

STATE OF IDAHO
DEPARTMENT OF WATER RESOURCES
BENEFICIAL USE FIELD REPORT

A. GENERAL INFORMATION

Permit No: 86-7324

Exam Date: 8/30/2011

1. Current Owner: CITY OF LEWISTON
PO BOX 617
LEWISTON ID 83501
(208) 746-3671
2. Accompanied by: DAVE SIX
Phone No: 208-743-7461
Address: PO BOX 617 LEWISTON ID 83501
Relationship to Permit Holder: WATER SYSTEM MANAGER

3. SOURCE

CLEARWATER RIVER

TRIBUTARY

SNAKE RIVER

B. OVERLAP REVIEW

1. Other water rights with the same place of use:
85 2086 A
85 2099
85 2131
85 4017
85 4019
85 7015
85 7158
85 7601
85 7646
86 4032
86 4034 A
86 4034 B
86 7090
86 7324
2. Other water rights with the same point of diversion:
86 4034 A
86 4034 B
86 7090
86 7324

C. DIVERSION AND DELIVERY SYSTEM

1. LOCATION OF POINT(S) OF DIVERSION:

- (4) CLEARWATER RIVER L4 SW1/4NW1/4 Sec. 27, Twp 36N, Rge 05W, B.M. NEZ PERCE County
- (2) CLEARWATER RIVER SW1/4SE1/4 Sec. 27, Twp 36N, Rge 05W, B.M. NEZ PERCE County

Method of Determination: MAPS AND GPS

2.

Method of Determination:

3. ☒ Delivery System Diagram Attached (required). Indicate all major components and distances between components. Indicate weir size/pipe as applicable.
- ☒ Map Attached Showing Location(s) of point(s) of diversion and place(s) of use (required). Scale must be 1:24,000 or greater.
- ☒ Aerial Photo Attached (required for irrigation of 10+ acres).
- ☒ Photo of Diversion and System Attached

4.

<u>Well or Diversion</u>	<u>Motor Make</u>	<u>Hp</u>	<u>Motor Serial No.</u>	<u>Pump Make</u>	<u>Pump Serial No. or Discharge Size</u>
<u>ID No.*</u>					
Diversion #1 (4PUMPS)					
Diversion #2 (2PUMPS)					
On map and aerial photo.					

D. FLOW MEASUREMENTS ☒ Additional Computation Sheets Attached

Measured Method:

SIEMENS CALIBRATION REPORT 12-02-2011

Metter is a Sitrans F M Magflo New 300 inch influent (RAW) Calibration setting at 0-10000 Hz Frequency output
Calibration at Factor of 430.733

System Serial NO. 7ME658 459901U072

Serial No. 7ME658 222801D451

Calibration Liquid, Water

Calibration rig, RIG3

The calibration is for the new raw water (Sitrans F M Magflo) flow meter that is installed on the incoming line to the water plant from the Primary Intake station. (CLEARWATER RIVER L4 SW1/4NW1/4 Sec. 27, Twp 36N, Rge 05W, To acquired the maximum flows for each of the 4 pumps was to only run one pump at a time and maximize the flow to the plant and record the flow for one pump at a time. Below is the maximum flow numbers for each pump at the Primary Intakes at this (POD).

Diversion #1 CLEARWATER RIVER L4 SW1/4NW1/4 Sec. 27, Twp 36N, Rge 05W, B.M. NEZ PERCE County

Intake Pump #1 4325.9 GPM

Intake Pump #2 4792.4 GPM

Intake Pump #3 6692.2 GPM

Intake Pump #4 6852.9 GPM

TOTAL DIVERSION RATE = 50.5 CFS AT POD: Diversion #1

Diversion #2 CLEARWATER RIVER SW1/4SE1/4 Sec. 27, Twp 36N, Rge 05W, B.M. NEZ PERCE County

Diversion #2 has two other water rights that are decreed with a max diversion rate of 7.9 cfs. This diversion has two 200 Hp pumps that have the capacity of 14600GMP/32.52 CFS with the pump running at max RPM. This water right 86-7324 was put to use with both points of diversion in use. At the time of the exam this diversion was not in use. The system capacity is derived from the flow measured at diversion #1 of 50.5cfs and the max decreed flow of diversion #2 of 7.9cfs. The total diversion rate of this system capacity for water right 86-7324 is 58.4 CFS.

Intake Pump #1 8300 GPM

Intake Pump #2 6300 GPM

Decreed Max diversion rate = 7.9 cfs

The diversions #1 and #2 are connected and have the total diversion rate combined of 58.4 CFS.

F. VOLUME CALCULATIONS

1. Volume Calculations: No volume is use for the use of Municipal that is based off of system capacity.

2. **Volume Calculations for Other Uses:** The other use's was not put to use in the development of this water right. The city of Lewiston does deliver water to LOID irrigation reservoir. LOID irrigation will mix the water to its system and supply there costumers.

