



November 27, 2014

Petroleum Branch
Manitoba Mineral Resources
Box 1359
227 King Street West
Viriden MB, R0M 2C0

Attention: Allan Gervin,

RE: Application for 15-18-07-29 W1M Battery -Red River Oil Inc.

Red River Oil Inc. hereby submits an application for the licensing of a battery (waterflood injection facility) at LSD 15-18-07-29 W1M. The site is converted from a water source well site with injection equipment to a produced water storage and injection facility with distribution to the Unit #9 water injectors located in Section 30-7-29 W1M. Produced Water is to be trucked in from sweet single well batteries owned and operated by Red River Oil.

Section 75

- (1)(a)** The application fee and levy for a Battery Operating Permit of \$1000 has been included with this application.
- (1)(b)** Red River Oil is currently operating over 75 wells and a battery facility in Manitoba and is believed to be in good standing with the government. Therefore, there should be no need for a performance deposit.
- (1)(c)** Two copies of the lease Survey Plan are included in Appendix A.
- (1)(d)** The landowners within 1.5 km have been notified. Names and addresses as well as descriptions of consultation and a summary table of responses has been included in an attached document.
- (1)(e)** No oil will be produced to the facility. Only clean, produced Water will be trucked in from single well battery sites in the area. The water from these wells has a very low producing GOR and with the initial SWB tank storage and trucking operation to the 15-18 lease, will essentially be degassed and any vapor off the tanks is too small to measure.

Estimated Oil Production	Estimated Water Production	Estimated Gas Production
0 m ³ /d	60 m ³ /d; Design: 130 m ³ /d	Negligible

Gas:

- (i) 0 m³/d Fuel Gas - All motors are electric
- (ii) 0 m³/d Flared Gas

(iii) Venting Rate: Too small to measure ($<<5 \text{ m}^3/\text{d}$) – Water has been degassed in production tank at single well batteries and through trucking operations.

(1)(f) An analysis of produced gas from wells in the area, which are representative of the single well batteries where produced water is sourced, has been included in Appendix B for reference. No measureable gas is expected at proposed Injection Facility.

(1)(g) The following table lists the required information for process vessels. There are a total of 2 storage tanks and 4 filters used as process vessels for the facility.

Process Vessel	Manufacturer	Dimensions	CRN	Max Flow Capacity	Design Pressure & Temp	Operating Pressure & Temp
Primary Tank: T-300	Rocket Sales	12'D x 20' H	-	-	6.9 / -0.17 kPag @ 38C	Atm
Secondary Tank: T-301	Rocket Sales	12'D x 20' H	-	-	6.9 / -0.17 kPag @ 38C	Atm
Primary Filter: F-101	Filter Solutions Inc.	24" ID x 5'4"	M0404.5123467	1365 m^3/d	1034 kPag @ 37 °C	400 kPag @ 10 °C
Secondary Filter: F-102	Filter Solutions Inc.	24" ID x 5'4"	D2736.612345	1365 m^3/d	1034 kPag @ 37 °C	380 kPag @ 10 °C
Secondary Filter: F-103	Filter Solutions Inc.	24" ID x 5'4"	D2736.612345	1365 m^3/d	1034 kPag @ 37 °C	360 kPag @ 10 °C
Polishing Filter: F-104	Filter Solutions Inc.	10" OD x 4'10"	A6029.312574	273 m^3/d	1034 kPag @ 37 °C	340 kPag @ 10 °C

(1)(h) There is no well production into the facility and therefore no well testing associated with the facility.

(1)(i) There are no flare or vapour recovery systems at the battery as no appreciable natural gas is to be vented from the Tanks. Gas analysis for representative wells in the area indicates the H₂S level is 0 ppm.

(1)(j) No appreciable natural gas is to be vented from the Tanks.

(i) Volumes of gas are not sufficient for flaring

(ii) Water will have been degassed at the single well batteries and through trucking operations. Vented gas volume will be extremely minimal and is too small to measure.

(iii) There is minimal gas volume of a 0-trace H₂S content. Odours are not expected to be problematic and the nearest residence is 2.1 km away.

(1)(k) No air dispersion modelling has been performed as there is no gas or H₂S production to the facility.

(1)(l) Plot plan has been attached in Appendix C.

(1)(m) A Process and Instrumentation Diagram has been included in Appendix D in place of a process flow diagram. The P&ID shows all meters, tanks, water injection pumps, valves, pressure relief valves, and emergency shutdown instrumentation. This was deemed more suitable than a process flow diagram.

(1)(n) Plans and facilities for produced water injection are included in P&IDs attached in Appendix F

Any further information that Petroleum Branch requires will gladly be submitted as an addendum to this application. I trust the above and attached to be sufficient for your review; however if there are any questions or concerns, please do not hesitate to contact:

- Andrew Belletti, Orion Projects @ (403) 930-7199, ext 1119
- Kim Beloglowka, Red River Oil Inc. @ (403) 930-2831

