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NAS PENSACOLA
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JANUARY 1997 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC WASTEWATER TREATMENT PLANT GROUNDWATER REMEDIATION PROJECT FOR NAS PENSACOLA FL

2/5/1997

HRP SPECTRUM INC

HRP/Spectrum

February 5, 1997

Commanding Officer
Naval Public Works Center, Code 480
Attention: Mr. Tom Kelley
Naval Air Station
Pensacola, FL 32508-6500

RE: JANUARY 1997 MONTHLY OPERATION AND MAINTENANCE REPORT ON THE DOMESTIC WASTEWATER TREATMENT PLANT (DWTP) GROUND-WATER REMEDIATION SYSTEM; NAVAL AIR STATION (NAS), PENSACOLA, FLORIDA, (JOB # NAV0227.FE)

Dear Sir:

HRP/Spectrum is pleased to submit the January 1997 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 January 1997 and Attachment "A" contains time series graphs of the calculated bi-weekly pump flow rates and measured well water levels 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 January:

RECOVERY WELL SYSTEM OPERATION STATUS

RW 1,2&3

- On January 6, 1997, Pump A for RW 1, 2, & 3 was shut off for rehabilitation of RW 3, 4, 5A, 6, & 7. Recovery Well 3 was cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems RW-1, 2, 3, and RW 7."

- On January 9, 1997, Pump B for RW 1, 2, & 3 was restarted. Upon departure, RW 1, 2, & 3 were operating normally. No leaks were detected on either the recovery wells or pumps.

- On January 28, 1997 Pump B for RW 1, 2, & 3 was in operation. Upon departure, RW 1, 2, & 3 were operating, producing normal flow and pressure. No leaks were detected on either the recovery wells or pumps.

- After performing RW rehabilitation during the first week of January on RW 3, there was a three (3%) percent decrease in flow from the month of December to January. The reason for this decrease in flow was that RW 1, 2, & 3 were off-line for four (4) days during RW rehabilitation.

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RW 4&6

- On January 6, 1997 Pump A for RW 4 & 6 was shut down to perform RW rehabilitation on RW 3, 4, 5A, 6, & 7. Recovery Well 4 & 6 was cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems RW-4, 6 and RW 5A."

- On January 8, 1997, Pump A for RW 4 & 6 was restarted. Upon departure, RW 4 & 6 were operating, producing normal flow and pressure. No leaks were detected on either the recovery wells or pumps.

- On January 10, 1997 pressure gauges for both Pumps A & B were replaced. The vacuum gauge on Pump A was also replaced.

- On January 28, 1997, Pump A for RW 4 & 6 was operating with proper normal pressure and flow. Upon departure, no leaks were detected at either of the recovery wells or pumps.

- After performing RW rehabilitation during the first week of January on RW 4 & 6, there was a twenty one (21%) percent increase in flow noted for RW 4 & 6 during the month of January.

RW 5A

- Upon arrival to the site on January 6, 1997, Pump B for RW 5A was switched off for RW rehabilitation for RW 3, 4, 5A, 6, & 7.

- On January 10, 1997, Pump B for RW 5A was restarted. Upon departure, RW 5A was operating, producing normal flow and pressure. No leaks were detected on either the recovery wells or pumps.

- On January 28, 1997, Pump B for RW 5A was operating with normal pressure and flow. Upon departure, no leaks were detected at either of the recovery wells or pumps.

- After performing RW rehabilitation during the first week of January on RW 5A, there was a sixty seven (67%) percent decrease in flow from the month of December to January. The reason for the decrease in flow was that RW 5A was that the well was off-line for five (5) days for RW rehabilitation and monitoring well sampling. Recovery Well 5A was also used to cycle the purged water from the monitoring wells through the air stripper for treatment.

RW 7

- On January 6, 1997, Pump B for RW 7 was shut down to perform RW rehabilitation on RW's 3, 4, 5A, 6, & 7. Recovery Well 7 was cleaned according to the steps listed on the enclosed "Rehabilitation Procedures for Recovery Systems RW-1, 2, 3, and RW 7."