G. NARRATIVE/REMARKS/COMMENTS

The City of Lewiston beneficial use perfected under water right 86-7324 is Municipal only. All other beneficial use's that was permitted under water right 86-7324 was undeliverable by the City of Lewiston do to the fact that after the water was supplied to the reservoir that is under the operation of LOID irrigation the city has no control of the delivery system in LOID service area. Once the water from the City of Lewiston is delivered to LOID irrigation reservoir and mixed the LOID irrigation water the city has no control of the use or location the water is supplied.

The point of diversion #1 was permitted with the location of SENW , SEC 27 TN 36N R 05W and was located with GPS and maps to be in LOT 4 SW NW SEC, 27 TN 36N R 05W. Amendment will be needed to change the location of this diversion point.

Have conditions of permit approval been met? ☒ Yes ☐ No

H. RECOMMENDATIONS**1. Recommended Amounts**

<u>BENEFICIAL USE</u>	<u>PERIOD OF USE</u>	<u>DIVERSION RATE</u>
MUNICIPAL	12/01 to 02/01	6.200 CFS
MUNICIPAL	03/01 to 11/30	18.600 CFS
<u>Totals:</u>		18.600 CFS

2. Recommended Amendments

☒ Change P.D. as reflected above ☐ Add P.D. as reflected above ☐ None

☐ Change P.U. as reflected above ☐ Add P.U. as reflected above ☐ Other

I. AUTHENTICATION

Field Examiner's Name *Eric J. Hori* Date 4-17-2013

Reviewer *Keith E. Samblom* Date 5/10/13

5:48:55 AM

INTakes Pump #4
MAX Flow 6852 GPM

10,375.7
6,758.7
2,027.2
7,078.5
915.9

6:51:16 AM
6/19/2012

2:51:16
6/19/2012

10:51:16
6/19/2012

6:51:16 AM
6/20/2012

Caption	6:51:16 AM 6/19/2012	Min	Max	Units
central control backwash flow	10,375.7	0.0	5,000.0	
central control influent flow	6,758.7	0.0	10,000.0	
central control low system flow	2,027.2	0.0	10,000.0	
central control high system flow	7,078.5	0.0	10,000.0	
central control alum flow	915.9	0.0	5,000.0	

