Plug and Abandonment of Exploratory Injection Well EXBRY-1

Approximately 7 miles southwest of the town of La Belle, FL off SR 80
Hendry County, Florida

SOUTH FLORIDA WATER MANAGEMENT DISTRICT

BOYLE
Engineering Excellence Since 1942
Employee Owned
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West Palm Beach, Florida 33409
561.684.3375
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www.boyleengineering.com

Mr. Robert Verrastro
South Florida Water Management District
3301 Gun Club Road
West Palm Beach, Florida 33406

March 25, 2008

Station VI

RE: **Plug & Abandonment of Exploratory Injection Well EXBRY-1**
Berry Groves Site - P/N: 17024.00

Dear Bob,

On March 3rd through March 13th, 2008, Applied Drilling Engineering, Inc (ADE) and Boyle Engineering Corporation (BEC) were present at the above referenced site to plug and abandon the Class V Exploratory Well identified as EXBRY-1. The scope of services agreed upon by Applied Drilling and Boyle Engineering specified the following tasks:

1. Prepare technical specifications and contracting services with a qualified engineering consultant.
2. Provide on-site resident observation services during the plug and abandonment of EXBRY-1.
3. Furnish all equipment, materials and labor required to properly plug and abandon the 24-inch exploratory ASR well according to applicable rules and regulations.
4. The open hole section from 634 to 658 feet below land surface will be filled with gravel or other approved fill
5. The 24-inch diameter steel casing from land surface to 634 feet below land surface will be filled with neat cement.
6. Provide all material, equipment and labor to remove and properly dispose of existing well head and appurtenance and concrete well pad. The well casing will be cut off 3 feet below land surface.
7. Provide all material, equipment and labor to remove and properly dispose of existing 12-inch diameter PVC discharge line extending from the wellhead to the Header Canal
8. Restore site to pre plug and abandonment condition.

The methods and results of the plug and abandonment activities performed at the site are documented herein. Daily field reports and photographs taken during these activities can be found in **Appendices A** and **B** respectively. Permits for the plug and abandonment of wells EXBRY-1 and CCBRY-1 can be found in **Appendix C**. Contractor submittals can be found in **Appendix D.**

Thank you for the opportunity to provide the design and oversight services for the plug and abandonment of EXBRY-1.

Sincerely,
Boyle Engineering Corporation

Michael W. Bennett.

Michael Bennett, P.G.
3/25/08

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APPENDICES

SITE LOCATION

The subject well (EXBRY-1) is located near the southwest corner of the Berry Groves Citrus Farm in Hendry County, Fl. The site is approximately 1.7 miles south of SR 80, and 7 miles southwest of the city limits of La Belle, Fl.

PLUG AND ABANDONMENT ACTIVITIES

On March 4, 2008, ADE tagged the bottom of well EXBRY-1 at 691.5 feet below land surface (bls) which was 43.5 feet deeper than anticipated based on record drawings. The natural backfill material (quartz sand) was tagged using a measured rope and weight. The rope was marked on bottom and measured with a tally tape. At approximately 9:30 AM, Florida Rock Industries, Inc. arrived onsite with five (5) cubic yards (yds^3) of limestone gravel (#57 Stone) which was then installed into the well. The gravel was transferred directly from the cement truck into the well. For the next two (2) days a total of 45 yds^3 of limestone gravel was placed into well EXBRY-1. **Table 1** below provides a summary of installed material and resulting depths.

Table 1: Limestone Gravel Schedule

Date	Time	Volume	Lift Gained	Tagged Depth	Comments
3/4/08				691.5 ft bls	Initial Tagged Depth
3/4/08	0937 hr	5 yds^3	12.5 ft	679 ft bls	
3/4/08	1215 hr	10 yds^3	5 ft	674 ft bls	
3/4/08	1440 hr	10 yds^3	5 ft	669 ft bls	
3/4/08	1705 hr	10 yds^3	7 ft	662 ft bls	
3/5/08	0830 hr	10 yds^3	21 ft	641 ft bls	
		45 yds^3	50.5 ft		Totals

