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NAS PENSACOLA  
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AUGUST 1996 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC  
WASTEWATER TREATMENT PLANT GROUNDWATER REMEDIATION PROJECT FOR NAS  
PENSACOLA FL  
8/28/1996  
HRP SPECTRUM INC

# HRP/Spectrum

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August 28, 1996

Commanding Officer  
Naval Public Works Center, Code 911.3  
310 John Tower Road, Building 3819  
Naval Air Station  
Pensacola, FL 32508-6500  
Attention: Mr. Tom Kelley

**RE: AUGUST 1996 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC WASTEWATER TREATMENT PLANT (DWTP) GROUNDWATER REMEDIATION SYSTEM; NAVAL AIR STATION (NAS), PENSACOLA, FLORIDA; (JOB # NAV0227.FE)**

Dear Sir:

*HRP/Spectrum* is pleased to submit the August 1996 monthly report for the operation and maintenance activities conducted on the DWTP Ground Water Treatment System for the above referenced project. The attached Table 1 contains a summary of the recovery well pumping data for the month of August 1996 and Attachment "A" contains a time series graph of the calculated bi-weekly pump flow rates to facilitate evaluation of the performance and maintenance requirements of the recovery wells and pumps. In addition, two (2) copies of the report have been sent to Mr. Maxie Keisler with Southern Division, Naval Facilities Engineering Command and two (2) copies to Commander, Naval Air Station, Environmental Division, Attention: Mr. Bill Taylor. *HRP/Spectrum* has the following comments for the month of August, 1996:

**RECOVERY WELL SYSTEM OPERATION STATUS**

**RW 1,2&3**

- On August 8, 1996, Pump B for RW 1, 2 & 3 was operating sufficiently and producing normal flow. Measurements for flow, pressure, vacuum, and well depth were collected. The valve for RW 1 was closed, RW 2 was partially closed and RW 3 was fully open.
- On August 21, 1996, Pump B for RW 1, 2 & 3 was operating sufficiently and producing normal pressure and flow. Pump B was then switched OFF and valves CLOSED. Pump A was then switched ON to ensure its proper operation. Pump A operated sufficiently by producing flow and pressure similar to Pump B. Pump A was left on-line.
- On August 22, 1996, all Pumps for RW 1, 2 & 3 were shut down to allow RW 5 to operate. This decision is further discussed in the RW 5 section of this report.

## **RW 4&6**

- On August 8, 1996, Pump B for RW 4 & 6 was operating sufficiently with proper pressure and flow. The suction pipes for RW 4 & 6 were removed and scrubbed with a bleach solution. The pipes were stained with accumulated black biological growth. The pump was restarted with no problems.
- On August 21, 1996, Pump B for RW 4 & 6 was operating sufficiently with proper pressure and flow. No leaks were detected at either of the recovery wells or pumps.
- Pump B was switched OFF and valves were CLOSED. Pump A was started, but was producing very little flow. Upon inspection of the pump it was decided that an overhaul was needed. Pump A was removed for repair and Pump B placed in operation again. Pump B was working properly upon departure from the site on August 23, 1996.

## **RW 5A**

- Upon arrival to the site on August 8, 1996 RW 5A was switched OFF and not running because of previous problems with the well indicated by Rust. No actions were performed on RW 5A on this date.
- Upon arrival to the site on August 21, 1996 RW 5A was switched OFF and not running because of previous problems with the well indicated by RUST. Apparently the well can not produce enough pressure to overcome the back pressures produced by the other three RW pumps.
- On August 23, 1996 all RW pumps were shut down and valved OFF. RW 5A was primed and started. The pump ran properly producing good flow and pressure. The pump was allowed to run for awhile prior to RW 4 & 6 being started. RW 5 showed a slight drop in flow but was still operating sufficiently. RW 1, 2 & 3 was then turned ON which caused a further decrease in flow from RW 5A. RW 7 was then started and all flow from RW 5A stopped. Different combinations of the wells being ON and OFF were tried. The greatest flow from RW 5A occurred when RW 1, 2 & 3 was OFF, RW 4 & 6 was ON and RW 7 was ON. Since RW 5A had not been in operation for some time, it was decided to leave RW 1, 2 & 3 OFF and allow RW 5A to operate. RW 5A, RW 4 & 6, and RW 7 were operating properly upon departure from the site on August 23, 1996.
- RW 5A has trouble pumping against the pressures of the other pumps. A full evaluation of the systems' piping, pumps, and junctions would be needed to determine the best solution to the problem. The following is a list of possible solutions that may be considered.
  1. Implement a system of rotating the number of Recovery wells in operation at one time. This would allow all wells to pump but not all at once.
  2. Tie RW 5 in to the air stripper unit separately from the other recovery wells.

3. Upgrade the pumps and motors for RW 5A or install a booster pump between the current pump and the junction with the other RW lines.