11:04:46 AM

INTAKES Pump #3
MAX Flow 6692 GPM

10,375.7
6,541.8
2,120.5
3,758.9
902.1

0.0

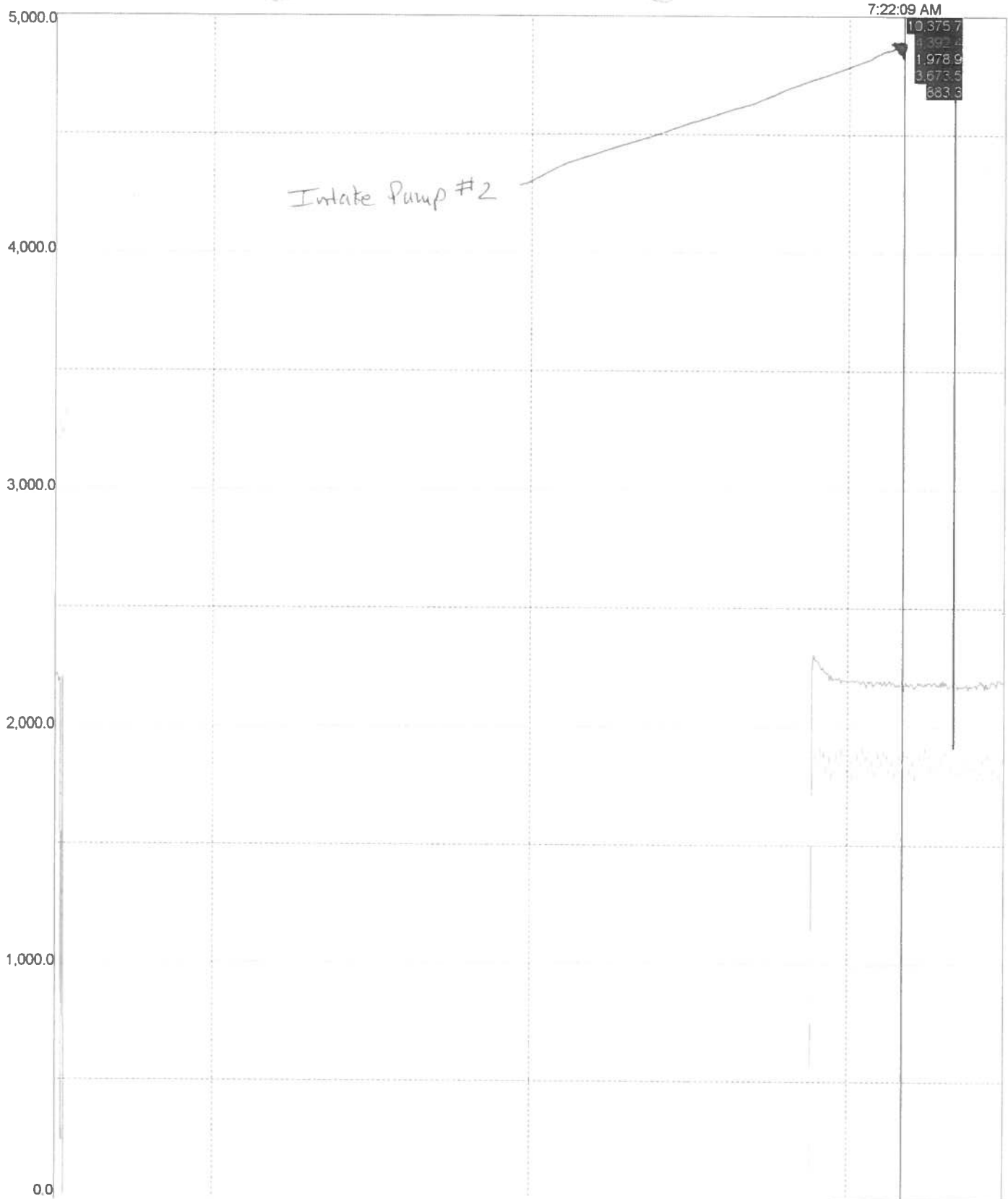
11:41:39 AM
6/18/2012

7:41:39
6/18/2012

3:41:39
6/19/2012

11:41:39 AM
6/19/2012

Caption	11:41:39 AM 6/18/2012	Min	Max	Units
central control backwash flow	10,375.7	0.0	5,000.0	
