUT WRITTEN PERMISSION, ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED.

## DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

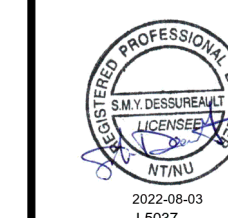
TITRE / TITLE	# DWG
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003 - PI0001



AGNICO EAGLE

	*	*	*	*	*	*
	*	*	*	*	*	*
2	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	.	
1	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	.	
0	2022-06-06	ISSUED FOR TENDER	MS	SD	.	
A.	2022-04-28	FOR REVIEW	MS	SD	.	
REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT	

## REVISIONS



TITLE / TITLE

AGNICO EAGLE - HOPE BAY  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
COAGULANT DOSING SKID

DESSINÉ PAR DRAWN BY	JOHN OSI, Tech.	DATE 2022-04-08
-------------------------	-----------------	--------------------

VERIFIÉ PAR CHECKED BY	MARYAM SADEGHI, EIT	2022-04-08
---------------------------	---------------------	------------

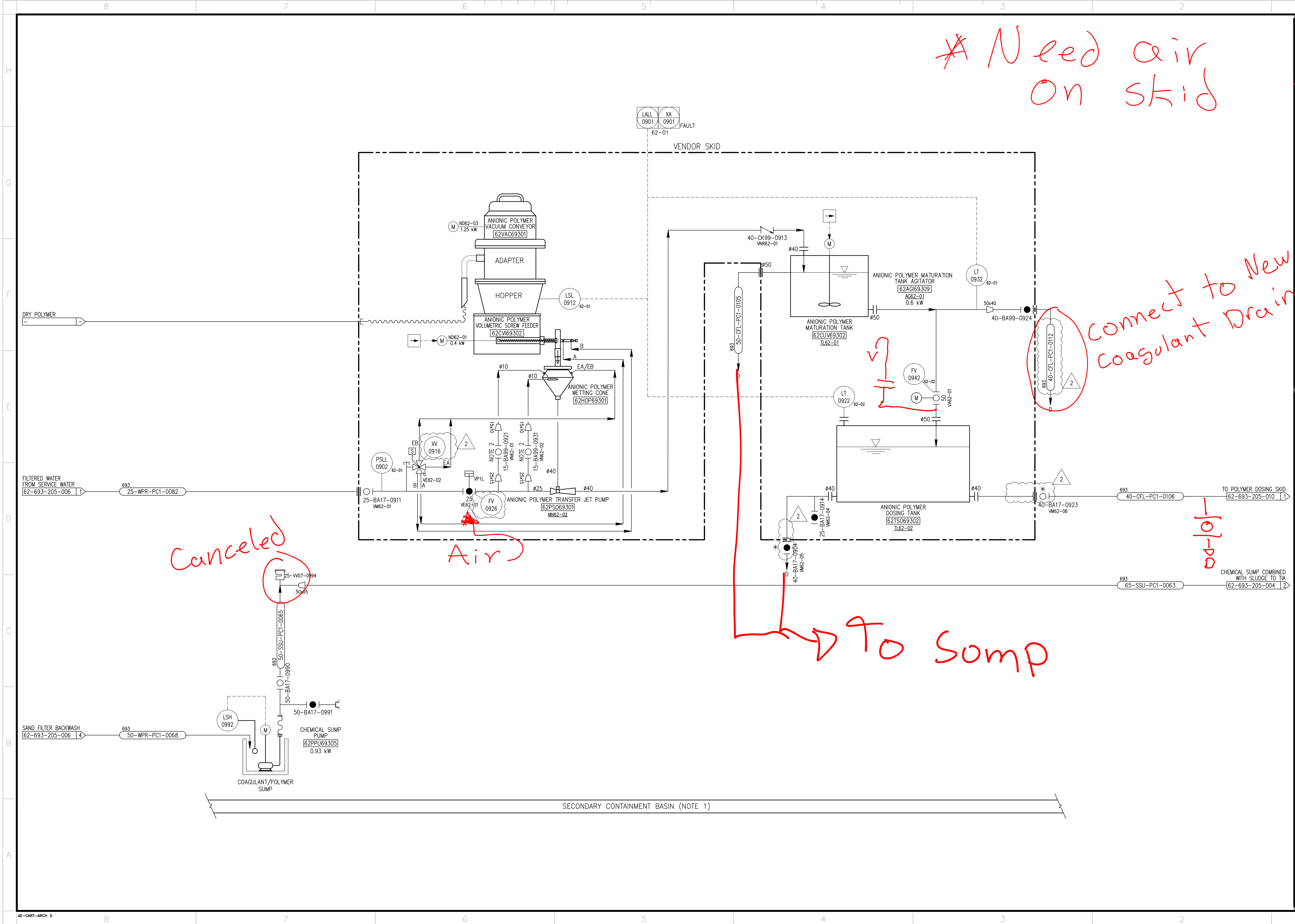
APPROUVÉ PAR APPROVED BY	SYLVIE DESSUREAULT, P.Eng	2022-04-08
-----------------------------	---------------------------	------------

ÉCHELLE SCALE	N.T.S.	DATE	2022-04-08
------------------	--------	------	------------

NO. DESSIN DRAWING NO.	62-693-205-008
---------------------------	----------------

NO. PROJ. PROJECT NO.  6205	REVISION	FEUILLE / SHT
	2	1 / 1





ces built  
JG 2023-06-17



NOTES GÉNÉRALES / GENERAL NOTES

- COMMON SECONDARY CONTAINMENT FOR COAGULANT AND ANIONIC POLYMER PREPARATION/DOSAGE SYSTEMS.
- METERING VALVE.
- VENDOR SKID INFORMATION IS PROVIDED ON THIS P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION CLARITY AND TAGGING STANDARDIZATION. FOR ANY PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR VENDOR SKIDS.

POUR CONSTRUCTION  
FOR CONSTRUCTION  
AGNICO EAGLE  
DATE : 2022-08-03

L'INFORMATION CI-DESSUS EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET NE DOIT ÊTRE REPRODUITE, NI COMMUNIQUÉE, NI UTILISÉE SANS LAutorisation écrite de AGNICO EAGLE LTD. L'INFORMATION CI-DESSUS EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET NE DOIT ÊTRE REPRODUITE, NI COMMUNIQUÉE, NI UTILISÉE SANS LAutorisation écrite de AGNICO EAGLE LTD.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITLE / TITRE	CH. DES
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003 - PID001



AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
2	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	
1	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	
D	2022-06-08	ISSUED FOR TENDER	MS	SD	
A	2022-04-28	FOR REVIEW	MS	SD	

REVISIONS

PERMIT TO PRACTICE  
CIMA CANADA INC. c/o CIMA+  
Signature: [Signature]  
Date: 2022-08-03  
PERMIT NUMBER: P942  
NTNU Association of Professional Engineers and Geoscientists

TITLE / TITRE  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
ANIONIC POLYMER PREPARATION SYSTEM

DESSINÉ PAR  
DRAWN BY JOHN OSI, Tech.  
DATE 2022-04-08

VÉRIFIÉ PAR  
CHECKED BY MARYAM SADEGHI, EIT  
DATE 2022-04-08

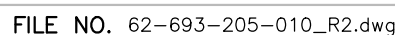
APPROUVÉ PAR  
APPROVED BY SYLVIE DESSUREAULT, P.Eng  
DATE 2022-04-08

ÉCHELLE  
SCALE N.T.S.  
DATE 2022-04-08

NO. DESSIN  
DRAWING NO. 62-693-205-009

NO. PROJET PROJECT NO.	REVISION	FEUILLE / SHT
6205	2	1 / 1





## NOTES GÉNÉRALES / GENERAL NOTES

1. COMMON SECONDARY CONTAINMENT FOR COAGULANT AND ANIONIC POLYMER PREPARATION/DOSAGE SYSTEMS.
2. DELETED.
3. VENDOR SKID INFORMATION IS PROVIDED ON THIS P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION CLARITY AND TAGGING STANDARDIZATION. FOR ANY PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR VENDOR SKIDS.

**POUR CONSTRUCTION  
FOR CONSTRUCTION**

 **AGINCO EAGLE**

DATE : 2022-08-01

L'INFORMATION CI-CONTENUE EST LA PROPRIÉTÉ DE AGNICO EAGLE LTD. ET DOIT ÊTRE RETOURNÉE SUR DEMANDE, SANS AUTORSISATION ÉCRITE PRÉALABLE, TOUTE TRANSMISSION DE COPIES À AUTRUI ET TOUTE UTILISATION AUTRE QUE CELLE POUR LAQUELLE L'INFORMATION EST PRÉVUE SONT INTERDITES.