### **RW 7**

- On August 8, 1996 Pump B appeared to be working properly producing high pressure and flow. The suction pipes for RW 7 was removed and scrubbed with a bleach solution. The pipe was stained with an unknown black residue. The pump was restarted with no problems.
- On August 21, 1996 Pump B appeared to be working properly producing high pressure and flow. Pump B was switched OFF and valved OFF. Pump A was started and appeared to be working properly, producing high pressure, and flow. Pump A was left on-line and was working properly upon departure from the site on August 23, 1996.

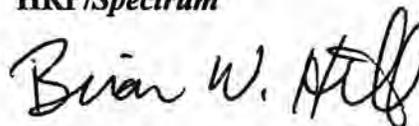
### **PRE-TREATMENT AIR STRIPPER**

- On August 8, 1996 the Air Stripper operated properly. Samples were taken from the inlet and outlet sample points.
- On August 21, 1996 the Air Stripper operated properly.
- On August 22, 1996 the Air Stripper unit was thoroughly cleaned using the steps listed on the enclosed "Cleaning Procedures for the Air Stripper Unit." The unit was placed back in operation and was working properly upon departure from the site on August 23, 1996.

If you have any questions regarding this report or other matters pertaining to this project please contact Tad Goetcheus or myself at (864) 298-0231.

Sincerely,

**HRP/Spectrum**



Brian W. Hill  
Project Engineer

BWH/crw

Enclosure

cc: Maxie Keisler - NAVFALENGCOM - Code 18213 (2 copies)  
Bill Taylor - NAS Pensacola - Code 00500 (2 copies)

(0827.227)

## **Cleaning Procedures for the Air Stripper Unit, Naval Air Station, Groundwater Pretreatment System, Pensacola, Florida.**

1. Switch all pumps to the Off position.
2. Turn all influent valves to the Closed position.
3. Turn Off blower.
4. Take Off top of unit.
5. Using Wet/Dry vacuum, remove all water from Top shelf. All water and debris removed from Air Stripper should be drummed.
6. Drain and remove the 3" influent pipe.
7. Remove Top level and place in the sun to dry.
8. Vacuum water from next the level, remove and place in the sun to dry.
9. Repeat step #8 for all levels.
10. Once all the levels are dry, brush the trays to loosen remaining debris and vacuum again.
11. Replace levels in the order they came Off.
12. Replace influent pipe.
13. Replace top.
14. Turn on blower.
15. Open influent valves and turn On pumps.
16. Check unit for leaks and proper operation.

**GROUNDWATER PRETREATMENT SYSTEM  
OPERATION AND MAINTENANCE CHECKLIST  
NAS PENSACOLA, FLORIDA**

<b>INSPECTOR'S NAME</b>	BRIAN HILL		
<b>DATE</b>	8/21/96		
<b>AMBIENT TEMPERATURE</b>	85		
<b>WEATHER CONDITIONS</b>	SUNNY & HOT		
<b>ITEM</b>			
<b>INSPECTION CHECK</b>		<b>INSPECTION FREQUENCY</b>	<b>DATA/ COMMENTS</b>
INFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	2,298,340
	SAMPLE COLLECTION	MONTHLY	N/A
AIR STRIPPER	PRESSURE GAUGE READING	BI-WEEKLY	17" WATER
	CLEAN / CHECK TRAYS	BI-WEEKLY	CLEANED
BLOWER	PIPING CONNECTIONS	MONTHLY	OK
EFFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	N/A
	SAMPLE COLLECTION	MONTHLY	N/A
SYSTEM COMPONENTS	EXPOSED PIPING CONNECTIONS	MONTHLY	OK
<b>SYSTEM DESCRIPTION:</b>	AIR STRIPPER OPERATING PROPERLY		
<b>ACTIVITIES PERFORMED:</b>	CLEANED TREYS FOLLOWING "CLEANING PROCEDURES FOR AIR STRIPPER" ON AUGUST 22 1996.		

**TABLE 1  
NAS PENSACOLA  
RECOVERY WELL PUMPING DATA**

PUMP STATION	DATE INSPECTED	TIME (MILITARY)	FLOW METER READING (GALLONS)	DISCHARGE PRESSURE (psig)	SUCTION VACUUM (°Hg)	INSTANTANEOUS PUMPING FLOW RATE (GPM)	CALCULATED BI-WEEKLY FLOW RATE (GPM)	PUMP IN USE (A or B)	ELAPSED TIME (HOURS)	TOTAL BI-WEEKLY FLOW (GALLONS)	WATER LEVEL BELOW TDP OF CASING (FT) (RESPECTIVELY)
RW 1,2 & 3	8/8/96	11:00	9,998,610	39	15	6.7	3.96	B	336	80,000	4.01, 9.83, 8.55
RW 4&6	8/8/96	11:20	650,000	40	10.5	6.85	5.95	B	336	120,000	5.09, 6.34
RW 5A	8/8/96	11:30	4,500,500	0	0	0	0	N/A	336	0	4.55
RW 7	8/8/96	11:45	5,182,780	40	26.5	3.55	2.97	B	336	60,000	20.88
RW 1,2 & 3	8/21/96	14:20	10,151,900	43	15	6.5	7.54	B	339	153,290	4.53, 8.43, 8.27
RW 4&6	8/21/96	14:40	740,540	41	9	5.5	4.45	B	339	90,540	5.51, 6.09
RW 5A	8/21/96	14:55	4,500,500	0	0	0	0	N/A	339	0	4.62
RW 7	8/21/96	15:05	5,238,450	38	26	4.25	2.74	B	339	55,670	19.39