central control influent flow	6,541.8	0.0	10,000.0	
central control low system flow	-0.1	0.0	10,000.0	
central control high system flow	6,234.4	0.0	10,000.0	
central control alum flow	902.1	0.0	5,000.0	



9:58:05 AM
4/21/2012

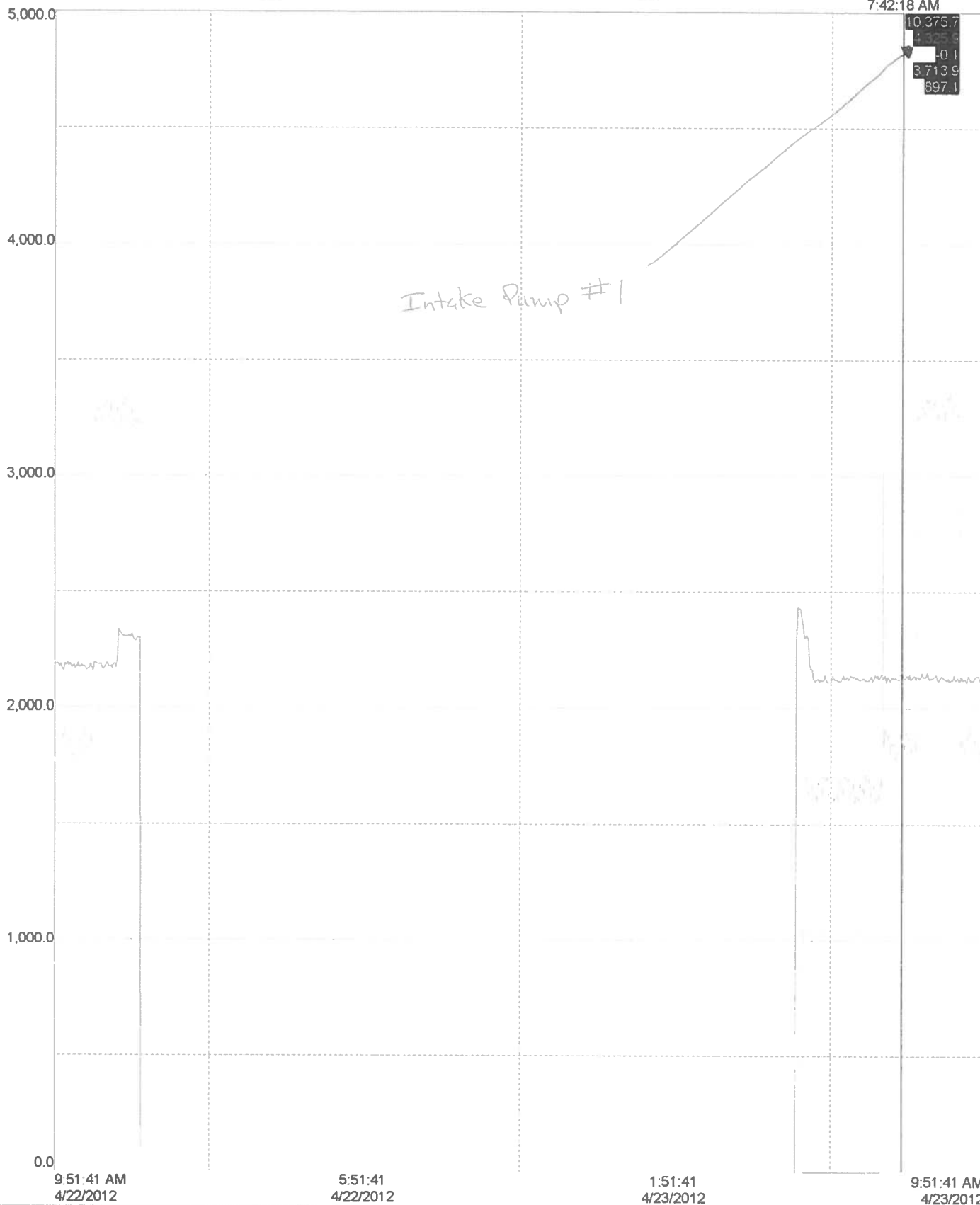
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4/21/2012