(C) AGNICO EAGLE LTD.

THE INFORMATION HERE ON IS THE PROPERTY OF AGNICO EAGLE LTD. AND MUST BE RETURNED UPON REQUEST, WITHOUT WRITTEN PERMISSION, ANY COPYING TRANSMITTAL TO OTHERS AND ANY USE EXCEPT THAT FOR WHICH IT IS LOANED ARE PROHIBITED.

(C) AGNICO EAGLE LTD.

DESSINS EN RÉFÉRENCE / REFERENCE DRAWINGS

TITRE / TITLE	# DWG
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003 - PI0001



## AGNICO EAGLE

	*	*	.	*	*	*
2	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	.	
1	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	.	
0	2022-06-06	ISSUED FOR TENDER	MS	SD	.	
A.	2022-04-28	FOR REVIEW	MS	SD	.	
REV.	DATE	DESCRIPTION	PAP/BY	APP.	CIENT	

## REVISIONS



**PERMIT TO PRACTICE**  
CIMA CANADA INC. c/o CIMA

Signature [Signature]

PERMIT NUMBER: P942

PERMIT NUMBER: P942

Engineers and Geoscientists

TITLE / TITRE
AGNICO EAGLE - HOPE BAY 693 - WATER TREATMENT PLANT 205 - PIPING & INSTRUMENTATION DIAGRAM ANIONIC POLYMER DOSING SKID

DESSINÉ PAR DRAWN BY	JOHN OSI, Tech.	DATE 2022-04-08
-------------------------	-----------------	--------------------

VERIFIÉ PAR CHECKED BY	MARYAM SADEGHI, EIT	2022-04-08
---------------------------	---------------------	------------

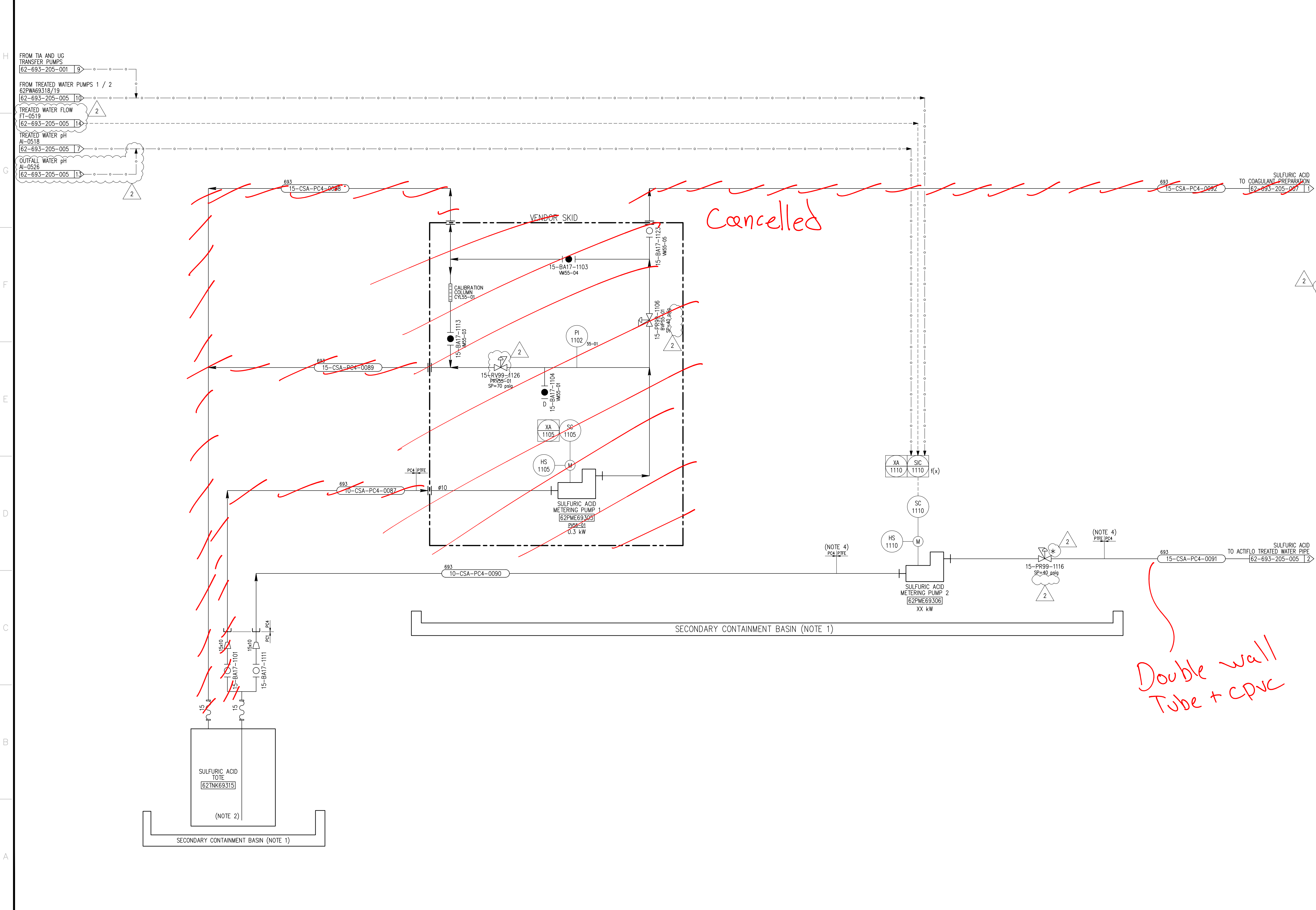
APPROUVÉ PAR  
APPROVED BY SYLVIE DESSUREAULT, P.Eng 2022-04-08

ÉCHELLE SCALE	N.T.S.	DATE	2022-04-08
------------------	--------	------	------------

NO. DESSIN DRAWING NO.	62-693-205-010
---------------------------	----------------

NO. PROJ PROJECT NO.	REVISION	FEUILLE / SHEET
	2	1 / 1





PLAN 01E  
KEY PLAN

ces built  
16  
2023-06-17

CIMA+

NOTES GÉNÉRALES / GENERAL NOTES

1. ONE OR TWO PLASTIC CONTAINMENTS WITH DRAIN VALVE.

2. 3" TO 6" DISTANCE FROM TOTE TANK BOTTOM.

3. PC4 PIPING SPECIFICATION MODIFIED AS FOLLOWS:  
INSIDE PIPING MATERIAL (CPVC) IS REPLACED WITH  
PIPE (TEFLON).

4. FROM SPECIFICATION BREAK, OUTSIDE PIPING IS NOT  
PRESENT.

5. PIPING DIAMETER INDICATED IS FOR INSIDE PIPING  
(PTFE). OUTSIDE PIPING IS 50mm DIAMETER (CPVC  
SCH 80).

6. DELETED.

7. VENDOR SKID INFORMATION IS PROVIDED ON THIS  
P&ID FOR THE MAIN OBJECTIVES OF INTERCONNECTION  
CLARITY AND TAGGING STANDARDIZATION. FOR ANY  
PROCESS DESIGN DISCREPANCY BETWEEN THIS P&ID  
AND VENDOR P&ID, VENDOR P&ID PREVAILS FOR  
VENDOR SKIDS.

POUR CONSTRUCTION  
FOR CONSTRUCTION

AGNICO EAGLE

DATE : 2022-08-03

L'INFORMATION CI-CONTINUE EST LA PROPRIÉTÉ DE AGNICO EAGLE. ELLE N'EST PAS À RETENIR. SI VOUS AVEZ DES  
QUESTIONS, VOUS DEVEZ EN FAIRE PART À AGNICO EAGLE. VOUS DEVEZ EN FAIRE PART À AGNICO EAGLE.  
L'INFORMATION CI-CONTINUE EST LA PROPRIÉTÉ DE AGNICO EAGLE. ELLE N'EST PAS À RETENIR. SI VOUS AVEZ DES  
QUESTIONS, VOUS DEVEZ EN FAIRE PART À AGNICO EAGLE. VOUS DEVEZ EN FAIRE PART À AGNICO EAGLE.

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	CHANG.
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003 - P10001

AGNICO EAGLE

REV.	DATE	DESCRIPTION	PAR / BY	APP.	CLIENT
2	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	
1	2022-06-23	ISSUED FOR CONSTRUCTION	MS	SD	
D	2022-06-08	ISSUED FOR TENDER	MS	SD	
A	2022-04-28	FOR REVIEW	MS	SD	

REVISIONS

PERMIT TO PRACTICE  
CIMA CANADA INC. c/c CIMA+

Signature: [Signature]  
Date: 2022-08-03  
PERMIT NUMBER: P942  
NTNU Association of Professional  
Engineers and Geoscientists

TITRE / TITLE

AGNICO EAGLE - HOPE BAY  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
SULFURIC ACID DOSING SKID

DESSIN PAR  
DRAWN BY JOHN OSI, Tech.