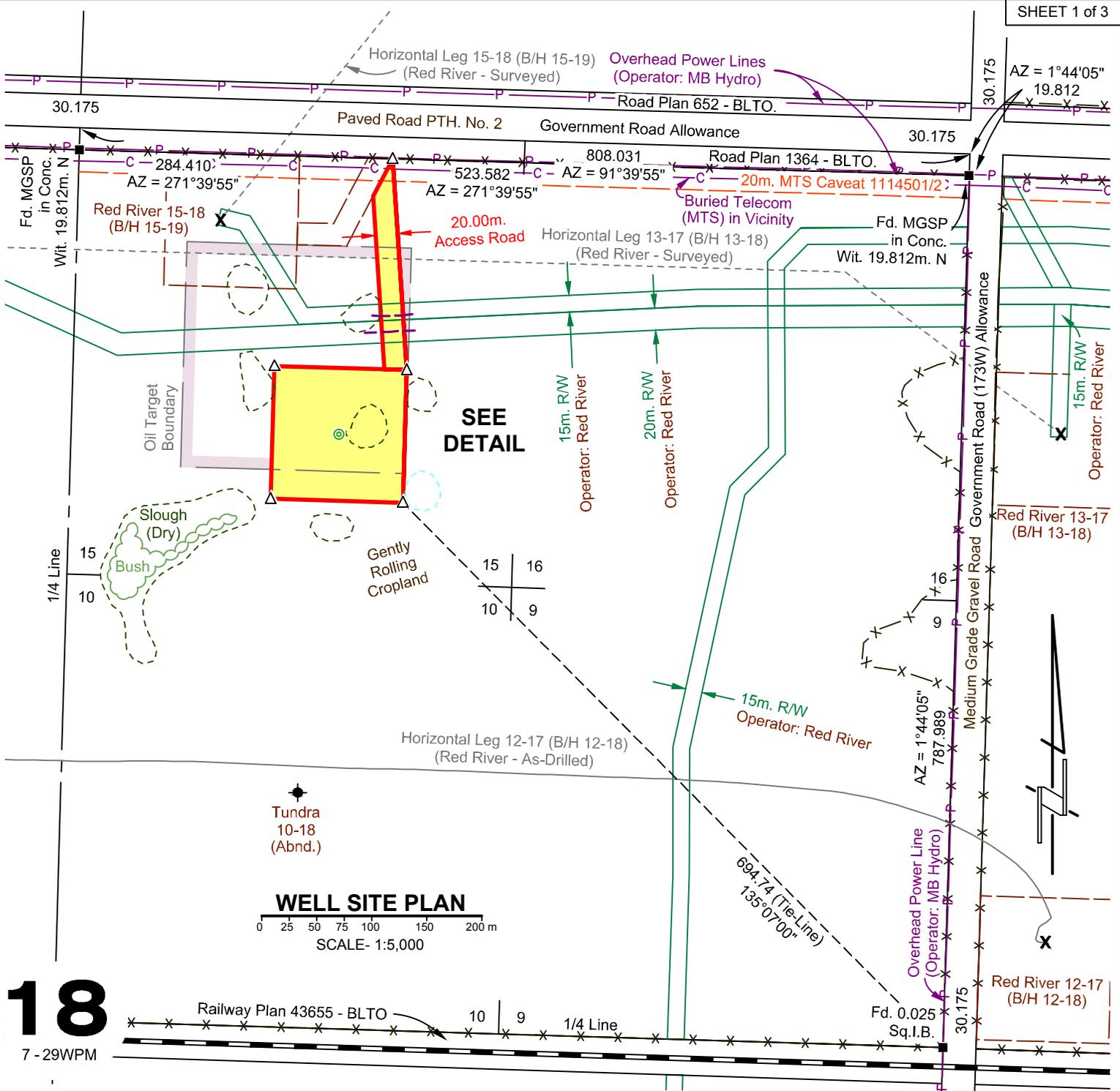
Best Regards,

A handwritten signature in blue ink, appearing to read 'Kim Beloglowka', written over a printed name.

Kim Beloglowka
VP Operations
Red River Oil Inc.

Cc Andrew Belletti, Orion Projects

APPENDIX A – LEASE SURVEY PLAN



Plan Showing Survey of RED RIVER DALY SINCLAIR PROV 15-18-7-29WPM

Well Site and Access Road
L.S.15A Sec.18 Twp.7 Rge.29 WPM

R.M. of Pipestone

ELEVATION ON GROUND
 AT WELL LOCATION = **532.66**
 CO-ORDINATES:

270.00 m. S. of N. Bdy. }
 565.00 m. W. of E. Bdy. } Sec. 18

GEO Co-ordinates		UTM Co-ordinates	
49°34'28.192"	} NAD 83	5494096.523 N	} 326296.429 E
101°24'09.828"		5493876.162 N	
49°34'28.179"	} NAD 27	5493876.162 N	} 326324.318 E
101°24'08.158"		5493876.162 N	

Target Co-ordinates
 33.51 N }
 61.13 W } From SE Corner of Oil Target

Datum: Elevations shown are in Geodetic Datum from the Province of Manitoba Mon. 82R755

I certify that the survey represented by this plan is correct to the best of my knowledge and was completed on the 8th day of November, 2012.

Ken Baley (Signature)
 Manitoba Land Surveyor

David [Signature]
 Witness



Azimuths are NAD 83 (Zone 14) UTM Grid.
 All distances shown are horizontal and at ground level.
 Combined Scale factor derived = 0.999893

AREAS:	HECTARES	ACRES
Well Site	= 1.440	3.56
Access Road	= 0.348	0.86
Total	= 1.788	4.42

CERTIFICATE OF TITLE:
 NE 18-7-29WPM CT No. 1773934/2
 53791 Manitoba Ltd.

- Legal Survey Posts (found / planted) ----- ■
- Planted Wood Hub ----- △
- Surveyed Well Centre ----- ● Producer ----- ●
- Standing Well ----- ○ Abandoned Producer ----- ✦
- Injection Well (Former Producer) ----- ● Abandoned Dry ----- ✦
- Abandoned Water Injection ----- ✦ Injection Well ----- ✦
- Surface Location - Horizontal / Directional / Slant ----- x
- Portions referred to outlined thus -----
- Distances are in metres.

OPERATOR :
RED RIVER OIL INC.

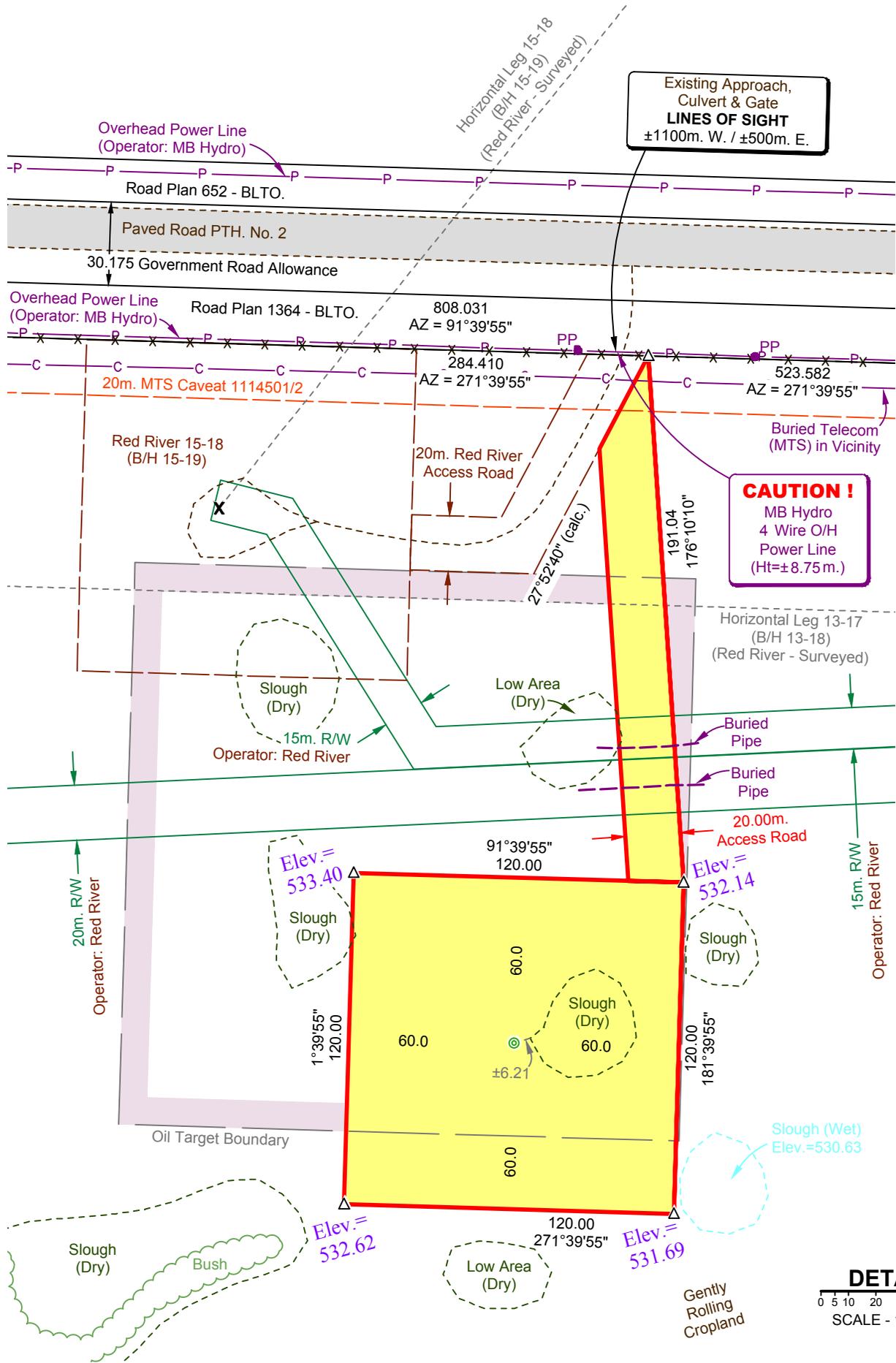
Altus Geomatics
 Manitoba
 Toll Free: 1-800-465-6233
 www.altusgeomaticsmb.com