1:58:05
4/22/2012

9:58:05 AM
4/22/2012

Caption	9:58:55 AM	Min	Max	Units
central control backwash flow	10,375.7	0.0	5,000.0	
central control influent flow	5,603.3	0.0	10,000.0	
central control low system flow	0.0	0.0	10,000.0	
central control high system flow	3,229.9	0.0	10,000.0	
central control alum flow	906.5	0.0	5,000.0	

7:42:18 AM



Caption	9:55:49 AM	Min	Max	Units
central control backwash flow	10,375.7	0.0	5,000.0	
central control influent flow	5,616.2	0.0	10,000.0	
central control low system flow	-0.1	0.0	10,000.0	
central control high system flow	3,182.8	0.0	10,000.0	
central control alum flow	901.8	0.0	5,000.0	



POD 2.JPG



PUMP 1&2 POD 2 .JPG



POD 1 SW PUMP STA.JPG



4 PUMPS AT POD 1.JPG





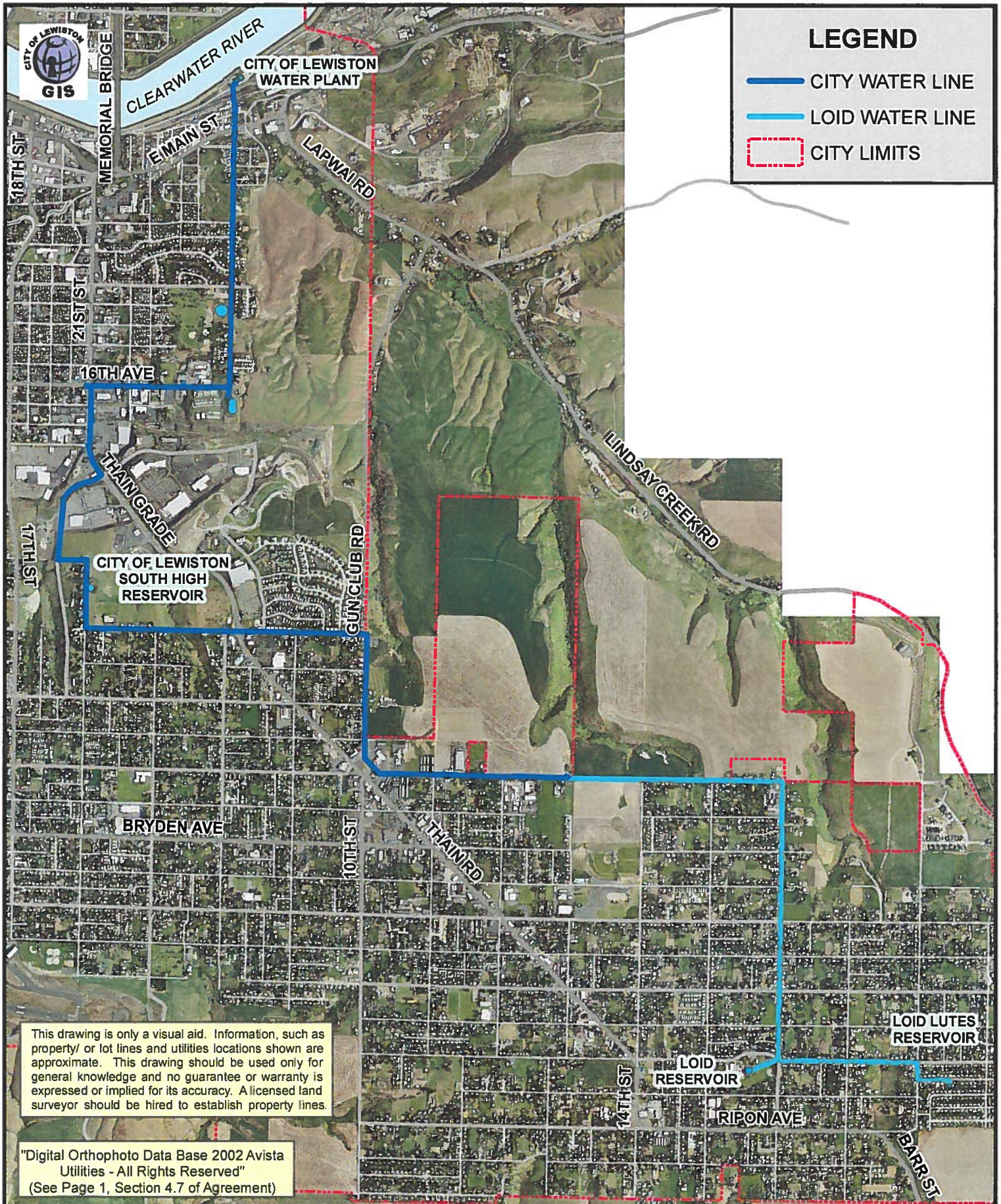


CITY OF LEWISTON

PUBLIC WORKS DEPARTMENT



1 inch = 2,400 feet



SITRANS F M MAGFLO

New 30" influent (Raw)

Customer		Serial No.	
Converter type		Serial No.	7ME658 222801D451
Sensor type			
Cal. Factor	430.733		
System Serial NO.	7ME658 459901U072		

Calibration Data

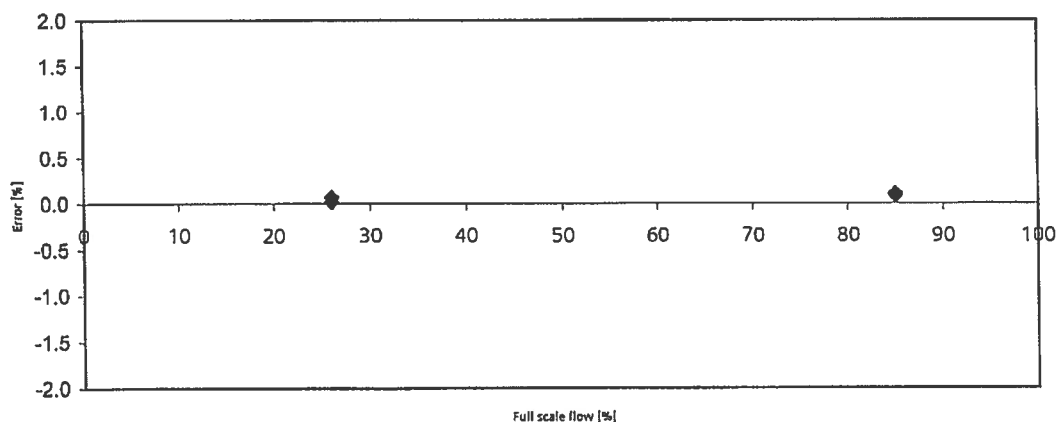
Full scale flow	1111.11	L/S	Calibration liquid	Water
			Calibration rig	RIG3

Calibration Settings

Frequency output	0-10000 Hz
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Calibration Results

Test No.	Full scale flow	Water Temp	True Flow-Rate	Flowmeter Frequency output		
				Output	Flowrate	Error
	[%]	[°C]	L/S	[Hz]	L/S	[%]
1	85	13.0	946.1210	8523.800	947.0890	0.10
2	85	13.0	945.7290	8518.360	946.4840	0.08
3	26	13.0	292.3700	2633.130	292.5700	0.07
4	26	13.0	292.1880	2630.160	292.2400	0.02
5						
6						
7						
8						
9						
10						