DATE 2022-04-08

VERIFIE PAR  
CHECKED BY MARYAM SADECHI, EIT

2022-04-08

APPROUVE PAR  
APPROVED BY SYLVIE DESSUREAULT, P.Eng

2022-04-08

ÉCHELLE  
SCALE N.T.S.

DATE 2022-04-08

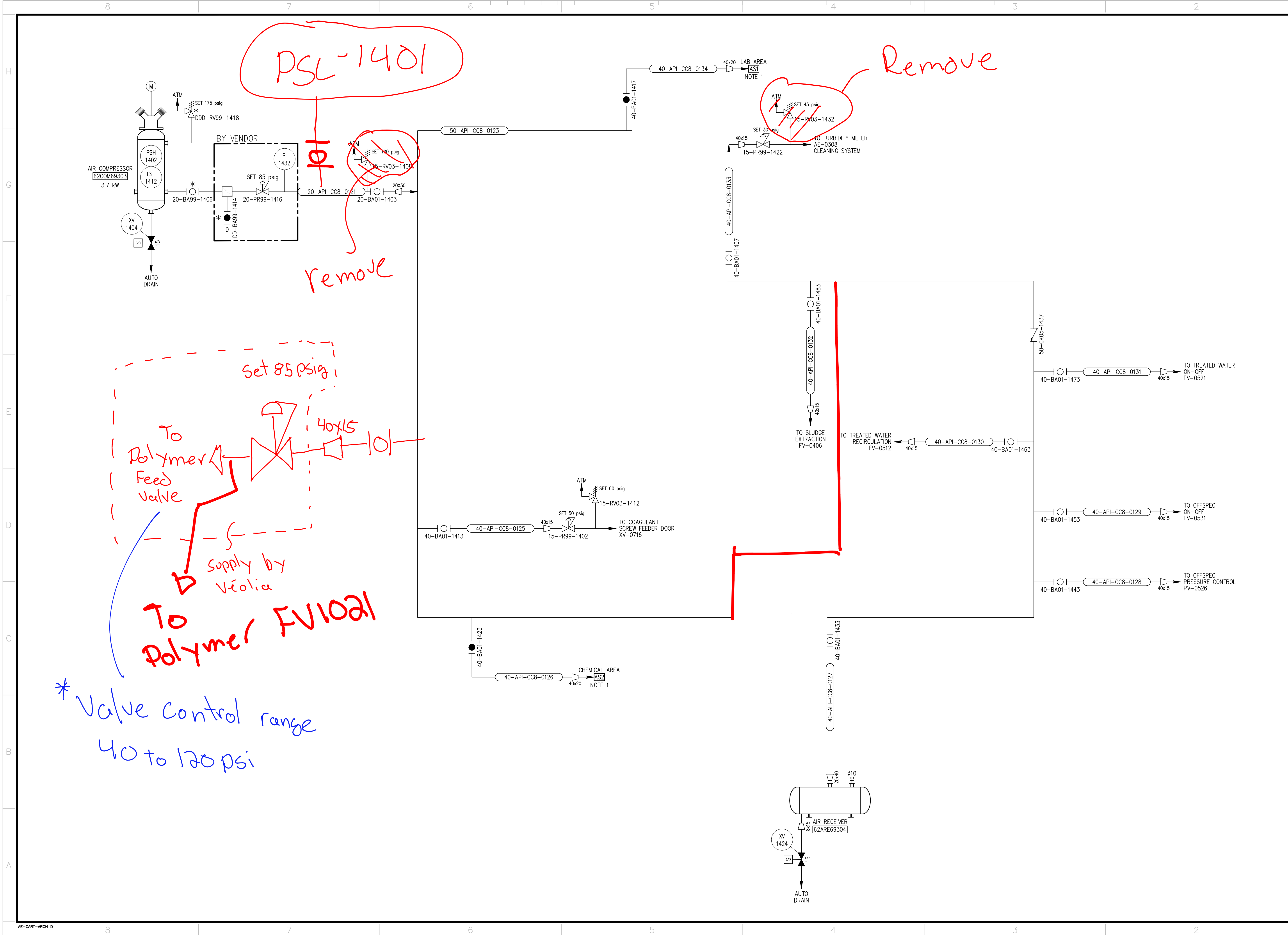
NO. DESSIN  
DRAWING NO. 62-693-205-011

NO. PROJET  
PROJECT NO. 6205

REVISION 2

FEUILLE / SHT  
1 / 1





as built  
JG  
2023-06-17



NOTES GÉNÉRALES / GENERAL NOTES

- ONE HOSE AT A TIME, MANUAL VALVE MAY NEED TO BE CRACKED TO AVOID PRESSURE LOSS IN THE SYSTEM.

**POUR CONSTRUCTION**  
FOR CONSTRUCTION  
AGNICO EAGLE  
DATE : 2022-08-03

L'INFORMATION CI-CONTINUE EST LA PROPRIÉTÉ DE AGNICO EAGLE. IL N'EST PAS PERMIS DE LA REPRODUIRE, D'EN FAIRE UN USAGE NON AUTORISÉ, NI DE LA COMMUNIQUER À UN TROISIÈME. L'INFORMATION EST FOURNIE EN L'ÉTAT. L'AGNICO EAGLE NE GARANTIT PAS L'EXACTITUDE DE L'INFORMATION. L'AGNICO EAGLE NE GARANTIT PAS L'EXACTITUDE DE L'INFORMATION. L'AGNICO EAGLE NE GARANTIT PAS L'EXACTITUDE DE L'INFORMATION.

DESSINS EN REFERENCE / REFERENCE DRAWINGS

TITRE / TITLE	CHG
VEOLIA P&ID REV. 4 (13 SHEETS)	5000220003 - PID001

REV.	DATE	DESCRIPTION	PAR/BY	APP.	CLIENT
D	2022-08-03	ISSUED FOR CONSTRUCTION	MS	SD	
A	2022-07-28	FOR REVIEW	MS	SD	

REVISIONS

**PERMIT TO PRACTICE**  
CIMA CANADA INC. c/o CIMA+  
Signature: *Sylvie Dessureault*  
Date: 2022-08-03  
**PERMIT NUMBER: P942**  
NTNU Association of Professional Engineers and Geoscientists

TITRE / TITLE  
AGNICO EAGLE - HOPE BAY  
693 - WATER TREATMENT PLANT  
205 - PIPING & INSTRUMENTATION DIAGRAM  
COMPRESSED AIR

DESSINÉ PAR DRAWN BY	JOHN OSI, Tech.	DATE 2022-07-20
VÉRIFIÉ PAR CHECKED BY	MARYAM SADEGHI, EIT	2022-07-20
APPROUVÉ PAR APPROVED BY	SYLVIE DESSUREAULT, P.Eng	2022-07-20
ÉCHELLE SCALE	N.T.S.	DATE 2022-07-20

NO. DESSIN PROJECT NO.	62-693-205-014
NO. PROJET PROJECT NO.	6205
REVISION	0
FEUILLE / SHT	1 / 1



FILE NO. 62-693-205-012\_RB.dwg



AE-CART-ARCH E





## APPENDIX B – Pictures





Pad Before Final Levelling – Building footing excavation





Concrete – Building Foundation





Building Construction





Polymer Makedown and dosing Skid



Coagulant Dosing Skid





Coagulant Makedown





Service Water Tank





Treated Water Tank and Pumps



TIA Transfer Water Pumps

Underground Transfer Water Pumps





Actiflo Clarifier



Treated Water (Actiflo Overflow)





TIA Raw Water Pumps



**APPENDIX C – Safety Data Sheets**



## 1. Identification

<b>Product identifier</b>	<b>HYDREX 3266</b>
<b>Other means of identification</b>	None.
<b>Recommended use</b>	Potable Water Coagulant PROFESSIONAL USE ONLY
<b>Recommended restrictions</b>	No other uses are advised.
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Supplier</b>	Veolia Water Technologies Canada Inc.
<b>Address</b>	2000 Argentia Road, Plaza IV, Suite 430 Mississauga, ON L5N 1W1 Canada
<b>Contact Person</b>	Hydrex Product Specialist
<b>Telephone</b>	(905) 286-4846
<b>Fax</b>	(905) 286-0488
<b>e-mail</b>	vwtcana-hydrex@veolia.com
<b>24-Hour Emergency telephone</b>	24 Hour Number: +1-760-476-3962 (Code:333239)
<b>Supplier</b>	Not available.