AMS
 MEMBER

NTS Sheet: 62 F/11	
Client File No.:	AFE No.:
REV. 1	Revision:
Date: Nov. 15, 2012.	Job No.: 159619-V
File: 159619W	Initials: KD - AV - PFS



RED RIVER OIL INC.



The Proposed Well :

	YES	NO
- Is at least 1.5 km. from the Corporate Limits of a City, Town or Village	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is at least 75 m. from any shoreline	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is at least 75 m. from any Surface Improvements	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is at least 45 m. from any Surveyed Road	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is at least 75 m. from any Aircraft Runway or Taxiway	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Is at least 75 m. from any Water Well	<input checked="" type="checkbox"/>	<input type="checkbox"/>
- Approximately 3.8 km. from the nearest Urban Centre (Antler)		
- Approximately 2.1 km. from the nearest Residence (SE¼ 17-7-29WPM)		

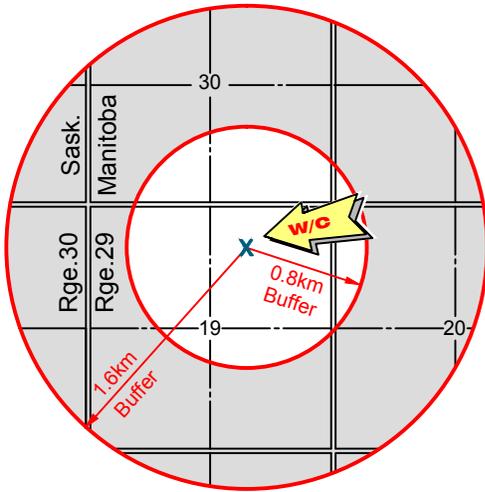


Facilities shown on this plan are for informational purposes only. prior to any construction on lease or access road, RED RIVER OIL INC., MTS Communications Inc., Manitoba Hydro, and Manitoba Hydro-Gas Operations **MUST** be contacted for location of any underground facilities that may exist.

RED RIVER DALY SINCLAIR PROV 15-18-7-29WPM	
Client File No.:	AFE No.:
REV. 0	Revision:
Date: Nov. 15, 2012.	Job No.: 159619-V
File: 159619W	Initials: KD - AV - PFS



RED RIVER OIL INC.



Legend:

- HOSPITAL
- LIFE FLIGHT EMERGENCY SERVICE
- SECONDARY HIGHWAY
- PRIMARY HIGHWAY
- MUNICIPAL ROAD
- TRANSCANADA HIGHWAY

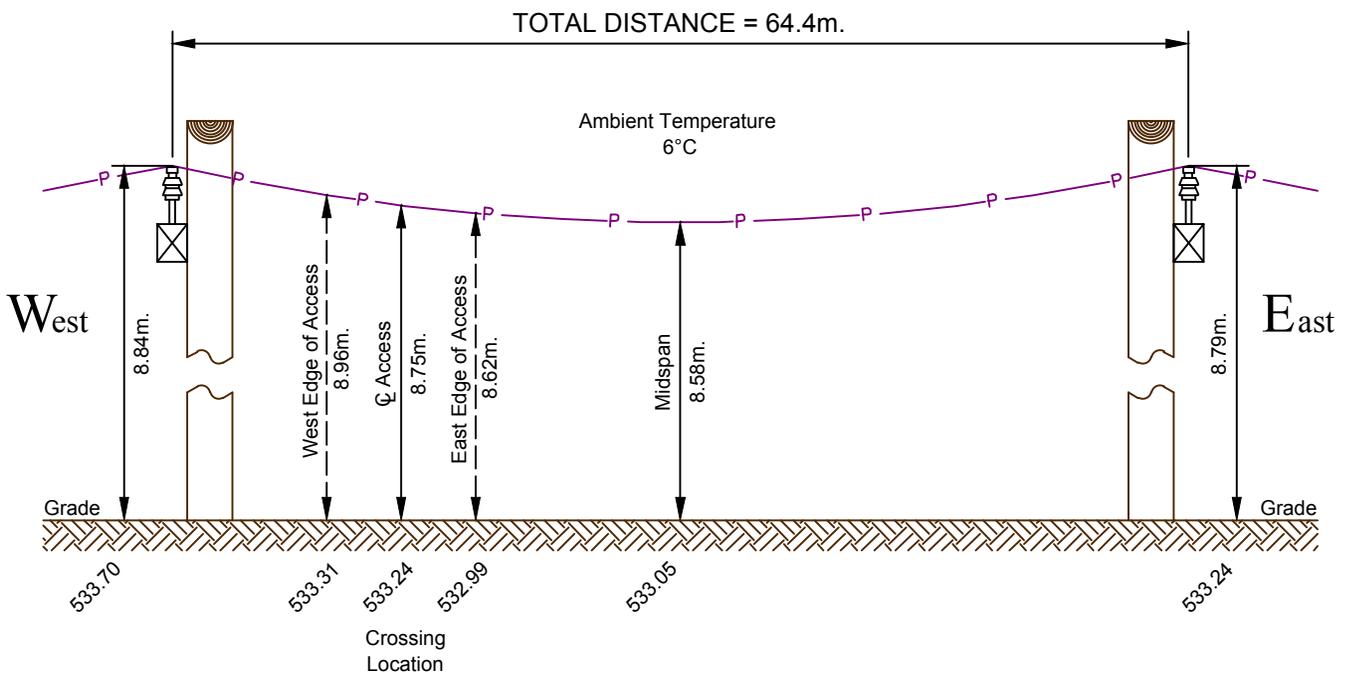
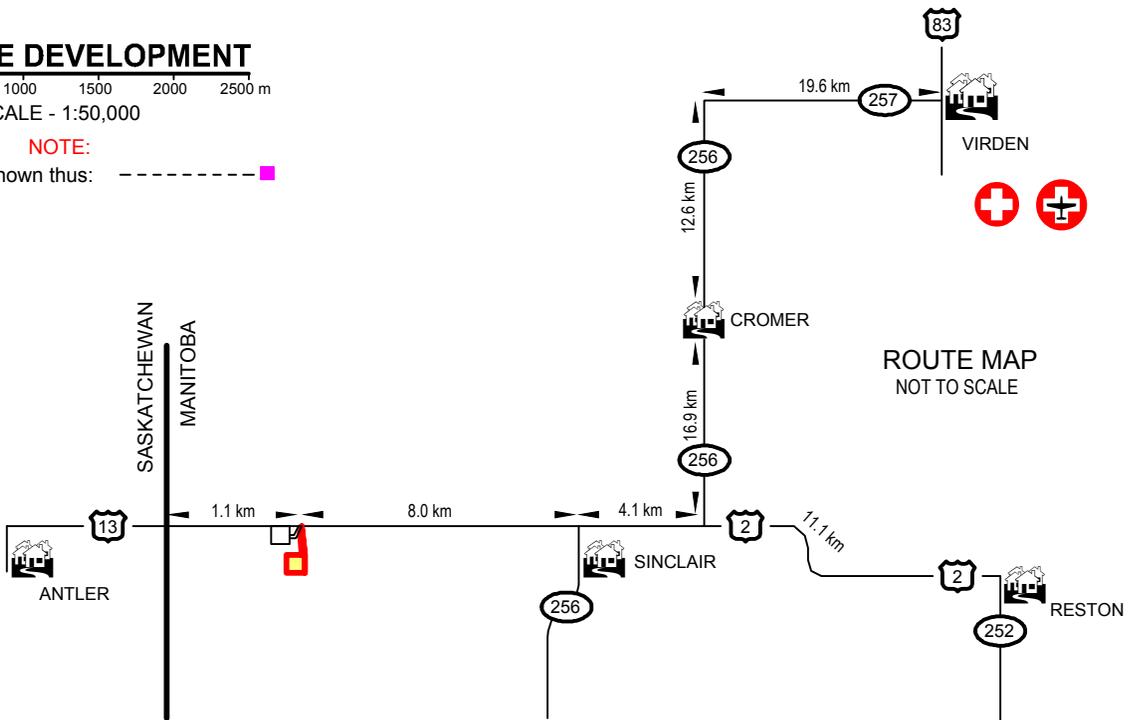
SURFACE DEVELOPMENT



SCALE - 1:50,000

NOTE:

Residences are shown thus: - - - - -



POWER LINE DETAIL

Not to Scale

RED RIVER DALY SINCLAIR PROV 15-18-7-29WPM	
Client File No.:	AFE No.:
REV.	Revision:
	Date: Nov. 15, 2012.
	Job No.: 159619-V
	File: 159619W
	Initials: KD - AV - PFS

APPENDIX B – PRODUCTION WELL PRODUCED GAS ANALYSIS



EXTENDED GAS ANALYSIS

Z0000495 - 2 CONTAINER IDENTITY	6823 METER ID	52134-2011-1650 WELL LICENSE NUMBER	LABORATORY FILE NUMBER
Fairbome Energy Ltd.			2
OPERATOR			PAGE
100/13-19-007-29W1/00 LOCATION (UWI)	Fairbome Sinclair Hz 13-19-7-29 WELL NAME		KB ELEV (m) GR ELEV (m)
Sinclair FIELD OR AREA	Fairbome Energy POOL OR ZONE		SAMPLER

TEST TYPE AND NO. Casing at 13-18	TEST RECOVERY
--------------------------------------	---------------

	POINT OF SAMPLE	SAMPLE POINT ID
	PUMPING _____ FLOWING _____ GAS LIFT _____ SWAB _____	
	WATER _____ m ³ /d OIL _____ m ³ /d GAS _____ m ³ /d	

TEST INTERVAL or PERFS (meters)			
SEPARATOR	RESERVOIR	OTHER	@ _____ °C
	414		430 @ 22 °C
09:41 Hrs Pressures, kPa (gauge)		Temperatures, °C	
2011 05 11	2011 05 13	2011 05 20	TUN
DATE SAMPLED (Y/M/D)	DATE RECEIVED (Y/M/D)	DATE ANALYZED (Y/M/D)	ANALYST

COMPONENT	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	mL/m ³ AIR FREE AS RECEIVED
H ₂	0.0002	0.0002	
He	0.0008	0.0008	
N ₂	0.3092	0.3093	
CO ₂	0.0004	0.0000	
H ₂ S	0.0000	0.0000	
C ₁	0.3663	0.3666	
C ₂	0.1336	0.1336	474.8
C ₃	0.1406	0.1406	516.7
iC ₄	0.0139	0.0139	60.7
C ₄	0.0257	0.0257	108.1
iC ₅	0.0032	0.0032	15.6
C ₅	0.0035	0.0035	16.9
C ₆	0.0015	0.0015	7.5
C ₇₊	0.0011	0.0011	5.8
Total	1.0000	1.0000	1,206.1

CALCULATED GROSS HEATING VALUE MJ/m ³ @ 15°C & 101.325 kPa (abs.)		CALCULATED VAPOR PRESSURE kPa (abs.) @ 40 °C	
42.28		42.29	
MOISTURE FREE		MOISTURE & ACID GAS FREE	
PENTANES PLUS			
CALCULATED TOTAL SAMPLE PROPERTIES (AIR=1) @ 15°C & 101.325 kPa			
MOISTURE FREE AS SAMPLED			
1.175 kg/m ³		0.959	
DENSITY		RELATIVE DENSITY	
RELATIVE MOLECULAR MASS			
CALCULATED PSEUDOCRITICAL PROPERTIES			
AS SAMPLED ACID GAS FREE			
4166.3 kPa (abs)		222.8 K	
pPc		pTc	
4165.0 kPa (abs)		222.8 K	
pPc		pTc	
C ₇₊ PROPERTIES @ 15°C & 101.325 kPa		MOLE FRACTION LOCATION METHOD	
745.9 kg/m ³		93.1	
DENSITY		MOLECULAR WEIGHT	
		0.0000000 Laboratory Chromatograph	
HYDROGEN SULPHIDE			

REMARKS:
Field sampling temperature was not provided.