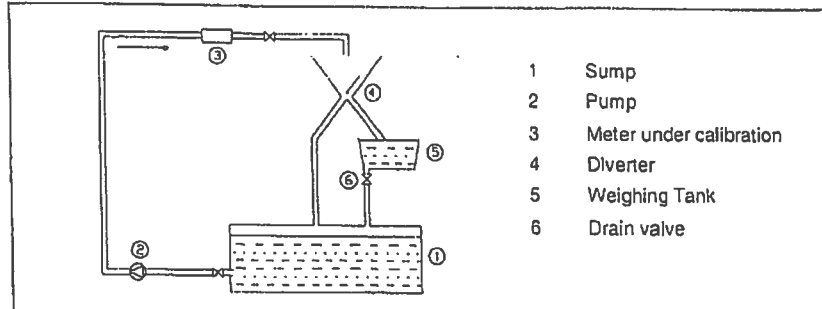


Calibrated by	zjx
Date	2011-12-02 Time 14:34:52

Reference Conditions – Static Weighing Method

Calibration Rig

The test rigs operate according to the static weighing method, as described in ISO 4185 "Measurement of fluid flow in closed circuits". See diagram below: During calibration, the meter under test (3) is compared with a known quantity of water collected in a weigh tank (5). A diverter (4) controls the diversion of water into the tank and the start/stop of the timing and data collection. The True Flowrate is derived from the Mass of water collected, the water Density, and the diversion Time. The Measured Flowrate is calculated from the flowmeter Output, the Full Scale Flowrate setting and the diversion Time. The Error is the deviation of the Measured Flowrate from the True Flowrate.



- 1 Sump
- 2 Pump
- 3 Meter under calibration
- 4 Diverter
- 5 Weighing Tank
- 6 Drain valve

Specification

Calibration Rig	100Kg	1200Kg	8 Tonnes	46 Tonnes
Liquid	Water	Water	Water	Water
Liquid temperature	15-30 Deg C	15-30 Deg C	15-30 Deg C	15-30 Deg C
Meter capacity	DN6 – DN50	DN50 – DN150	DN150 – DN450	DN450 – DN1800
Maximum flowrate	2.5 l/s	30 l/s	200 l/s	1200 l/s
Minimum flowrate	0.0028 l/s	0.196 l/s	1.767 l/s	200 l/s *)
Maximum mass	80 Kg	1200 Kg	7500 Kg	46000 Kg
Uncertainty**)	< 0.1%	< 0.1%	< 0.1%	< 0.1%

*) This limit can be reduced to 1.77 l/s by utilisation of the 8 Tonne collecting tank.
**) The uncertainty (in the calculation of the True Flowrate) is for a confidence probability of 95% and is estimated in accordance with ISO TR 5168

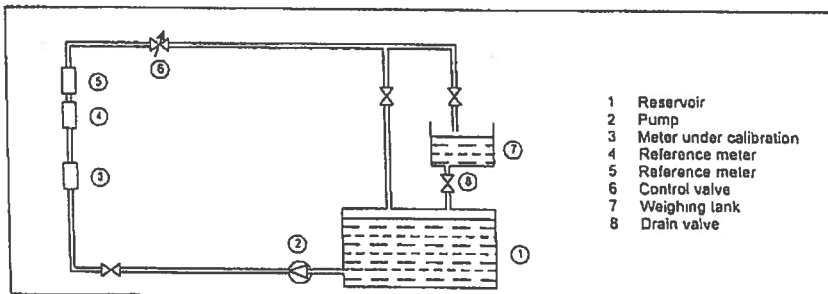
Traceability

All instrumentation used by the Flow Laboratory to measure Mass, Density, Time and Flowmeter Output, during the performance of its calibrations has been calibrated by a UKAS accredited laboratory. This provides an unbroken chain of measurement traceability to national standards

Reference Conditions – Reference Meter Method

Calibration Rig

The calibration rigs are operated by comparing the output of the meter under test (3) against the average output of two reference meters (4 and 5), during a predetermined time period. The reference meters are permanently installed in the rig and are routinely calibrated against a weighing tank (7), using the static weighing method, as described in BS EN 24185 "Measurement of fluid flow in closed conduits".



- 1 Reservoir
- 2 Pump
- 3 Meter under calibration
- 4 Reference meter
- 5 Reference meter
- 6 Control valve
- 7 Weighing tank
- 8 Drain valve

Specification

Test rig I.D.	1200kg	8 Tonnes	46 Tonnes	LTR 1-GB
Liquid	Water	Water	Water	Water
Liquid temperature	15 – 30 Deg C	15 – 30 Deg C	15 – 30 Deg C	15 – 30 Deg C
Meter Size	DN50 – DN150	DN150 – DN450	DN350 – DN1600	DN50 - DN200
Maximum flow rate	30 l/s	200 l/s	1200 l/s	340 m3/h
Minimum flow rate	0.196 l/s	1.767 l/s	3.5 l/s	2.2 m3/h
Uncertainty, master meter method *	+/- 0.15%	+/- 0.15%	+/- 0.15%	+/- 0.1%
Uncertainty, static weighing method *	+/- 0.1%	+/- 0.1%	+/- 0.1%	+/- 0.05%