## 2. Hazard identification

<b>Physical hazards</b>	Corrosive to metals	Category 1
<b>Health hazards</b>	Acute toxicity, oral	Category 4
	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
<b>Environmental hazards</b>	Not classified.	

### Label elements



**Signal word** Danger

**Hazard statement** May be corrosive to metals. Harmful if swallowed. Causes skin irritation. Causes serious eye damage.

### Precautionary statement

#### Prevention

Keep only in original packaging. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. Wear eye protection/face protection. Wear protective gloves.

#### Response

IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth. IF ON SKIN: Wash with plenty of water. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse. Absorb spillage to prevent material-damage.

#### Storage

Store in a corrosion resistant container with a resistant inner liner.

#### Disposal

Dispose of contents/container in accordance with local/regional/national/international regulations.

**Other hazards** None known.

**Supplemental information** None.

## 3. Composition/information on ingredients

### Mixtures



Chemical name	Common name and synonyms	CAS number	%
Ferric Sulfate		10028-22-5	70 - < 90
Ferrous sulfate		7720-78-7	1 - < 5
Sulfuric acid		7664-93-9	< 1
Other components below reportable levels			20 - < 30

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

#### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.
<b>Eye contact</b>	Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.
<b>Ingestion</b>	Rinse mouth. If vomiting occurs, keep head low so that stomach content doesn't get into the lungs. Get medical advice/attention if you feel unwell.
<b>Most important symptoms/effects, acute and delayed</b>	Nausea, vomiting. Abdominal pain. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim warm. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Not available.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	Prevent entry into waterways, sewer, basements or confined areas.  Large Spills: Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Absorb spillage to prevent material damage. Absorb in vermiculite, dry sand or earth and place into containers. Following product recovery, flush area with water.  Small Spills: Wipe up with absorbent material (e.g. cloth, fleece). Clean surface thoroughly to remove residual contamination.
<b>Environmental precautions</b>	Never return spills to original containers for re-use. For waste disposal, see section 13 of the SDS. Avoid discharge into drains, water courses or onto the ground.



## 7. Handling and storage

<b>Precautions for safe handling</b>	Do not get this material in contact with eyes. Do not taste or swallow. Avoid contact with eyes, skin, and clothing. Avoid prolonged exposure. When using, do not eat, drink or smoke. Provide adequate ventilation. Wear appropriate personal protective equipment. Wash hands thoroughly after handling. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Store in a cool, dry place out of direct sunlight. Store in corrosive resistant container with a resistant inner liner. Store in tightly closed container. Keep only in the original container. Store away from incompatible materials (see Section 10 of the SDS). Store in cool, dry place.

## 8. Exposure controls/personal protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
FERRIC SULFATE (CAS 10028-22-5)	TWA	1 mg/m3	
FERROUS SULFATE (CAS 7720-78-7)	TWA	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

#### Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value	
FERRIC SULFATE (CAS 10028-22-5)	TWA	1 mg/m3	
FERROUS SULFATE (CAS 7720-78-7)	TWA	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	STEL	3 mg/m3	
	TWA	1 mg/m3	

#### Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value	Form
FERRIC SULFATE (CAS 10028-22-5)	STEL	2 mg/m3	
	TWA	1 mg/m3	
FERROUS SULFATE (CAS 7720-78-7)	STEL	2 mg/m3	
	TWA	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Mist.

#### Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)

Components	Type	Value	Form
FERRIC SULFATE (CAS 10028-22-5)	TWA	1 mg/m3	
FERROUS SULFATE (CAS 7720-78-7)	TWA	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

#### Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)

Components	Type	Value	Form
FERRIC SULFATE (CAS 10028-22-5)	TWA	1 mg/m3	
FERROUS SULFATE (CAS 7720-78-7)	TWA	1 mg/m3	



**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
Sulfuric Acid (CAS 7664-93-9)	TWA	0.2 mg/m3	Thoracic fraction.

**Canada. Quebec OELs. (Ministry of Labor - Regulation respecting occupational health and safety)**

Components	Type	Value	
FERRIC SULFATE (CAS 10028-22-5)	TWA	1 mg/m3	
FERROUS SULFATE (CAS 7720-78-7)	TWA	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	STEL	3 mg/m3	
	TWA	1 mg/m3	

**Canada. Saskatchewan OELs (Occupational Health and Safety Regulations, 1996, Table 21)**

Components	Type	Value	Form
FERROUS SULFATE (CAS 7720-78-7)	15 minute	3 mg/m3	
	8 hour	1 mg/m3	
Sulfuric Acid (CAS 7664-93-9)	15 minute	0.6 mg/m3	Thoracic fraction.
	8 hour	0.2 mg/m3	Thoracic fraction.

**Biological limit values** No biological exposure limits noted for the ingredient(s).

**Appropriate engineering controls** Provide eyewash station and safety shower.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Chemical goggles and face shield are recommended. Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Chemical resistant gloves.

**Other** Wear appropriate chemical resistant clothing. Chemical resistant gloves.

**Respiratory protection** In case of insufficient ventilation, wear suitable respiratory equipment.

**Thermal hazards** Wear appropriate thermal protective clothing, when necessary.

**General hygiene considerations** Keep away from food and drink. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties**

<b>Appearance</b>	Granular
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Yellowish or Brown.
<b>Odor</b>	Not significant.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	> 572 °F (> 300 °C)
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Non applicable
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.



**Upper/lower flammability or explosive limits**

**Flammability limit - lower (%)** Not available.

**Flammability limit - upper (%)** Not available.

**Explosive limit - lower (%)** Not available.

**Explosive limit - upper (%)** Not available.

**Vapor pressure** Not available.

**Vapor density** Not available.

**Relative density** Not available.

**Solubility(ies)**

**Solubility (water)** Soluble

**Partition coefficient (n-octanol/water)** Not available.

**Auto-ignition temperature** Not available.

**Decomposition temperature** Not available.

**Viscosity** Not available.

**Other information**

**Explosive properties** Not explosive.

**Oxidizing properties** Not oxidizing.

**Specific gravity** 1.2 - 1.4

## 10. Stability and reactivity

**Reactivity** May be corrosive to metals. The product is stable and non-reactive under normal conditions of use, storage and transport.

**Chemical stability** Material is stable under normal conditions.

**Possibility of hazardous reactions** No dangerous reaction known under conditions of normal use. Hazardous polymerization does not occur.

**Conditions to avoid** Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. Contact with incompatible materials.

**Incompatible materials** Strong oxidizing agents. Metals.

**Hazardous decomposition products** Sulfur oxides.

## 11. Toxicological information

**Information on likely routes of exposure**

**Inhalation** Prolonged inhalation may be harmful.

**Skin contact** Causes skin irritation.

**Eye contact** Causes serious eye damage.

**Ingestion** Harmful if swallowed.

**Symptoms related to the physical, chemical and toxicological characteristics** Nausea, vomiting. Abdominal pain. Diarrhea. Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Skin irritation. May cause redness and pain.

**Information on toxicological effects**

**Acute toxicity** Harmful if swallowed.

Product	Species	Test Results
HYDREX 3266		
<b>Acute</b>		
<b>Dermal</b>		
<i>Solid</i>		
LD50	Mouse	>= 200 mg/kg Calculation



Product	Species	Test Results
LD50	Rat	5200 mg/kg estimated
<b>Inhalation</b>		
LC50	Rat	12000 mg/l, 1 Hours
<b>Oral</b>		
<i>Solid</i>		
LD50	Rat	>= 650 mg/kg Calculation
<b>Skin corrosion/irritation</b>	Causes skin irritation.	
<b>Serious eye damage/eye irritation</b>	Causes serious eye damage.	
<b>Respiratory or skin sensitization</b>		
<b>Canada - Alberta OELs: Irritant</b>		
Ferric Sulfate (CAS 10028-22-5)	Irritant	
Ferrous sulfate (CAS 7720-78-7)	Irritant	
<b>Respiratory sensitization</b>	Not a respiratory sensitizer.	
<b>Skin sensitization</b>	This product is not expected to cause skin sensitization.	
<b>Germ cell mutagenicity</b>	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.	
<b>Carcinogenicity</b>	Risk of cancer cannot be excluded with prolonged exposure.	
<b>ACGIH Carcinogens</b>		
Sulfuric acid (CAS 7664-93-9)	A2 Suspected human carcinogen.	
<b>Canada - Alberta OELs: Carcinogen category</b>		
Sulfuric acid (CAS 7664-93-9)	Suspected human carcinogen.	
<b>Canada - Manitoba OELs: carcinogenicity</b>		
Sulfuric acid (CAS 7664-93-9)	Suspected human carcinogen.	
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
Sulfuric acid (CAS 7664-93-9)	1 Carcinogenic to humans.	
<b>US. National Toxicology Program (NTP) Report on Carcinogens</b>		
Sulfuric acid (CAS 7664-93-9)	Known To Be Human Carcinogen.	
<b>Reproductive toxicity</b>	This product is not expected to cause reproductive or developmental effects.	
<b>Specific target organ toxicity - single exposure</b>	Not classified.	
<b>Specific target organ toxicity - repeated exposure</b>	Not classified.	
<b>Aspiration hazard</b>	Not an aspiration hazard.	
<b>Chronic effects</b>	Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.	