Once the backfill material was installed to a depth of 641 ft bls, ADE commenced pumping ASTM Type II Neat Cement into well EXBRY-1. At approximately 1:30 PM on March 5, 2008 Florida Rock Industries, Inc. arrived onsite with four (4) yds^3 of neat cement which was then pressure grouted into the well and brought up into the casing. After the first load of cement was installed, it was allowed to cure overnight prior to installing additional cement. The neat cement was transferred from the cement truck into a 1 yd^3 steel trough where it was then pumped, via a 300 gpm rated bladder pump, into the well through 2 inch outer diameter steel tremie pipe or Hydril tubing. From March 5th through March 7th, 2008, a total of 63 yds^3 of neat cement was installed which brought the cement level to land surface. After each cement lift approximately 50 gallons of water was pumped to clear the tremie pipe of cement. **Table 2** below provides a summary of installed material and resulting depths.

Table 2: ASTM Type II Neat Cement Schedule

Lift #	Date	Time	Volume	Trimie Pipe Depth	Theoretical Lift	Tagged Depth	Comments
	3/5/08					641 ft bls	Initial Tagged Depth
1	3/5/08		4 yds^3	309 ft bls		634 ft bls	Tremie Grouted
2	3/6/08	1130	8 yds^3	609 ft bls	559 ft bls	-	
3	3/6/08	1238	8 yds^3	546 ft bls	484 ft bls	-	
4	3/6/08	1343	8 yds^3	462 ft bls	409 ft bls	-	
5	3/6/08	1454	8 yds^3	399 ft bls	334 ft bls	-	
6	3/6/08	1610	8 yds^3	315 ft bls	259 ft bls	-	
7	3/6/08	1700	8 yds^3	231 ft bls	183 ft bls	96 ft bls	Last Lift of Day
8	3/7/08	0805	8 yds^3	84 ft bls	21 ft bls		
9	3/7/08	0835	3 yds^3	-	Surface		Cement at Surface
			63 yards				Totals

Upon completion of cementing EXBRY-1 to surface, ADE pumped approximately five (5) gallons of cement into each of two (2) surficial aquifer system (SAS) pad monitor wells located about 20 feet northeast and northwest of well EXBRY-1. This brought cement levels within the monitor wells to surface.

Well CCBRY-1, located approximately 1,000 feet west of exploratory well EXBRY-1, was a continuous core hole completed to 1,000 feet bls. Shortly after coring operations, the 4 inch diameter borehole was back plugged using ASTM Type II Neat Cement. Cement levels were brought to 190 feet bls or 10 feet inside the 8 inch diameter PVC casing.

On March 13, 2008 ADE tagged the bottom of well CCBRY-1 at 199 feet bls. At 10:30 AM Florida Rock Industries, Inc arrived on site with 2.5 yards of ASTM Type II Neat Cement to plug well CCBRY-1. The cement was poured from the cement truck into a 1 yd^3 steel trough where it was then pumped, via a 300 gpm rated bladder pump, into the well. At 10:48 AM cement was visually observed coming out of the top of casing of the well. This area was then cleaned up and roughly graded.

Following all plug and abandonment activities Boyle Engineering was on site to verify the site conditions. The EXBRY-1 well head had been cut below grade and was on a trailer down the road from the site. The PVC pipe for the discharge line had been removed and was also placed on a trailer down the road from the site. The steel enclosures surrounding wells EXBRY-1 and CCBRY-1 had been removed from the site and disposed of properly. The pad monitor wells were cut off below grade and the concrete pads and man holes were removed from the site and disposed of properly.

CONCLUSIONS

The Class V Exploratory Injection Well EXBRY-1 was successfully abandoned with neat cement reaching ground surface. In addition, the continuous Core Hole identified as CCBRY-1(located approximately 1,000 feet west of EXBRY-1) and two (2) surficial aquifer system (SAS) pad monitor wells (located approximately 20 feet northeast and northwest of EXBRY-1) were successfully plugged and abandoned with neat cement brought to ground surface. The site was graded and restored to the original condition prior to the plug and abandonment activities.