NOTE: THE GROSS HEATING VALUE HAS BEEN CALCULATED IN ACCORDANCE TO AGA REPORT #5 AND ALL PROPERTIES HAVE BEEN CALCULATED UTILIZING PHYSICAL CONSTANTS AND BOILING POINT GROUPING.



EXTENDED GAS ANALYSIS

V0008507 - 1 CONTAINER IDENTITY	Fairbome Energy Ltd. METER ID	Fairbome Sinclair 13-18-7-29 WELL LICENSE NUMBER	52134-2011-1650 LABORATORY FILE NUMBER
100/13-18-007-29W1/00 LOCATION (UWI)	Fairbome Sinclair 13-18-7-29 OPERATOR		1 PAGE
Sinclair FIELD OR AREA		Fairbome Energy POOL OR ZONE	

TEST TYPE AND NO. Casing at 13-17 TEST RECOVERY

	POINT OF SAMPLE	SAMPLE POINT ID
	PUMPING _____ FLOWING _____ GAS LIFT _____ SWAB _____	
	WATER _____ m ³ /d OIL _____ m ³ /d GAS _____ m ³ /d	

TEST INTERVAL or PERFS (meters) 250

SEPARATOR	RESERVOIR	OTHER
	@ _____ °C	@ 22 °C
CONTAINER WHEN SAMPLED		
CONTAINER WHEN RECEIVED		

09:45 Hrs Pressures, kPa (gauge) _____ Temperatures, °C _____

2011 05 11 DATE SAMPLED (Y/M/D)	2011 05 13 DATE RECEIVED (Y/M/D)	2011 05 20 DATE ANALYZED (Y/M/D)	TUN ANALYST	AMT. AND TYPE CUSHION	@ _____ °C MUD RESISTIVITY
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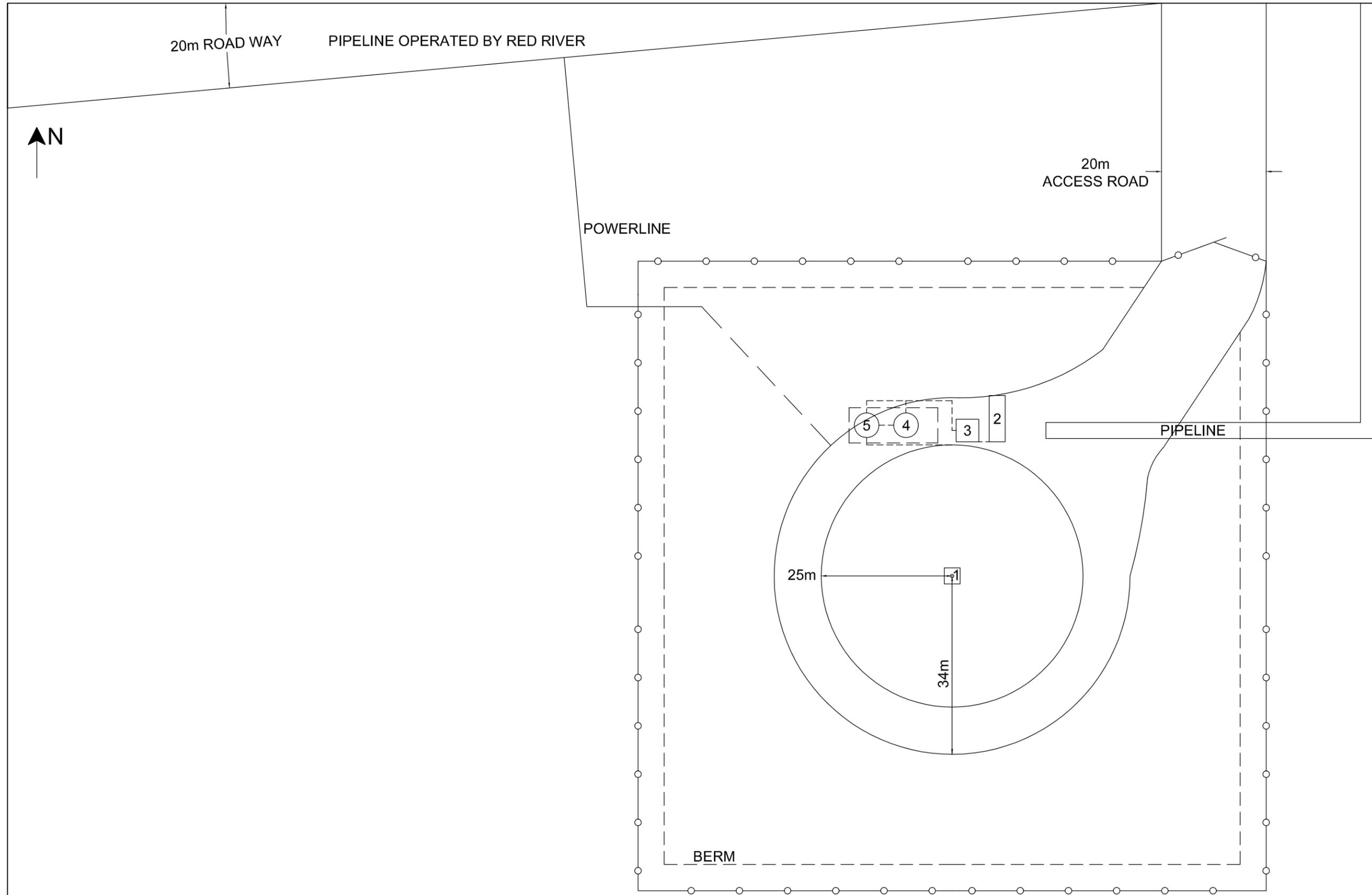
COMPONENT	MOLE FRACTION AIR FREE AS RECEIVED	MOLE FRACTION AIR FREE ACID GAS FREE	mL/m ³ AIR FREE AS RECEIVED
H ₂	0.0001	0.0001	
He	0.0017	0.0017	
N ₂	0.4422	0.4426	
CO ₂	0.0009	0.0000	
H ₂ S	0.0000	0.0000	
C ₁	0.3836	0.3839	
C ₂	0.0489	0.0489	173.8
C ₃	0.0589	0.0589	216.4
iC ₄	0.0168	0.0169	73.4
C ₄	0.0288	0.0289	121.2
iC ₅	0.0065	0.0065	31.7
C ₅	0.0070	0.0070	33.9
C ₆	0.0031	0.0031	16.6
C ₇₊	0.0015	0.0015	8.1
Total	1.0000	1.0000	675.1