## 12. Ecological information

**Ecotoxicity** The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

Product	Species	Test Results
HYDREX 3266		
<b>Aquatic</b>		
<i>Acute</i>		
Algae	EC50	Green algae ( <i>Scenedesmus acutus</i> ) > 13 mg/l, 7 day
Crustacea	EC50	Daphnia >= 100 mg/l, 48 hours calculated
Fish	LC50	Fish >= 100 mg/l, 96 hours calculated
<i>Chronic</i>		
Fish	Presumed Non-Toxic	Fish The compound is considered to have no long term effects in aquatic systems due to the rapid formation of insoluble hydroxides.

**Persistence and degradability** Not applicable.

Material name: HYDREX 3266

3375 Version #: 03 Revision date: 05-28-2020 Issue date: 01-06-2017

SDS Canada



<b>Bioaccumulative potential</b>	The product is not bioaccumulating.
<b>Mobility in soil</b>	This product is water soluble and may disperse in soil.
<b>Other adverse effects</b>	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

### 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	D002: Waste Corrosive material [pH ≤2 or ≥12.5, or corrosive to steel] The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

<b>TDG</b>	Not regulated as dangerous goods. This product is regulated as a hazardous material according to the Department of Transportation only in bulk quantities (greater than 1363 lbs per package).
<b>IATA</b>	Not regulated as dangerous goods.
<b>IMDG</b>	Not regulated as dangerous goods.
<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code</b>	Not applicable.

### 15. Regulatory information

<b>Canadian regulations</b>	This product has been classified in accordance with the hazard criteria of the HPR and the SDS contains all the information required by the HPR.
<b>Controlled Drugs and Substances Act</b>	Not regulated.
<b>Export Control List (CEPA 1999, Schedule 3)</b>	Not listed.
<b>Greenhouse Gases</b>	Not listed.
<b>Ontario. Toxic Substances. Toxic Reduction Act, 2009. Regulation 455/09 (July 1, 2011)</b>	
	Sulfuric acid (CAS 7664-93-9)
<b>Precursor Control Regulations</b>	
	Sulfuric acid (CAS 7664-93-9) Class B
<b>International regulations</b>	
<b>Stockholm Convention</b>	Not applicable.
<b>Rotterdam Convention</b>	Not applicable.
<b>Kyoto protocol</b>	Not applicable.
<b>Montreal Protocol</b>	Not applicable.
<b>Basel Convention</b>	Not applicable.



## International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
Taiwan	Taiwan Chemical Substance Inventory (TCSI)	No
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other information

<b>Issue date</b>	01-06-2017
<b>Revision date</b>	05-28-2020
<b>Version #</b>	03
<b>Disclaimer</b>	Veolia Water Technologies is not able to anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use and or non respect of Veolia Water Technologies' requirement.
<b>Revision information</b>	This document has undergone significant changes and should be reviewed in its entirety.



**1. Product and Company Identification**

<b>Product identifier</b>	<b>Hydrex 6105</b>
<b>Version #</b>	01
<b>Issue date</b>	08-15-2014
<b>CAS #</b>	Mixture
<b>Product use</b>	Wastewater Flocculant
<b>Manufacturer</b>	
<b>Supplier</b>	VWS Canada
<b>Address</b>	2000 Argentia Road, Plaza IV, Suite 430 Mississauga, ON L5N 1W1 Canada
<b>Contact Person</b>	Hydrex Product Specialist
<b>Telephone</b>	(905) 286-4846
<b>Fax</b>	(905) 286-0488
<b>e-mail</b>	vwscanada.hydrex@veoliawater.com
<b>24-Hour Emergency telephone</b>	+1-760-476-3962 (Code:333239)

**2. Hazards Identification****Potential health effects**

<b>Eyes</b>	Health injuries are not known or expected under normal use.
<b>Skin</b>	Health injuries are not known or expected under normal use.
<b>Inhalation</b>	Health injuries are not known or expected under normal use.
<b>Ingestion</b>	Health injuries are not known or expected under normal use.

**3. Composition / Information on Ingredients**

The components are not hazardous or are below required disclosure limits.

**4. First Aid Measures****First aid procedures**

<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Skin contact</b>	Rinse skin with water/shower. Get medical attention if irritation develops and persists.
<b>Inhalation</b>	If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. Call a physician if symptoms develop or persist.
<b>Ingestion</b>	Rinse mouth. If ingestion of a large amount does occur, call a poison control center immediately.
<b>General advice</b>	If you feel unwell, seek medical advice (show the label where possible). Show this safety data sheet to the doctor in attendance.

**5. Fire Fighting Measures**

<b>Flammable properties</b>	Dust accumulation from this product may present an explosion hazard in the presence of an ignition source.
<b>Extinguishing media</b>	
<b>Suitable extinguishing media</b>	Water spray, fog, CO <sub>2</sub> , dry chemical, or alcohol resistant foam.
<b>Protection of firefighters</b>	
<b>Protective equipment for firefighters</b>	In the event of fire, wear self-contained breathing apparatus.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers. Dust may form an explosive mixture in the atmosphere.
<b>Specific methods</b>	Use water spray to cool unopened containers.



<b>Explosion data</b>	
<b>Sensitivity to static discharge</b>	Not available.
<b>Sensitivity to mechanical impact</b>	Not available.

## 6. Accidental Release Measures

<b>Personal precautions</b>	Slippery when wet.
<b>Environmental precautions</b>	Prevent further leakage or spillage if safe to do so. Do not contaminate water.
<b>Methods for cleaning up</b>	Should not be released into the environment. Following product recovery, flush area with water. For waste disposal, see section 13 of the MSDS.

## 7. Handling and Storage

<b>Handling</b>	Avoid release to the environment. Material can be slippery when wet.
<b>Storage</b>	Store in a dry area. Store in closed original container at temperatures between 5°C and 30°C.

## 8. Exposure Controls / Personal Protection

<b>Biological limit values</b>	No biological exposure limits noted for the ingredient(s).
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	Chemical goggles are recommended.
<b>Skin protection</b>	Normal work clothing (long sleeved shirts and long pants) is recommended.
<b>Respiratory protection</b>	No specific recommendation made, but protection against nuisance dust must be used when the general level exceeds 10 mg/m <sup>3</sup> .

## 9. Physical & Chemical Properties

<b>Appearance</b>	Not available.
<b>Physical state</b>	Solid.
<b>Form</b>	Not available.
<b>Color</b>	White
<b>Odor</b>	Not available.
<b>pH</b>	Not available.
<b>Vapor pressure</b>	0 hPa estimated
<b>Vapor density</b>	Not available.
<b>Boiling point</b>	Not available.
<b>Melting point/Freezing point</b>	Not available.
<b>Solubility (water)</b>	Not available.
<b>Specific gravity</b>	0.65 - 0.9
<b>Flash point</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Ph Of 1% Solution</b>	5 - 7

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Conditions to avoid</b>	None under normal conditions.
<b>Incompatible materials</b>	Not available.
<b>Hazardous decomposition products</b>	Upon decomposition, this product may yield oxides of nitrogen and ammonia, carbon dioxide, carbon monoxide and other low molecular weight hydrocarbons.



## 11. Toxicological Information

### Toxicological data

Product	Species	Test Results
Hydrex 6105 (CAS Mixture)		
<b>Acute</b>		
<i>Dermal</i>		
LD50	Rabbit	> 10000 mg/kg
<i>Oral</i>		
LD50	Rat	> 5000 mg/kg

\* Estimates for product may be based on additional component data not shown.

**Chronic effects** Not expected to be hazardous by WHMIS criteria.

## 12. Ecological Information

### Ecotoxicological data

Product	Species	Test Results
Hydrex 6105 (CAS Mixture)		
Algae	IC50	Algae 2276 mg/l, 72 hr
Crustacea	EC50	Daphnia > 100 mg/l, 48 hr
Other	LC50	Rainbow Trout > 120 mg/l, 96 hr
<b>Aquatic</b>		
Fish	LC50	Zebra danio (Danio rerio) > 100 mg/l, 96 hr

\* Estimates for product may be based on additional component data not shown.