APPENDIX A

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DAILY REPORT OF CONSTRUCTION

Project Number: 17024.00	Project Name: Plug & Abandonment of EXBRY-1 @ Berry Groves Site, Hendry Co.	Client: SFWMD	Date: 03/4/08	Day of Week: Tuesday	Contractor: Applied Drilling Engineering, Inc (AD)
Well Name: EXBRY-1	FDEP Permit #: 0201247-004-UA	Starting Depth: N/A	Ending Depth: N/A	Bit Size: N/A	Weather: Sunny and Warm

ACTIVITY: Plug and Abandonment of Well EXBRY-1

DESCRIPTION OF WORK:

0845 – Shamus English on site. Applied Drilling (AD) on site at time of arrival. AD sending rope down hole to double check the tag they got yesterday. AD layed rope out yesterday and marked it at 300 ft and 600 ft using a tally tape. Tagged at **691.5 ft bls.**
0900 – Gardner Strasser (FDEP) on site. AD removing bolts holding cover plate on flange of well head.
0937 – Cement truck (Florida Rock Industries, Inc.) on site with 5 yards of gravel to backfill bottom of borehole up to casing.
0940 – Commence pouring rock into well. Displaced water flowing on ground.
0952 – AD checking tag. Poured approximately 2 yards of gravel down well.
1030 – Tagged at 684 ft. Commence pouring remaining 3 yards of gravel into well.
1040 – Finished pouring gravel first load of gravel into well (5yds). Cement truck off site.
1050 – Brian Collins (SFWMD) on site.
1120 – Tagged at **679 ft** after first load of gravel (5 yds total)
1215 – Cement truck on site with second load of gravel (10 yds). Commence pouring gravel in well.
1300 – Finished pouring second load of gravel
1325 - Tagged at **674 ft** after second load of gravel (15 yds total)
1440 – Cement truck on site with third load of gravel (10 yds). Commence pouring gravel in well.
1525 – Finished pouring third load of gravel
1600 - Tagged at **669 ft** after third load of gravel (25 yds total)
1705 – Cement truck on site with fourth load of gravel (10 yds). Commence pouring gravel in well.
1715 – Finished pouring fourth load of gravel
1800 - Tagged at **662** ft after fourth load of gravel (35 yds total). Shamus English off site

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DAILY REPORT OF CONSTRUCTION

Project Number: 17024.00	Project Name: Plug & Abandonment of EXBRY-1 @ Berry Groves Site, Hendry Co.	Client: SFWMD	Date: 03/5/08	Day of Week: Wednesday	Contractor: Applied Drilling Engineering, Inc (AD)
Well Name: EXBRY-1	FDEP Permit #: 0201247-004-UA	Starting Depth: N/A	Ending Depth: N/A	Bit Size: N/A	Weather: Sunny and Warm

ACTIVITY: Plug and Abandonment of Well EXBRY-1

DESCRIPTION OF WORK:

0800 – Shamus English on site. Cement truck on site with fifth load of gravel (10 yds) at time of arrival. Commence pouring gravel in well.
0840 – Finished pouring fifth load of gravel. Gardner Strasser (FDEP) on site.
0910 - Tagged at **641 ft** after fifth load of gravel (45 yds total). AD to pour approximately 4 yds of cement on top of gravel to bring plug up into casing.
1030 – AD tripping down hole with tremie pipe.
1100 – Brian Collins (SFWMD) on site.
1330 – Cement truck on site with 4 yds neat cement. AD will pressure grout 4 yds cement, then let set under pressure over night.
1345 – Commenced pressure grouting (first lift), Compressor reading 125 psi.
1355 – Finished pressure grouting, flushing with 150 gallons of water. AD to tag tomorrow.
1400 – Finished flushing, AD detaching hoses.
1430 – Shamus English off site.