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- On January 8, 1997, Pump B for RW 7 was restarted. Upon departure, RW 7 was operating, producing normal flow and pressure. No leaks were detected on either the recovery wells or pumps.

- On January 28, 1997, Pump B for RW 7 was operating normally with normal pressure and flow. Upon departure, no leaks were detected at either of the recovery wells or pumps.

- After performing RW rehabilitation during the first week of January on RW 7, there was a four (4%) percent increase in flow noted for RW 7 during the month of January.

PRE-TREATMENT AIR STRIPPER

- On January 6, 1997 the Air Stripper was taken off-line to perform RW rehabilitation on wells 3, 4, 5A, 6, & 7, as well as cleaning of the Air Stripper. The Air Stripper was cleaned on January 6, 1997 using the steps listed on the enclosed "Cleaning Procedures for the Air Stripper Unit." The Air Stripper was brought back on-line January 8, 1997. Prior to cleaning the Air Stripper, samples were taken from the inlet and outlet sample points. No leaks were detected.

- On January 28, 1997 the Air stripper unit was operating properly. No leaks were detected.

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

Sincerely,

HRP/*Spectrum*

Anthony L. Gentry
Project Engineer

ALG

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

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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 TOP OF CASING (Ft) (RESPECTIVELY)
RW 1,2 & 3	1/6/97	9:10	10,879,360	10	16	7	6.99	A	504	211,440	N/A, N/A, 6.20
RW 4&6	1/6/97	9:00	2,139,420	18	16.5	7.3	7.45	A	504	225,360	4.22, 7.96
RW 5A	1/6/97	8:55	5,841,100	0	12.5	15.4	12.94	B	504	391,290	4.94
RW 7	1/6/97	9:05	5,750,830	15	27	2.3	2.30	B	504	69,570	23.55
RW 1,2 & 3	1/28/97	14:00	11,083,180	8	16	6.9	6.43	B	528	203,820	N/A, N/A, 4.34
RW 4&6	1/28/97	13:35	2,426,250	9	16	10	9.05	A	528	286,830	6.70, 6.55
RW 5A	1/28/97	13:30	5,971,210	22	11	5	4.11	B	528	130,110	3.97
RW 7	1/28/97	13:52	5,823,530	7	27	2.6	2.29	B	528	72,700	23.17

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.

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ATTACHMENT 1
GROUNDWATER FLOW READINGS

DATE	RW 12&3	RW 4&6	RW 5A	RW 7	TOTAL
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
2/1/34	133870	154620	24713	47830	361033
2/15/94	125390	155560	26547	47110	354607
2/28/94	123660	142080	4750	42250	312740
3/14/34	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

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ATTACHMENT 1
GROUNDWATER FLOW READINGS

DATE	RW 12&3	RW 4&6	RW 5A	RW 7	TOTAL
7/4/95	122115	150562	1577	40923	315177
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
9/4/96	0	154470	49184	60980	264634
9/23/96	192330	0	220336	82000	494666
10/9/96	0	188940	164420	57760	411120
10/28/96	191710	220050	0	79580	491340
11/19/96		266730	10,080	70950	347760
12/3/96	0	184490	262710	47130	494330
12/16/96	125560	158840	242580	44410	571390
1/6/97	211440	225,360	391290	69570	897660
1/28/97	203820	286830	130110	72700	693460