**Ecotoxicity** Contains a substance which causes risk of hazardous effects to the environment.

**Environmental effects** An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

**Persistence and degradability** Not available.

## 13. Disposal Considerations

**Disposal instructions** Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Do not allow this material to drain into sewers/water supplies. This product, in its present state, when discarded or disposed of, is not a hazardous waste according to Federal regulations (40 CFR 261.4 (b)(4)). Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose in accordance with all applicable regulations.

**Contaminated packaging** Empty containers should be taken to an approved waste handling site for recycling or disposal.

## 14. Transport Information

### TDG

Not regulated as dangerous goods.

### IATA

Not regulated as dangerous goods.

### IMDG

Not regulated as dangerous goods.

## 15. Regulatory Information

**Canadian regulations** This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS status** Non-controlled

### Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes

Material name: Hydrex 6105

2414 Version #: 01 Issue date: 08-15-2014

MSDS Canada



Country(s) or region	Inventory name	On inventory (yes/no)*
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)  
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other Information

### Further information

#### HMIS® ratings

HMIS® is a registered trade and service mark of the NPCA.

Health: 0  
Flammability: 1  
Physical hazard: 0

#### NFPA ratings

Health: 0  
Flammability: 1  
Instability: 0

### Disclaimer

Veolia Water Solutions & Technologies is not able to anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use and or non respect of Veolia Water Solutions & Technologies' requirement.

### This data sheet contains changes from the previous version in section(s):

Product and Company Identification: Product and Company Identification



## 1. Identification

<b>Product identifier</b>	<b>VEOLIA ACTISAND</b>
<b>Other means of identification</b>	None.
<b>Recommended use</b>	Wastewater Treatment
<b>Recommended restrictions</b>	Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations. PROFESSIONAL USE ONLY
<b>Manufacturer/Importer/Supplier/Distributor information</b>	
<b>Manufacturer</b>	
<b>Supplier</b>	Veolia Water Technologies Canada Inc.
<b>Address</b>	2000 Argentia Road, Plaza IV, Suite 430 Mississauga, ON L5N 1W1 Canada
<b>Contact Person</b>	Hydrex Product Specialist
<b>Telephone</b>	(905) 286-4846
<b>Fax</b>	(905) 286-0488
<b>e-mail</b>	vwtcanada-hydrex@veolia.com
<b>24-Hour Emergency telephone</b>	+1-760-476-3962 (Code:333239)
<b>Supplier</b>	Not available.

## 2. Hazard(s) identification

<b>Physical hazards</b>	Not classified.	
<b>Health hazards</b>	Carcinogenicity	Category 1A
<b>Environmental hazards</b>	Not classified.	
<b>Label elements</b>		



<b>Signal word</b>	Danger
<b>Hazard statement</b>	May cause cancer.
<b>Precautionary statement</b>	
<b>Prevention</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection.
<b>Response</b>	IF exposed or concerned: Get medical advice/attention.
<b>Storage</b>	Not available.
<b>Disposal</b>	Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Other hazards</b>	None known.
<b>Supplemental information</b>	None.

## 3. Composition/information on ingredients

### Mixtures

Chemical name	Common name and synonyms	CAS number	%
Crystalline silica		14808-60-7	100

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.



#### 4. First-aid measures

<b>Inhalation</b>	Move to fresh air. Call a physician if symptoms develop or persist.
<b>Skin contact</b>	Wash off with soap and water. Get medical attention if irritation develops and persists.
<b>Eye contact</b>	Rinse with water. Get medical attention if irritation develops and persists.
<b>Ingestion</b>	Rinse mouth. Get medical attention if symptoms occur.
<b>Most important symptoms/effects, acute and delayed</b>	Coughing.
<b>Indication of immediate medical attention and special treatment needed</b>	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
<b>General information</b>	IF exposed or concerned: Get medical advice/attention. Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

#### 5. Fire-fighting measures

<b>Suitable extinguishing media</b>	Water fog. Foam. Dry chemical powder. Carbon dioxide (CO <sub>2</sub> ).
<b>Unsuitable extinguishing media</b>	Not available.
<b>Specific hazards arising from the chemical</b>	During fire, gases hazardous to health may be formed.
<b>Special protective equipment and precautions for firefighters</b>	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
<b>Fire fighting equipment/instructions</b>	Use water spray to cool unopened containers.
<b>Specific methods</b>	Use standard firefighting procedures and consider the hazards of other involved materials.
<b>General fire hazards</b>	No unusual fire or explosion hazards noted.

#### 6. Accidental release measures

<b>Personal precautions, protective equipment and emergency procedures</b>	Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.
<b>Methods and materials for containment and cleaning up</b>	The product is immiscible with water and will spread on the water surface. Stop the flow of material, if this is without risk. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.
<b>Environmental precautions</b>	Avoid discharge into drains, water courses or onto the ground.

#### 7. Handling and storage

<b>Precautions for safe handling</b>	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.
<b>Conditions for safe storage, including any incompatibilities</b>	Protect from sunlight. Store in original tightly closed container. Store away from incompatible materials (see Section 10 of the SDS). Store in cool, dry place.

#### 8. Exposure controls/personal protection

##### Occupational exposure limits

##### US. ACGIH Threshold Limit Values

Material	Type	Value	Form
VEOLIA ACTISAND	TWA	0.025 mg/m <sup>3</sup>	Respirable fraction.
Components	Type	Value	Form
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m <sup>3</sup>	Respirable fraction.



**Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)**

Material	Type	Value	Form
VEOLIA ACTISAND <b>Components</b>	TWA <b>Type</b>	0.025 mg/m3 <b>Value</b>	Respirable particles. <b>Form</b>
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable particles.

**Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)**

Material	Type	Value	Form
VEOLIA ACTISAND <b>Components</b>	TWA <b>Type</b>	0.025 mg/m3 <b>Value</b>	Respirable fraction. <b>Form</b>
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

**Canada. Manitoba OELs (Reg. 217/2006, The Workplace Safety And Health Act)**

Material	Type	Value	Form
Crystalline silica (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Material	Type	Value	Form
VEOLIA ACTISAND <b>Components</b>	TWA <b>Type</b>	0.1 mg/m3 <b>Value</b>	Respirable. <b>Form</b>
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.

**Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)**

Material	Type	Value	Form
VEOLIA ACTISAND <b>Components</b>	TWA <b>Type</b>	0.1 mg/m3 <b>Value</b>	Respirable dust. <b>Form</b>
Crystalline silica (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable dust.

**Biological limit values**

No biological exposure limits noted for the ingredient(s).

**Exposure guidelines**

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

**Appropriate engineering controls**

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

**Individual protection measures, such as personal protective equipment**

**Eye/face protection** Wear safety glasses with side shields (or goggles).

**Skin protection**

**Hand protection** Chemical resistant gloves. Suitable gloves can be recommended by the glove supplier.

**Other**

Use of an impervious apron is recommended. Chemical resistant gloves.

**Respiratory protection**

Use a particulate filter respirator for particulate concentrations exceeding the Occupational Exposure Limit.

**Thermal hazards**

Not available.

**General hygiene considerations**

Observe any medical surveillance requirements. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

**9. Physical and chemical properties****Appearance**

<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Not available.

Material name: VEOLIA ACTISAND

2725 Version #: 01 Issue date: 08-16-2016

SDS Canada



<b>Odor</b>	Not available.
<b>Odor threshold</b>	Not available.
<b>pH</b>	Not available.
<b>Melting point/freezing point</b>	Not available.
<b>Initial boiling point and boiling range</b>	Not available.
<b>Flash point</b>	Not available.
<b>Evaporation rate</b>	Not available.
<b>Flammability (solid, gas)</b>	Not available.
<b>Upper/lower flammability or explosive limits</b>	
<b>Flammability limit - lower (%)</b>	Not available.
<b>Flammability limit - upper (%)</b>	Not available.
<b>Explosive limit - lower (%)</b>	Not available.
<b>Explosive limit - upper (%)</b>	Not available.
<b>Vapor pressure</b>	< 0.0000001 kPa at 25 °C
<b>Vapor density</b>	Not available.
<b>Relative density</b>	Not available.
<b>Solubility(ies)</b>	
<b>Solubility (water)</b>	Insoluble
<b>Partition coefficient (n-octanol/water)</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.
<b>Decomposition temperature</b>	Not available.
<b>Viscosity</b>	Not available.
<b>Other information</b>	
<b>Explosive properties</b>	Not explosive.
<b>Heat of combustion (NFPA 30B)</b>	0 kJ/g
<b>Molecular formula</b>	O2Si
<b>Oxidizing properties</b>	Not oxidizing.