NOTES:

RW 1,2 3 - Recovery station for recovery wells RW 1, RW 2, and RW 3.  
RW 4 6 - Recovery well for wells RW 4 and RW 6.

**ATTACHMENT A  
GROUNDWATER FLOW READINGS**

<b>DATE</b>	<b>RW 12&amp;3</b>	<b>RW 4&amp;6</b>	<b>RW 5A</b>	<b>RW 7</b>	<b>TOTAL</b>
9/2/93	142110	162340	24760	53830	383040
9/16/93	135670	149590	-30700	49630	304190
9/28/93	116270	134810	14330	43120	308530
10/12/93	136130	152720	13160	46830	348840
10/26/93	142140	154940	14830	45010	356920
11/9/93	149620	158140	26400	46350	380510
11/23/93	146570	157290	31320	43950	379130
12/7/93	144880	154010	16110	44160	359160
12/21/93	139320	153600	13510	42630	349060
1/4/94	149060	158250	11050	46720	365080
1/18/94	123050	154960	5120	47100	330230
2/1/94	133870	154620	24713	47830	361033
2/15/94	125390	155560	26547	47110	354607
2/28/94	123660	142080	4750	42250	312740
3/14/94	113800	156140	51810	45330	367080
3/28/94	129980	149390	26114	45340	350824
4/11/94	62480	185229	0	46667	294376
4/26/94	114540	192381	0	47693	354614
5/10/94	95550	176590	-13904	44760	302996
5/24/94	94640	159660	5466	43110	302876
6/7/94	95650	153210	674	43420	292954
6/20/94	94086	137550	41772	40140	313548
7/5/94	122174	165870	-3652	50170	334562
7/19/94	102520	152770	71814	48230	375334
8/2/94	114960	146980	8396	46040	316376
8/16/94	120305	147250	314706	43740	626001
8/30/94	28735	146150	259724	43840	478449
9/13/94	109247	143172	1300	41266	294985
9/27/94	19933	146778	240010	38974	445695
10/11/94	38450	150690	24290	43310	256740
10/25/94	136920	145910	168195	8650	459675
11/8/94	137634	143830	159625	39953	481042
11/22/94	130526	140433	143430	36652	451041
12/6/94	126543	140687	2578	35103	304911
12/20/94	123081	141034	66629	36927	367671
1/3/95	124006	141588	2629	36814	305037
1/17/95	121155	141168	103562	37668	403553
1/31/95	20528	143045	160533	7741	331847
2/14/95	118171	139268	33440	39172	330051
2/28/95	112145	124628	195889	37053	469715
3/14/95	123141	194925	190593	45607	554266
3/28/95	125571	152781	147296	46200	471848
4/11/95	121568	184651	2015	45893	354127
4/25/95	126623	147850	224282	47128	545883
5/9/95	94185	167684	220647	46206	528722
5/23/95	80867	135931	100613	46105	363516
6/6/95	136660	157320	332514	44446	670940
6/20/95	94863	132718	78605	42396	348582
7/4/95	122115	150562	1577	40923	315177

**ATTACHMENT A  
GROUNDWATER FLOW READINGS**

<b>DATE</b>	<b>RW 12&amp;3</b>	<b>RW 4&amp;6</b>	<b>RW 5A</b>	<b>RW 7</b>	<b>TOTAL</b>
7/18/95	128917	131634	148926	41204	450681
8/1/95	134318	152703	132928	41322	461271
8/10/95	94856	88538	87222	29445	300061
8/22/95	122086	134403	123028	37154	416671
9/5/95	131628	133923	120794	43401	429746
9/19/95	137823	155558	93131	43165	429677
10/3/95	129645	132519	50273	40028	352465
10/25/95	12024	136159	69476	3701	221360
11/8/95	22566	82653	78603	0	183822
11/21/95	15068	20731	13571	45233	94603
5/31/96	9722	10033	2577	4760	27092
6/6/96	59060	42822	439	22325	124646
6/12/96	56952	49788	460	21626	128826
6/19/96	59513	80468	1555	26465	168001
6/26/96	56512	86242	0	28001	170755
7/11/96	6264	123432	-3289	59241	185648
8/8/96	80000	120000	0	60000	260000
8/21/96	153290	90540	0	55670	299500

NAS PENSACOLA  
GROUNDWATER RECOVERY WELL FLOW RATES