CALCULATED GROSS HEATING VALUE MJ/m ³ @ 15°C & 101.325 kPa (abs.) <u>31.69</u>	CALCULATED GROSS HEATING VALUE MJ/m ³ @ 15°C & 101.325 kPa (abs.) <u>31.73</u>	CALCULATED VAPOR PRESSURE kPa (abs.) @ 40 °C <u>107.9</u>
MOISTURE FREE	MOISTURE & ACID GAS FREE	PENTANES PLUS
CALCULATED TOTAL SAMPLE PROPERTIES (AIR=1) @ 15°C & 101.325 kPa MOISTURE FREE AS SAMPLED		
<u>1.129</u> kg/m ³	<u>0.921</u>	<u>26.7</u>
DENSITY	RELATIVE DENSITY	RELATIVE MOLECULAR MASS
CALCULATED PSEUDOCRITICAL PROPERTIES AS SAMPLED ACID GAS FREE		
<u>3992.3</u> kPa (abs.)	<u>193.7</u> K	<u>3989.1</u> kPa (abs.) <u>193.6</u> K
pPc	pTc	pPc pTc
C ₇₊ PROPERTIES @ 15°C & 101.325 kPa		MOLE FRACTION LOCATION METHOD
<u>739.5</u> kg/m ³	<u>93.9</u>	<u>0.0000000</u> Laboratory Chromatograph
DENSITY	MOLECULAR WEIGHT	HYDROGEN SULPHIDE

REMARKS:
Field sampling temperature was not provided.

NOTE: THE GROSS HEATING VALUE HAS BEEN CALCULATED IN ACCORDANCE TO AGA REPORT #5 AND ALL PROPERTIES HAVE BEEN CALCULATED UTILIZING PHYSICAL CONSTANTS AND BOILING POINT GROUPING.

APPENDIX C – PLOT PLAN DIAGRAM



- LEGEND**
- 1. WATER WELL
 - 2. PUMP BUILDING
 - 3. FILTRATION BUILDING
 - 4. WATER STORAGE TANK#1
 - 5. WATER STORAGE TANK#2

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	09/09/13	ISSUED FOR CONSTRUCTION	AJ	AB	DH
1	11/21/14	ISSUED FOR CONSTRUCTION	HB	AB	DH

ENGINEER STAMP

ORION PROJECTS

THIRD PARTY LOGO

SCALE: 1:75 SIZE: D

EPCM PROJECT#: 2013-RRO-01



RED RIVER OIL
SINCLAIR WATERFLOOD FACILITY
LSD 15-18-7-29-W1
PLOT PLAN DIAGRAM

DWG# RRO-15-18-G-PLT-001 SHT 1 OF 1 REV 1

APPENDIX D - PROCESS & INSTRUMENTATION DIAGRAMS (P&IDS)

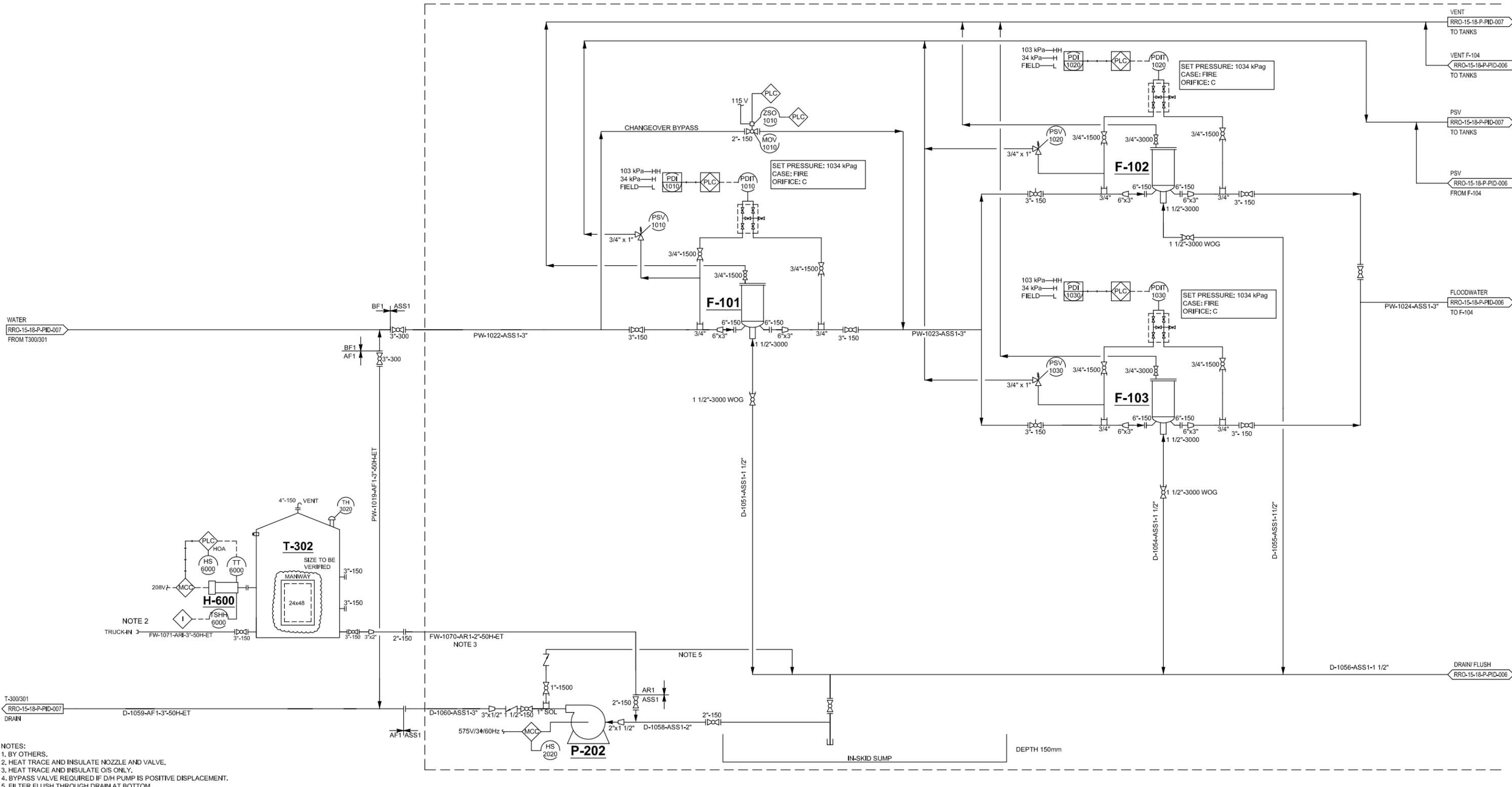
H-600
FLUSH WATER TANK HEATER
 MODEL: BUCAN FH3-306N830T
 OUTPUT: 6 kw
 POWER: 208V/1#60Hz