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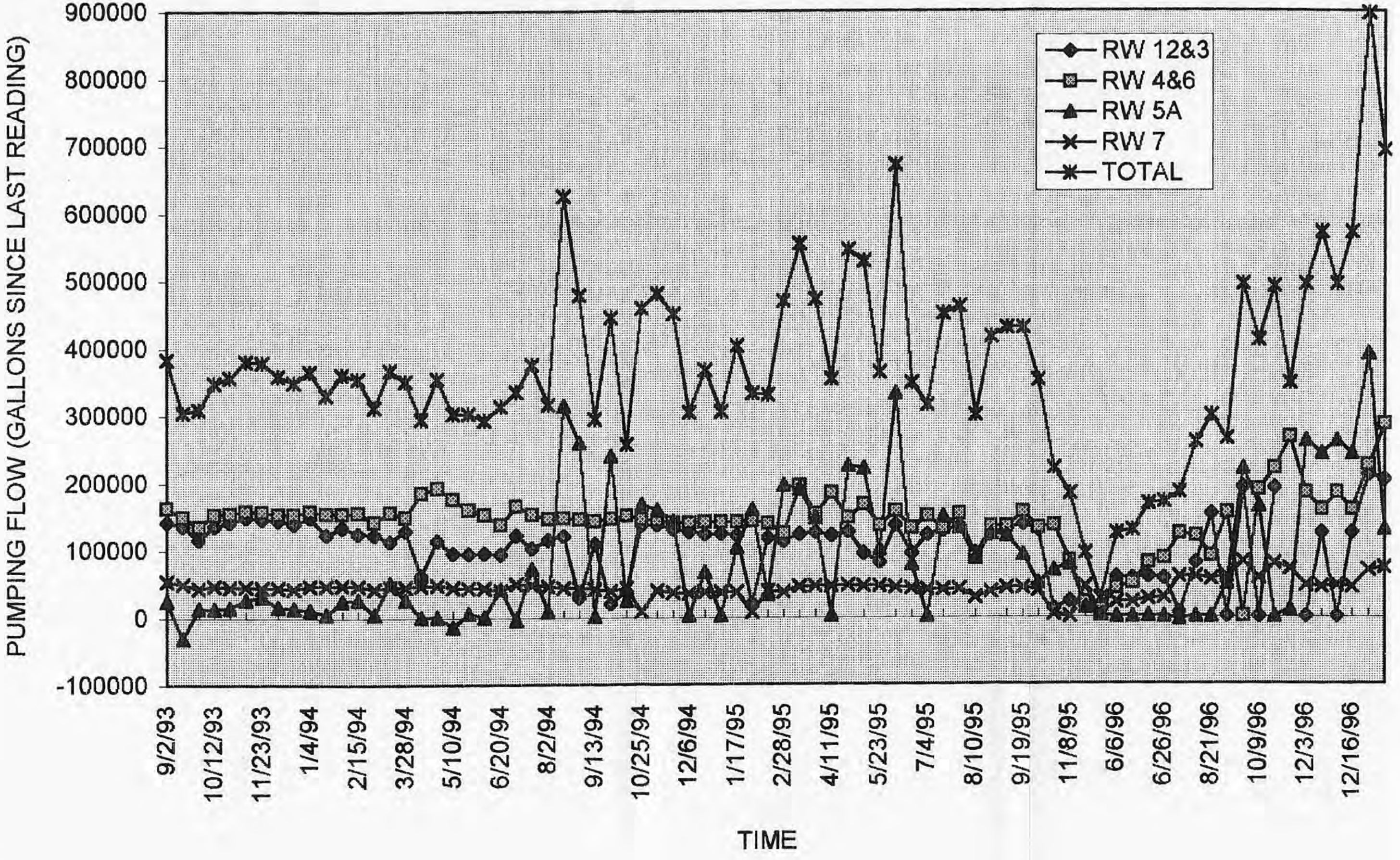
NAS PENSACOLA
GROUNDWATER RECOVERY WELL FLOW RATES



GROUNDWATER PRETREATMENT SYSTEM
OPERATION AND MAINTENANCE CHECKLIST
NAS PENSACOLA, FLORIDA

INSPECTOR'S NAME	ANTHONY L. GENTRY		
DATE	1/6/97		
AMBIENT TEMPERATURE	45		
WEATHER CONDITIONS	PARTLY CLOUDY		
ITEM	**INSPECTION CHECK**	**INSPECTION FREQUENCY**	**DATA/ COMMENTS**
INFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	6,341,240
	SAMPLE COLLECTION	MONTHLY	YES
AIR STRIPPER	PRESSURE GAUGE READING	BI-WEEKLY	24" 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	YES
SYSTEM COMPONENTS	EXPOSED PIPING CONNECTIONS	MONTHLY	OK
SYSTEM DESCRIPTION:	AIR STRIPPER OPERATING PROPERLY		
ACTIVITIES PREFORMED:	CLEANED TREYS FOLLOWING "CLEANING PROCEDURES FOR AIR STRIPPER"		
	ON JANUARY 6, 1997		