## 10. Stability and reactivity

<b>Reactivity</b>	The product is stable and non-reactive under normal conditions of use, storage and transport.
<b>Chemical stability</b>	Material is stable under normal conditions.
<b>Possibility of hazardous reactions</b>	No dangerous reaction known under conditions of normal use.
<b>Conditions to avoid</b>	Contact with incompatible materials.
<b>Incompatible materials</b>	Powerful oxidizers. Chlorine.
<b>Hazardous decomposition products</b>	No hazardous decomposition products are known.

## 11. Toxicological information

### Information on likely routes of exposure

<b>Inhalation</b>	Prolonged inhalation may be harmful.
<b>Skin contact</b>	No adverse effects due to skin contact are expected.
<b>Eye contact</b>	Direct contact with eyes may cause temporary irritation.
<b>Ingestion</b>	Expected to be a low ingestion hazard.



**Symptoms related to the physical, chemical and toxicological characteristics**

Coughing.

**Information on toxicological effects****Acute toxicity**

Not available.

**Skin corrosion/irritation**

Prolonged skin contact may cause temporary irritation.

**Serious eye damage/eye irritation**

Direct contact with eyes may cause temporary irritation.

**Respiratory or skin sensitization****Respiratory sensitization**

Not a respiratory sensitizer.

**Skin sensitization**

This product is not expected to cause skin sensitization.

**Germ cell mutagenicity**

No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.

**Carcinogenicity**

In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. May cause cancer. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

**ACGIH Carcinogens**

Crystalline silica (CAS 14808-60-7)

A2 Suspected human carcinogen.

**Canada - Alberta OELs: Carcinogen category**

Crystalline silica (CAS 14808-60-7)

Suspected human carcinogen.

**Canada - Manitoba OELs: carcinogenicity**

SILICA, CRYSTALLINE-.ALPHA-.QUARTZ, RESPIRABLE FRACTION (CAS 14808-60-7)

Suspected human carcinogen.

**Canada - Quebec OELs: Carcinogen category**

Crystalline silica (CAS 14808-60-7)

Suspected carcinogenic effect in humans.

**IARC Monographs. Overall Evaluation of Carcinogenicity**

Crystalline silica (CAS 14808-60-7)

1 Carcinogenic to humans.

**Reproductive toxicity**

This product is not expected to cause reproductive or developmental effects.

**Specific target organ toxicity - single exposure**

Not classified.

**Specific target organ toxicity - repeated exposure**

Not classified.

**Aspiration hazard**

Not an aspiration hazard.

**Chronic effects**

Prolonged inhalation may be harmful. Prolonged exposure may cause chronic effects.

**12. Ecological information****Ecotoxicity**

The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.

**Persistence and degradability**

No data is available on the degradability of this product.

**Bioaccumulative potential**

No data available.

**Mobility in soil**

No data available.

**Other adverse effects**

No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.



### 13. Disposal considerations

<b>Disposal instructions</b>	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
<b>Local disposal regulations</b>	Dispose in accordance with all applicable regulations.
<b>Hazardous waste code</b>	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
<b>Waste from residues / unused products</b>	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
<b>Contaminated packaging</b>	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty containers should be taken to an approved waste handling site for recycling or disposal.

### 14. Transport information

#### TDG

Not regulated as dangerous goods.

#### IATA

Not regulated as dangerous goods.

#### IMDG

Not regulated as dangerous goods.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** Not applicable.

### 15. Regulatory information

#### Canadian regulations

##### Controlled Drugs and Substances Act

Not regulated.

##### Export Control List (CEPA 1999, Schedule 3)

Not listed.

##### Greenhouse Gases

Not listed.

##### Precursor Control Regulations

Not regulated.

#### International regulations

##### Stockholm Convention

Not applicable.

##### Rotterdam Convention

Not applicable.

##### Kyoto protocol

Not applicable.

##### Montreal Protocol

Not applicable.

##### Basel Convention

Not applicable.

#### International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No



Country(s) or region	Inventory name	On inventory (yes/no)*
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

\*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)  
A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

## 16. Other Information

<b>Issue date</b>	08-16-2016
<b>Version #</b>	01
<b>Disclaimer</b>	Veolia Water Technologies is not able to anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use and or non respect of Veolia Water Technologies' requirement.
<b>Revision information</b>	Product and Company Identification: Product Review



# Safety Data Sheet

## Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

### SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name** : Sulfuric Acid 66 DEG BE

#### Recommended use of the chemical and restrictions on use

**Recommended use** : Acid.  
Fertilizers.  
Water treatment chemical

#### Manufacturer or supplier's details

**Company** : Univar Solutions USA, Inc.  
**Address** : 3075 Highland Pkwy Suite 200  
Downers Grove, IL 60515  
United States of America (USA)

#### Emergency telephone number:

Transport North America: CHEMTREC (1-800-424-9300)  
CHEMTREC INTERNATIONAL Tel # 703-527-3887

**Additional Information:** : Responsible Party: Product Compliance Department  
E-mail: SDSNA@univarsolutions.com  
SDS Requests: 1-855-429-2661  
Website: www.univarsolutions.com

### SECTION 2. HAZARDS IDENTIFICATION

#### GHS Classification

Skin corrosion : Category 1A

Serious eye damage : Category 1

#### GHS label elements

Hazard pictograms :



Signal word : Danger

Hazard statements : H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**  
P264 Wash skin thoroughly after handling.  
P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.  
**Response:**  
P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON



**Safety Data Sheet**  
**Sulfuric Acid 66 DEG BE**

Version 1.5

Revision Date: 12/01/2020

CENTER/doctor.  
P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.  
P363 Wash contaminated clothing before reuse.  
**Storage:**  
P405 Store locked up.  
**Disposal:**  
P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture : Mixture

**Hazardous components**

CAS-No.	Chemical name	Weight percent
7664-93-9	Sulfuric acid	90 - 100

Any Concentration shown as a range is due to batch variation.

**Molecular formula** : H<sub>2</sub>-O<sub>4</sub>-S**Synonyms** : Sulfuric Acid 66 DEG BE Baume, NC Sulf AC 66 Degree**SECTION 4. FIRST AID MEASURES**

- General advice** : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled** : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact** : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact** : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

- Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Clean mouth with water and drink afterwards plenty of water.  
Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.

## SECTION 5. FIREFIGHTING MEASURES

- Suitable extinguishing media : Dry chemical  
Carbon dioxide (CO<sub>2</sub>)
- Unsuitable extinguishing media : High volume water jet  
Water
- Specific hazards during fire-fighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion products : sulfur oxides
- Specific extinguishing methods : Use a water spray to cool fully closed containers.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.

## SECTION 6. ACCIDENTAL RELEASE MEASURES

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

#### SECTION 7. HANDLING AND STORAGE

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
To avoid spills during handling keep bottle on a metal tray.  
Dispose of rinse water in accordance with local and national regulations.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.
- Materials to avoid : Do not store near acids.

#### SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

##### Components with workplace control parameters

CAS-No.	Components	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
7664-93-9	Sulfuric acid	TWA (Thoracic fraction)	0.2 mg/m <sup>3</sup>	ACGIH
		TWA	1 mg/m <sup>3</sup>	NIOSH REL
		TWA	1 mg/m <sup>3</sup>	OSHA Z-1
		TWA	1 mg/m <sup>3</sup>	OSHA P0

##### Personal protective equipment

- Respiratory protection : No personal respiratory protective equipment normally required.

##### Hand protection

- Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

- Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

- Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration.



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

tration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

#### SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: liquid
Colour	: Clear, Colorless, amber
Odour	: pungent
Odour Threshold	: No data available
pH	: 0.3 @ 25 °C (77 °F)
Freezing Point (Melting point/range)	: -31 - 10.56 °C (-24 - 51.01 °F)
Boiling Point (Boiling point/boiling range)	: 217 - 330 °C (423 - 626 °F)
Flash point	: No data available
Evaporation rate	: No data available
Flammability (solid, gas)	: No data available
Upper explosion limit	: No data available
Lower explosion limit	: No data available
Vapour pressure	: < 0.3 mmHg @ 25 °C (77 °F)
Relative vapour density	: 3.4 @ 20 °C (68 °F) (Air = 1.0)
Relative density	: 1.8347 - 1.8437 @ 25 °C (77 °F) Reference substance: (water = 1)
Density	: Estimated 1.837 g/cm <sup>3</sup> @ 20 °C (68 °F)  15.3 - 15.4 lb/gal @ 25 °C (77 °F)
Solubility(ies)	
Water solubility	: completely miscible
Solubility in other solvents	: No data available
Partition coefficient: n-octanol/water	: No data available



**Safety Data Sheet**  
**Sulfuric Acid 66 DEG BE**

Version 1.5

Revision Date: 12/01/2020

Auto-ignition temperature : No data available

Thermal decomposition : 340 °C

---

**SECTION 10. STABILITY AND REACTIVITY**

Reactivity : No dangerous reaction known under conditions of normal use.