T-302
FILTER FLUSH FRESH WATER TANK
 SIZE: 52 BBL
 DIMENSIONS: 6' x 7'
 CODE: API 12F
 DESIGN PRESSURE: 6oz/0.4oz

P-202
SUMP PUMP/ FLUSH PUMP
 MODEL: GORMAN RUPP SERIES 10 11 1/2 A20-B
 FLOWRATE: 45 GPM
 HEAD: 24m (240 kPag)
 POWER: 3 hp 575V/3 #60Hz

F-101
PRIMARY FILTER
 MODEL: FPS FV-FS-1080-6F-316SS
 SIZE: 610mm ID x 1625mm (24" ID x 5'-4")
 MAWP: 1034 kPa @ 37°C
 MDMT: -29°C
 FILTRATION PARTICLE SIZE: 1 MICRON

F-102/103
SECONDARY FILTERS
 MODEL: FPS FV-FS-1080-6F-CS
 SIZE: 610mm ID x 1625mm (24" ID x 5'-4")
 MAWP: 1034 kPa @ 37°C
 MDMT: -29°C
 FILTRATION PARTICLE SIZE: 1 MICRON



NOTES:
 1. BY OTHERS.
 2. HEAT TRACE AND INSULATE NOZZLE AND VALVE.
 3. HEAT TRACE AND INSULATE O/S ONLY.
 4. BYPASS VALVE REQUIRED IF D/H PUMP IS POSITIVE DISPLACEMENT.
 5. FILTER FLUSH THROUGH DRAIN AT BOTTOM.

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	09/09/13	ISSUED FOR CONSTRUCTION	AJ	AB	DH

ENGINEER STAMP

ORION PROJECTS

THIRD PARTY LOGO

SCALE: NTS SIZE: D

EPCM PROJECT#: 2013-RR0-01

RED RIVER OIL INC.

RED RIVER OIL
 SINCLAIR WATERFLOOD FACILITY
 LSD 15-18-7-29-W1
 PIPING AND INSTRUMENTATION DIAGRAM

DWG# RRO-15-18-P-PID-005 SHT 1 OF 1 REV 0

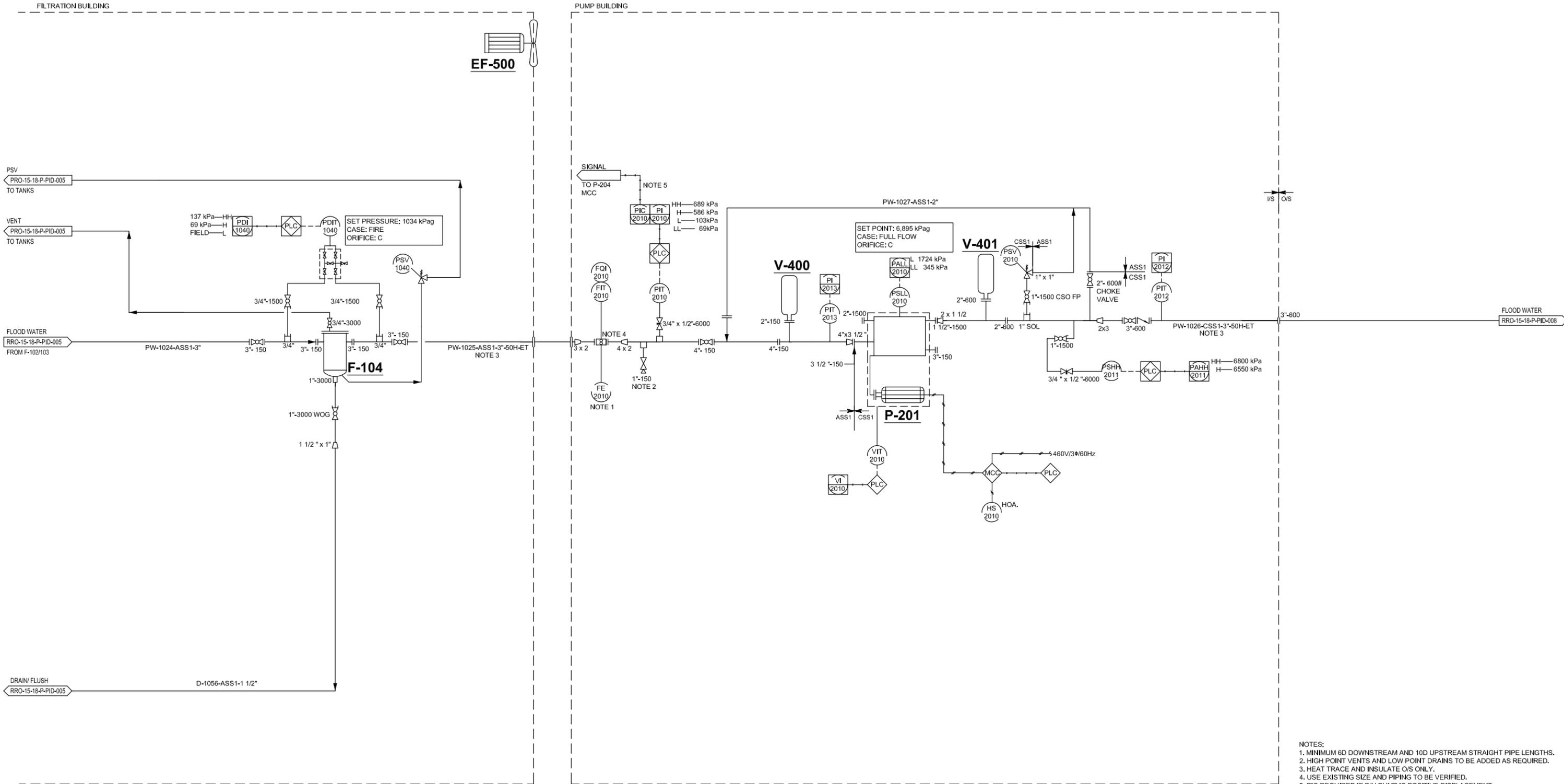
EF-500
EXHAUST FAN

F-104
FINE PARTICLE FILTER
MODEL: FPS FV-FS-6RX44-316SS-3FL
SIZE: (6) 2.5" OD x 40" LG
MAWP: 1034 kPa @ 37°C
MDMT: -29°C
FILTRATION PARTICLE SIZE: 0.5 MICRON