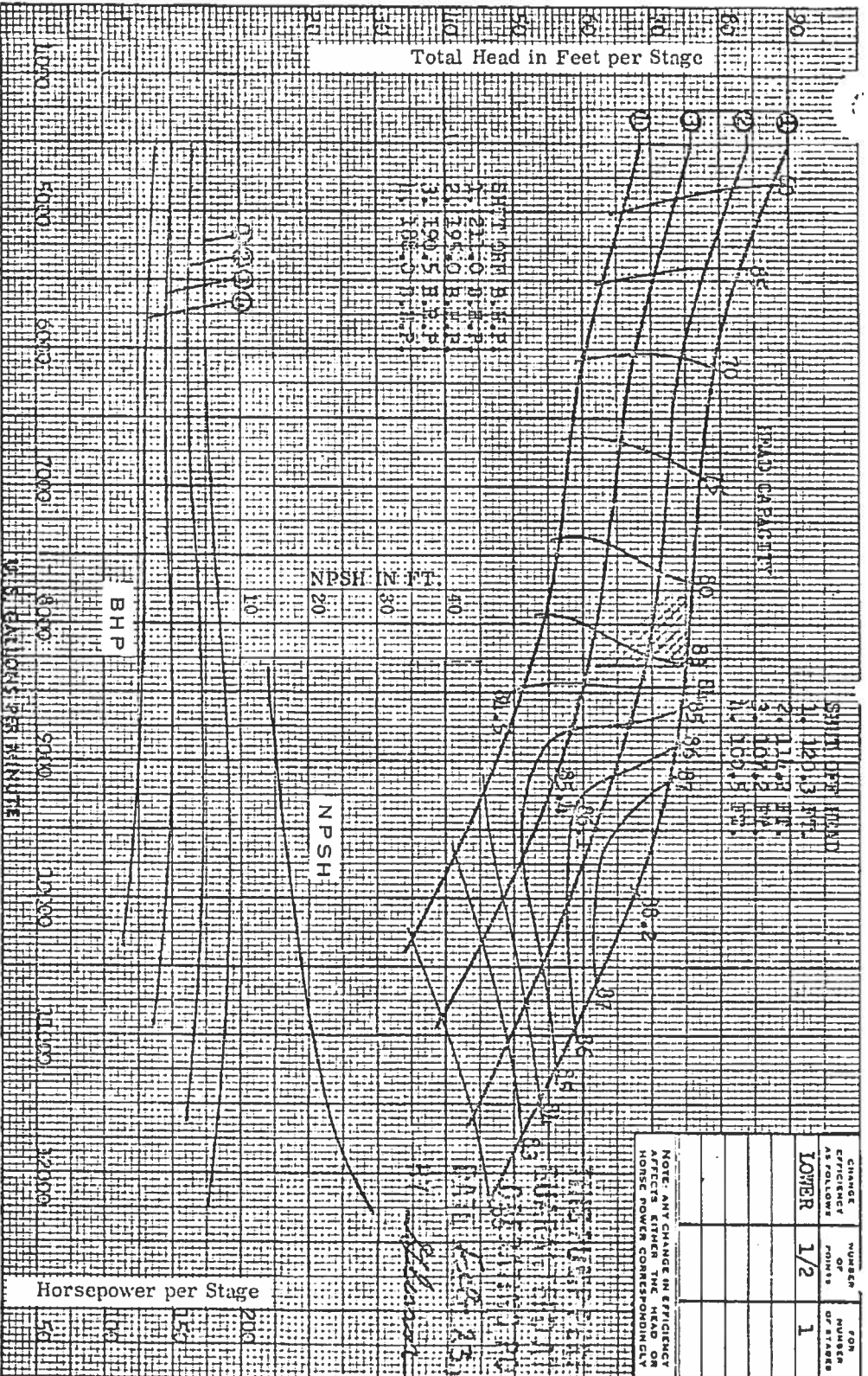
* The combined uncertainty, in the calibration of the meter under test, is for a confidence probability of 95% and is estimated in accordance with ISO TR 5168

Traceability

All measuring instrumentation, used in the calibration of the meter-under-test, has either been calibrated by a UKAS accredited laboratory or has been checked against an instrument, which in turn has been calibrated by a UKAS accredited laboratory. This provides an unbroken chain of measurement-traceability to national standards.

Total Head in Feet for 1 Stages

Total Head in Feet per Stage



CHANGE IN EFFICIENCY AS FOLLOWS	NUMBER OF STAGES	FOR
LOWER	1/2	1

NOTE: ANY CHANGE IN EFFICIENCY AFFECTS EITHER THE HEAD OR HORSE POWER CORRESPONDENTLY

HYDRAULIC PERFORMANCE WARRANTY			
CURVE NO.	IMPELLER NO.	IMPELLER DIA.	TAKEN FROM
1	2620986	13 1/4" x 17 1/4"	37080
2	2620986	12 1/8" x 17"	37112
3	2620986	12 1/8" x 16 3/4"	
4	2620986	11 1/8" x 16 3/4"	36814

Customer QUEEN PUMP CO.