Chemical stability : Stable under normal conditions.

Possibility of hazardous reactions : Acid reacts with most metals to release hydrogen gas which can form explosive mixtures with air.  
Reacts with organic materials and may cause ignition of finely divided materials on contact.

Conditions to avoid : Avoid contact with combustible material (paper, wool, oil).

Incompatible materials : Alkalies  
Metals  
carbide  
chlorates  
fuminates  
nitrates  
Organic materials  
Strong oxidizing agents  
strong reducing agents  
water  
Sulphur compounds

Hazardous decomposition products : corrosive vapors  
Sulphur oxides  
toxic fumes

---

**SECTION 11. TOXICOLOGICAL INFORMATION****Skin corrosion/irritation****Product:**

Remarks: Extremely corrosive and destructive to tissue.

**Components:****7664-93-9:**

Species: Rabbit

Result: Causes severe burns.



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

#### Serious eye damage/eye irritation

**Product:**

Remarks: May cause irreversible eye damage.

**Components:****7664-93-9:**

Species: Rabbit

Result: Risk of serious damage to eyes.

#### Germ cell mutagenicity

**Components:****7664-93-9:**

Genotoxicity in vitro

: Test Type: Ames test

Species: Salmonella typhimurium

Metabolic activation: with and without metabolic activation

Result: negative

#### Carcinogenicity

**IARC**

Group 1: Carcinogenic to humans

7664-93-9

Sulfuric acid

**OSHA**

No component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

**NTP**

Known to be human carcinogen

7664-93-9

Sulfuric acid

#### STOT - single exposure

**Product:**

Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with respiratory tract irritation.

#### Further information

**Product:**

Remarks: No data available

---

## SECTION 12. ECOLOGICAL INFORMATION

**Ecotoxicity**

No data available

**Persistence and degradability**

No data available



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

#### Bioaccumulative potential

No data available

#### Mobility in soil

No data available

#### Other adverse effects

##### Product:

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances

Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

---

## SECTION 13. DISPOSAL CONSIDERATIONS

#### Disposal methods

Waste from residues : Dispose of in accordance with all applicable local, state and federal regulations.  
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897

Dispose of in accordance with all applicable local, state and federal regulations.  
For assistance with your waste management needs - including disposal, recycling and waste stream reduction, contact Univar Solutions ChemCare: 1-800-909-4897

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

---

## SECTION 14. TRANSPORT INFORMATION

#### DOT (Department of Transportation):

UN1830, SULFURIC ACID, 8, II

#### IATA (International Air Transport Association):

UN1830, SULPHURIC ACID, 8, II



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

**IMDG (International Maritime Dangerous Goods):**  
UN1830, SULPHURIC ACID, 8, II

#### SECTION 15. REGULATORY INFORMATION

**WHMIS Classification** : D2A: Very Toxic Material Causing Other Toxic Effects  
D2B: Toxic Material Causing Other Toxic Effects  
E: Corrosive Material

#### EPCRA - Emergency Planning and Community Right-to-Know Act

##### CERCLA Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulfuric acid	7664-93-9	1000	1000

##### SARA 304 Extremely Hazardous Substances Reportable Quantity

Components	CAS-No.	Component RQ (lbs)	Calculated product RQ (lbs)
Sulfuric acid	7664-93-9	1000	1000

**SARA 311/312 Hazards** : Skin corrosion or irritation  
Serious eye damage or eye irritation

**SARA 302** : No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

#### Clean Air Act

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 111 SOCM I Intermediate or Final VOC's (40 CFR 60.489).

#### Clean Water Act

The following Hazardous Substances are listed under the U.S. CleanWater Act, Section 311, Table 116.4A:

7664-93-9 Sulfuric acid

The following Hazardous Chemicals are listed under the U.S. CleanWater Act, Section 311, Table 117.3:

7664-93-9 Sulfuric acid

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

#### Massachusetts Right To Know

7664-93-9 Sulfuric acid

#### Pennsylvania Right To Know

7664-93-9 Sulfuric acid

7732-18-5 Water



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

#### California Prop 65

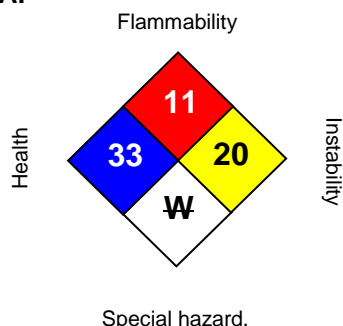
**⚠ WARNING:** This product can expose you to chemicals including Sulfuric acid, which is/are known to the State of California to cause cancer. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

#### The components of this product are reported in the following inventories:

TSCA	: On TSCA Inventory
DSL	: All components of this product are on the Canadian DSL
AICS	: On the inventory, or in compliance with the inventory
NZIoC	: Not in compliance with the inventory
ENCS	: On the inventory, or in compliance with the inventory
KECI	: On the inventory, or in compliance with the inventory
PICCS	: On the inventory, or in compliance with the inventory
IECSC	: On the inventory, or in compliance with the inventory

## SECTION 16. OTHER INFORMATION

#### NFPA:



#### HMIS III:

HEALTH	3*
FLAMMABILITY	1
PHYSICAL HAZARD	2

0 = not significant, 1 = Slight,  
2 = Moderate, 3 = High  
4 = Extreme, \* = Chronic

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) [SDSNA@univarsolutions.com](mailto:SDSNA@univarsolutions.com).

The information accumulated is based on the data of which we are aware and is believed to be correct as of the date hereof. Since this information may be applied under conditions



## Safety Data Sheet

### Sulfuric Acid 66 DEG BE

Version 1.5

Revision Date: 12/01/2020

beyond our control and with which we may be unfamiliar and since data made become available subsequently to the date hereof, we do not assume any responsibility for the results of its use. Recipients are advised to confirm in advance of need that the information is current, applicable, and suitable to their circumstances. This SDS has been prepared by Univar Solutions Product Compliance Department (1-855-429-2661) SDSNA@univarsolutions.com.

**Revision Date** : 12/01/2020

**Legacy SDS:** : R0001174

**Material number:**

55254, 104393, 153270, 136507, 170942, 20261, 747387, 746673, 572695, 549278, 554154, 105608, 55212, 74712, 55684, 56633, 72048, 152711, 88318, 89725, 87701, 592090, 52439, 89466, 107474, 56705, 88445, 108413, 106107

Key or legend to abbreviations and acronyms used in the safety data sheet			
ACGIH	American Conference of Government Industrial Hygienists	LD50	Lethal Dose 50%
AICS	Australia, Inventory of Chemical Substances	LOAEL	Lowest Observed Adverse Effect Level
DSL	Canada, Domestic Substances List	NFPA	National Fire Protection Agency
NDSL	Canada, Non-Domestic Substances List	NIOSH	National Institute for Occupational Safety & Health
CNS	Central Nervous System	NTP	National Toxicology Program
CAS	Chemical Abstract Service	NZIoC	New Zealand Inventory of Chemicals
EC50	Effective Concentration	NOAEL	No Observable Adverse Effect Level
EC50	Effective Concentration 50%	NOEC	No Observed Effect Concentration
EGEST	EOSCA Generic Exposure Scenario Tool	OSHA	Occupational Safety & Health Administration
EOSCA	European Oilfield Specialty Chemicals Association	PEL	Permissible Exposure Limit
EINECS	European Inventory of Existing Chemical Substances	PICCS	Philippines Inventory of Commercial Chemical Substances
MAK	Germany Maximum Concentration Values	PRNT	Presumed Not Toxic
GHS	Globally Harmonized System	RCRA	Resource Conservation Recovery Act
>=	Greater Than or Equal To	STEL	Short-term Exposure Limit
IC50	Inhibition Concentration 50%	SARA	Superfund Amendments and Reauthorization Act.
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
IECSC	Inventory of Existing Chemical Substances in China	TWA	Time Weighted Average
ENCS	Japan, Inventory of Existing and New Chemical Substances	TSCA	Toxic Substance Control Act
KECI	Korea, Existing Chemical Inventory	UVCB	Unknown or Variable Composition, Complex Reaction Products,



**Safety Data Sheet**  
**Sulfuric Acid 66 DEG BE**

Version 1.5

Revision Date: 12/01/2020

			and Biological Materials
<=	Less Than or Equal To	WHMIS	Workplace Hazardous Materials Information System
LC50	Lethal Concentration 50%		