V-400
SUCTION PULSATION DAMPENER
MODEL: HYDRACELL CII/F
SIZE: 6.1L
MAWP: 1500psig @ 37°C
MDMT: -23°C

V-401
DISCHARGE PULSATION DAMPENER
MODEL: HYDRACELL H2520VF
SIZE: 2.9L
MAWP: 1000psig @ 37°C
MDMT: -23°C

P-201
MAIN INJECTION PUMP
MODEL: HYDRACELL T8045 ADBGHYEA
FLOWRATE: 5.4m³/hr
HEAD: 82m (5516 kPa)
POWER: 50hp 460V/3#60 Hz



- NOTES:
1. MINIMUM 6D DOWNSTREAM AND 10D UPSTREAM STRAIGHT PIPE LENGTHS.
 2. HIGH POINT VENTS AND LOW POINT DRAINS TO BE ADDED AS REQUIRED.
 3. HEAT TRACE AND INSULATE O/S ONLY.
 4. USE EXISTING SIZE AND PIPING TO BE VERIFIED.
 5. PIC REQUIRED IF D/H PUMP IS POSITIVE DISPLACEMENT.

DRAWING#	REFERENCE DRAWING TITLE

REV	DATE	DESCRIPTION	DWN	CHKD	APPR
0	09/09/13	ISSUED FOR CONSTRUCTION	AJ	AB	DH

ENGINEER STAMP

ORION PROJECTS

THIRD PARTY LOGO

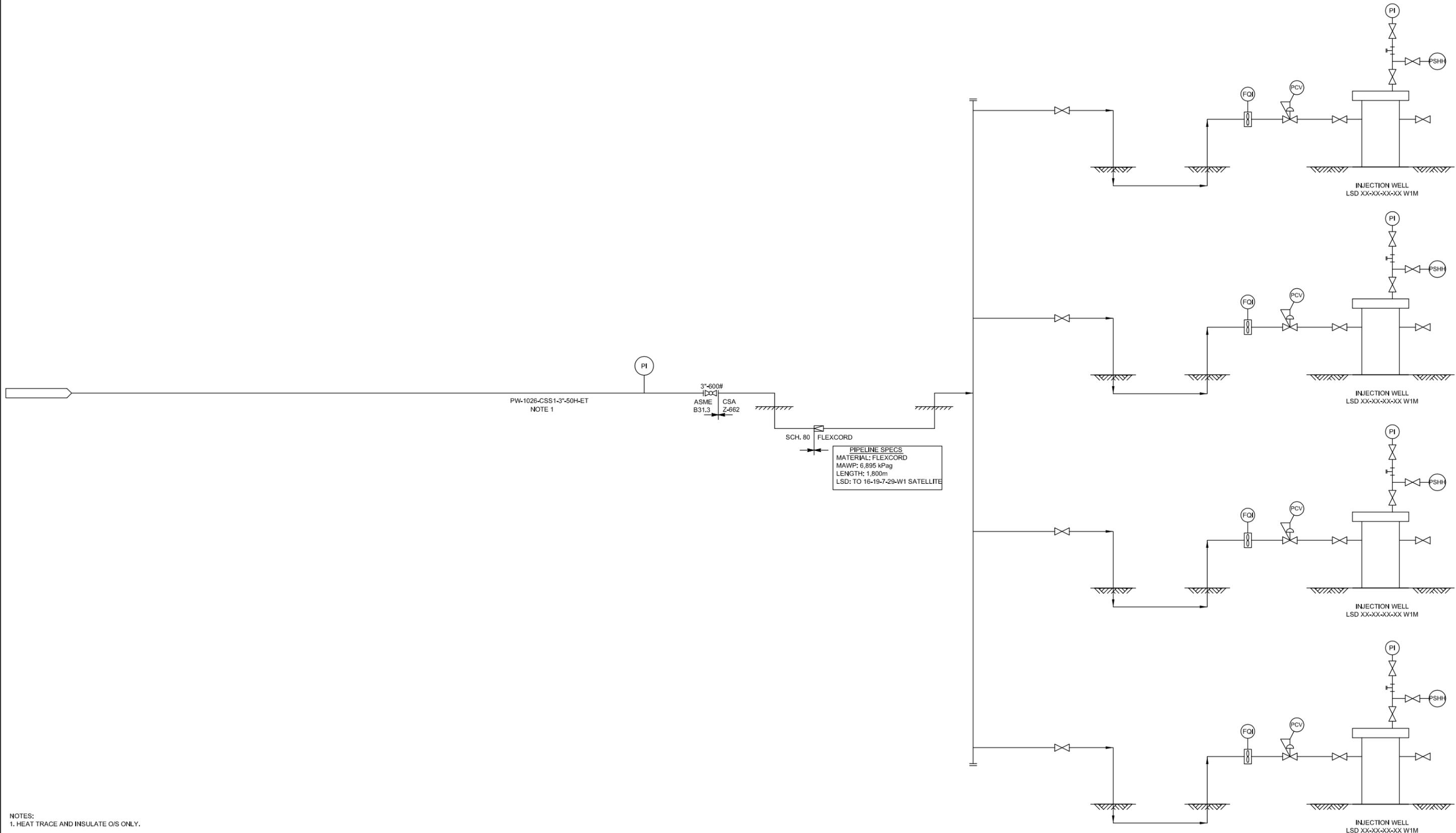
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EPCM PROJECT#: 2013-RR0-01

RED RIVER OIL
RED RIVER OIL INC.

RED RIVER OIL
SINCLAIR WATERFLOOD FACILITY
LSD 15-18-7-29-W1
PIPING AND INSTRUMENTATION DIAGRAM

DWG# RRO-15-18-P-PID-006 SHT 1 OF 1 REV 0



NOTES:
1. HEAT TRACE AND INSULATE O/S ONLY.

DRAWING#	REFERENCE DRAWING TITLE	REV	DATE	DESCRIPTION	DWN	CHKD	APPR

ENGINEER STAMP

Orion 2.jpg
THIRD PARTY LOGO
SCALE: SIZE:
EPCM PROJECT#:

DWG# REV