GROUNDWATER PRETREATMENT SYSTEM
OPERATION AND MAINTENANCE CHECKLIST
NAS PENSACOLA, FLORIDA

INSPECTOR'S NAME	ANTHONY L. GENTRY		
DATE	1/28/97		
AMBIENT TEMPERATURE	58		
WEATHER CONDITIONS	PARTLY CLOUDY		
ITEM	**INSPECTION CHECK**	**INSPECTION FREQUENCY**	**DATA/ COMMENTS**
INFLUENT PIPING	OPERATION OF BALL CHECK VALVE	MONTHLY	OK
	SAMPLE PORT OPERATION	MONTHLY	OK
	FLOW METER READING	BI-WEEKLY	6,961,080
	SAMPLE COLLECTION	MONTHLY	NO
AIR STRIPPER	PRESSURE GAUGE READING	BI-WEEKLY	21.9" WATER
	CLEAN / CHECK TRAYS	BI-WEEKLY	CHECKED
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	NO
SYSTEM COMPONENTS	EXPOSED PIPING CONNECTIONS	MONTHLY	OK
SYSTEM DESCRIPTION:	AIR STRIPPER OPERATING PROPERLY		
ACTIVITIES PREFORMED:	PERFORMED CHECK OF AIR STRIPPER		

REHABILITATION PROCEDURES FOR RECOVERY SYSTEMS RW-1, 2, 3 AND RW-7

- Shut down recovery system, disconnect suction piping, and remove suction piping and sensor probes from well.
- Install tremie pipe with "swab" attachment into recovery well.
- Inject 15 gallons of sodium hypochlorite (bleach - 3000 to 4000 ppm) through tremie pipe and swab into well. Bleach solution must have a contact time of at least 12 hours.
- Inject 15 gallons of bleach solution into discharge piping and allow the solution to sit until well rehabilitation is complete.
- Inject 5 gallons of water through tremie pipe and initiate swabbing of well.
- Swab well for 5 to 10 minutes at 20 minute intervals for 4 to 6 hours. (If necessary, well can sit overnight with solution in place).
- If well is allowed to sit overnight, swabbing should be performed for at least one (1) hour prior to evacuating solution from well.
- Remove tremie pipe and disconnect swab. Re-install tremie pipe and connect pipe to pump and recovery system discharge line.
- Pump excess bleach solution out of well, flushing discharge piping.
- Disconnect and remove tremie system from well.
- Re-install suction piping and sensor probes and re-start recovery system.

REHABILITATION PROCEDURES FOR RECOVERY SYSTEMS RW-4, 6 AND RW-5A

Each of these wells will first go through the same "bleach" process as RW-3 and RW-7. After the bleach solution is pumped out of the well and flushed through the discharge piping, the following activities will be performed.

- Re-install tremie pipe with "swab" attachment into recovery well.
- Inject 15 gallons of Well Klean II and muriatic acid solution (1 part Well Klean II to four (4) parts muriatic acid (31.5% HCL) through tremie pipe and swab into well.
- Inject 15 gallons of Well Klean II and muriatic acid solution into discharge piping and allow the solution to sit until well rehabilitation is complete.
- Swab well for 5 to 10 minutes at 20 minute intervals for several hours. This solution must have, at a minimum, a 12 hour contact time. (If necessary, well can sit overnight with solution in place).
- If well is allowed to sit overnight, swabbing should be performed for at least one (1) hour prior to evacuating solution from well.
- Remove tremie pipe and disconnect swab. Re-install tremie pipe and connect pipe to pump and recovery system discharge line.
- Pump excess bleach solution out of the well, flushing discharge piping.
- Disconnect and remove tremie system from well.
- Re-install suction piping and sensor probes and re-start recovery system.

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.

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