Item PORTLAND, OREGON

Item RAW WATER PUMPS

Dealers Ref. No. V30456

Part No. 23336A-5

Size 24 HH

RPM 1185

Curve 2846925

PUMP DESCRIPTION: Driver VHS - 200 HP - 3 PH - CCY; Head 16 x 16 x 20; Column 16 x 15 1/16

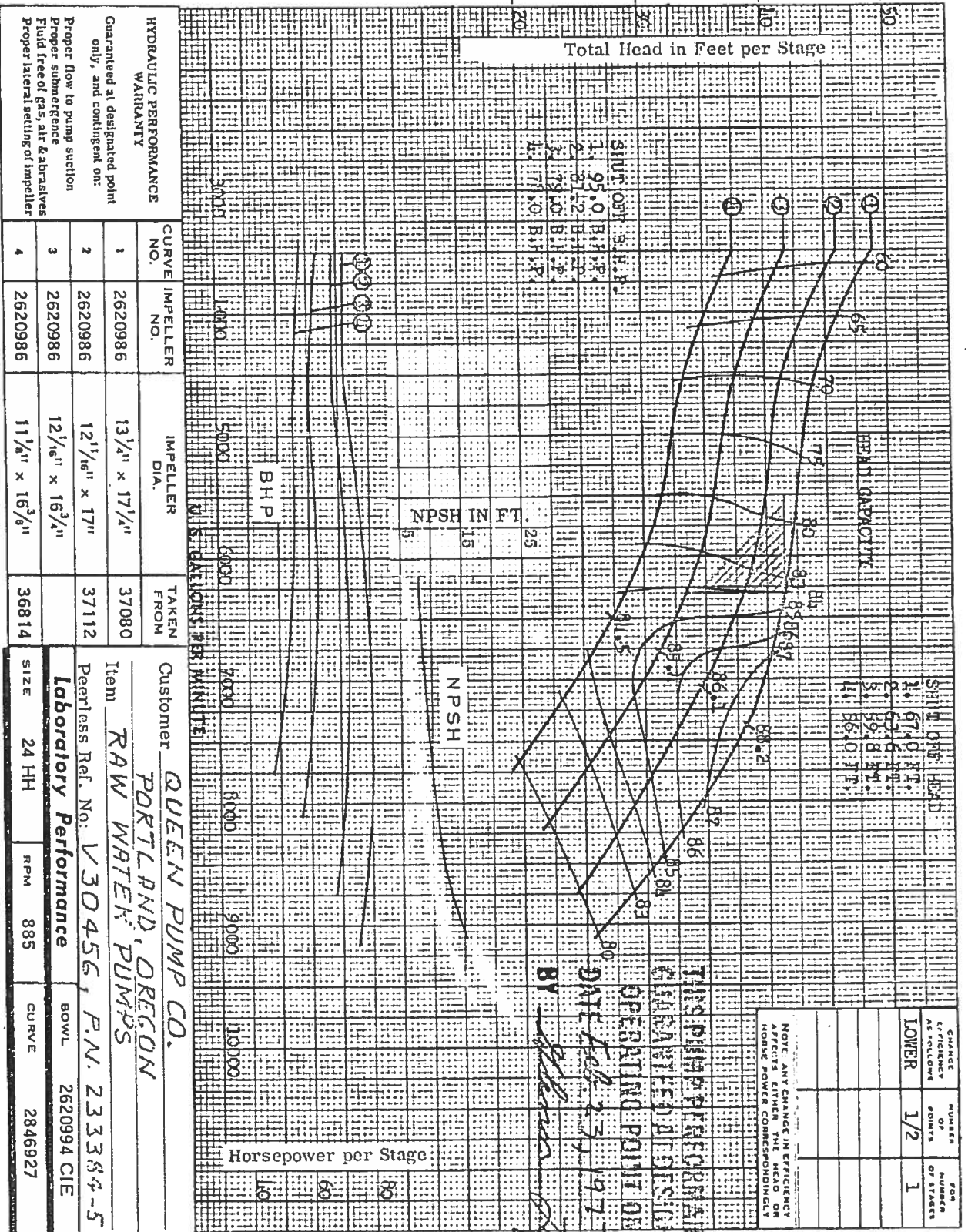
GUARANTEED BOWL ☒ PERFORMANCE: Capacity 8300 gpm; Head 75 ft; Eff 82.5 %; BHP 190.5



for

Horsepower for 1 Stages

Total Head in Feet for 1 Stages



Horsepower for 1 Stages

VERTICAL TURBINE PUMPS

PUMP DESCRIPTION: Driver VH5, 200 HP, 3PH, 60 CY; Head 16 X 16 X 20; Column 16 X 15/16
 BOWL ☒ PERFORMANCE: Capacity 6300 gpm; Head 41.5 ft; Eff 83.5 %; BHP 79.1
 GUARANTEED FIELD