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DAILY REPORT OF CONSTRUCTION

Project Number: 17024.00	Project Name: Plug & Abandonment of EXBRY-1 @ Berry Groves Site, Hendry Co.	Client: SFWMD	Date: 03/6/08	Day of Week: Thursday	Contractor: Applied Drilling Engineering, Inc (AD)
Well Name: EXBRY-1	FDEP Permit #: 0201247-004-UA	Starting Depth: N/A	Ending Depth: N/A	Bit Size: N/A	Weather: Cloudy & Rainy

ACTIVITY: Plug and Abandonment of Well EXBRY-1

DESCRIPTION OF WORK:

0845 – Shamus English on site. Cement truck on site at time of arrival. Tagged this morning at **634 ft bls** from first lift of cement (4 yds total – neat cement)

0855 – Cement is too thick to be lifted from trough with bladder pump and has rocks in it that aregetting stuck in bladder pump. Paul (AD) advised cement truck driver to take load back and return with cement that is thinner. Cement truck off site.

1125 – Cement truck on site with approx. 8 yds neat cement. AD placed wire mesh over trough to keep rocks out.

1130 – Commence pumping second lift of cement. Tremie pipe set at 609 ft bls

Theoretical lift calculations:
8 yds per load * 27 ft^3/yd * 1 ft casing/2.89 ft^3 = 74.74 feet of lift per load

1147 – Finished pumping second lift of cement, flushing with 50 gallons of water. Theoretical lift = 634 – 74.74 = **559.26 ft bls after second lift** of cement (12 yds total). Pulling tremie pipe up to 546 ft bls.

1230 – Cement truck on site with approx. 8 yds neat cement.

1238 – Commence pumping third lift of cement. Tremie pipe set at 546 ft bls

1255 – Finished pumping third lift of cement, flushing with 50 gallons of water. Theoretical lift = 559.26 – 74.74 = **484.52 ft bls after third lift** of cement (20 yds total). Pulling tremie pipe up to 462 ft bls.

1335 – Cement truck on site with approx. 8 yds neat cement.

1343 – Commence pumping fourth lift of cement. Tremie pipe set at 462 ft bls

1358 – Finished pumping fourth lift of cement, flushing with 50 gallons of water. Theoretical lift = 484.52 – 74.74 = **409.78 ft bls after fourth lift** of cement (28 yds total). Pulling tremie pipe up to 399 ft bls.

1420 – Begins to rain

1450 – Cement truck on site with approx. 8 yds neat cement.

1454 – Commence pumping fifth lift of cement. Tremie pipe set at 399 ft bls

1509 – Finished pumping fifth lift of cement, flushing with 50 gallons of water. Theoretical lift = 409.78 – 74.74 = **335.04 ft bls after fifth lift** of cement (36 yds total).

1605 – Cement truck on site with approx. 8 yds neat cement.

1610 – Commence pumping sixth lift of cement.

1624 – Finished pumping sixth lift of cement, flushing with 50 gallons of water. Theoretical lift = 335.04 – 74.74 = **260.3 ft bls after sixth lift** of cement (44 yds total).

1650 – Cement truck on site with approx. 8 yds neat cement.

1700 – Commence pumping seventh lift of cement.

1714 – Finished pumping seventh lift of cement, flushing with 50 gallons of water. Theoretical lift = 260.3 – 74.74 = **185.56 ft bls after seventh lift** of cement (52 yds total).

1730 – Shamus English off site.

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DAILY REPORT OF CONSTRUCTION

Project Number: 17024.00	Project Name: Plug & Abandonment of EXBRY-1 @ Berry Groves Site, Hendry Co.	Client: SFWMD	Date: 03/7/08	Day of Week: Friday	Contractor: Applied Drilling Engineering, Inc (AD)
Well Name: EXBRY-1	FDEP Permit #: 0201247-004-UA	Starting Depth: N/A	Ending Depth: N/A	Bit Size: N/A	Weather: Sunny & Warm

ACTIVITY: Plug and Abandonment of Well EXBRY-1

DESCRIPTION OF WORK:

0730 – Shamus English on site. AD on site at time of arrival. Tagged this morning at 96 ft bls (89 ft higher than theoretical calculation – it is believed that each truck load was carrying more than 8 yds)
0800 – Cement truck on site with approx. 8 yds neat cement.
0805 – Commence pumping eighth lift of cement.
0821 – Finished pumping eighth lift of cement, flushing with 20 gallons of water. Theoretical lift = 96 – 74.74 = **21.26 ft bls after eighth lift** of cement (60 yds total).
0830 – Cement truck on site with approx. 3 yds neat cement.
0835 – Commence pumping ninth lift of cement. Will pump cement until it is visibly coming out of discharge line on well head.
0840 – Cement coming out of discharge line on well head.
0843 – Finished pumping ninth lift of cement, cement is at discharge line on well head approx. 2 ft above land surface. AD is pouring approx. 5 gallons of neat cement into each of the two monitor wells located 20-30 ft NE and NW of well EXBRY-1 as requested by Gardner Strasser (FDEP).
0900 – Went to tag core well located approx. 1,000 ft west of exploratory well EXBRY-1. Weight on tagging tool encountered drilling mud at 25 ft bls and would not drop any lower, will have to tag with hard pipe.
0930 – Shamus English off site.

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DAILY REPORT OF CONSTRUCTION

Project Number: 17024.00	Project Name: Plug & Abandonment of EXBRY-1 @ Berry Groves Site, Hendry Co.	Client: SFWMD	Date: 03/13/08	Day of Week: Thursday	Contractor: Applied Drilling Engineering, Inc (AD)
Well Name: EXBRY-1	FDEP Permit #: 0201247-004-UA	Starting Depth: N/A	Ending Depth: N/A	Bit Size: N/A	Weather: Sunny & Warm

ACTIVITY: Plug and Abandonment of Well CCBRY-1

DESCRIPTION OF WORK:

1000 – Shamus English on site. AD on site and waiting on cement truck to abandon well CCBRY-1 at time of arrival. CCBRY-1 was hard tagged at 199 feet bls. EXBRY-1 site has been cleared of all material and roughly graded. The well head and PVC discharge line has been removed and sitting on trailers down the road.
1030 – Cement truck on site with 2.5 yards cement to plug and abandon well CCBRY-1 located approx. 1,000 feet west of EXBRY-1.
1040 – AD commenced pumping cement.
1048 – Cement at top of casing. Concrete pad around well has been removed.
1052 – Stopped pumping cement.
1058 – cement truck off site. Permit # W08-037 for abandonment of CCBRY-1.
1115 – AD cutting 4" PVC casing pipe at ground surface.
1125 – AD roughly grading ground around well and cleaning up site.
1145 – Shamus English off site.

0930 – Shamus English off site.

APPENDIX B

Photo 1: Site prior to plug and abandonment activities (EXBRY-1)

Photo 2: Installing gravel into well EXBRY-1

Photo 3: Cementing well EXBRY-1

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Project: 17024.00
Created By: SME
Date: 3/10/2008

South Florida Water Management District
Plug & Abandonment of EXBRY-1 at
Berry Groves Site, Hendry Co.

Project Photographs

Photo 4: Cementing well EXBRY-1

Photo 5: Cementing well EXBRY-1

Photo 6: Cement discharging from well head of EXBRY-1

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Project: 17024.00
Created By: SME
Date: 3/10/2008

South Florida Water Management District

Plug & Abandonment of EXBRY-1 at Berry Groves Site, Hendry Co.

Project Photographs

Photo 7: Previous location of well EXBRY-1 upon completion of plug and abandonment activities

Photo 8: Cementing well CCBRY-1

Photo 9: Previous location of well CCBRY-1 upon completion of plug and abandonment activities

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Project: 17024.00
Created By: SME
Date: 3/14/2008

South Florida Water Management District
Plug & Abandonment of EXBRY-1 at
Berry Groves Site, Hendry Co.

Project Photographs

APPENDIX C

Department of Environmental Protection

Jeb Bush
Governor

Southeast District
400 N. Congress Ave., Suite 200
West Palm Beach, Florida 33401

David B. Struhs
Secretary

February 10, 2006 **ELECTRONIC CORRESPONDENCE**

In the Matter of an
Application for Permit by:

South Florida Water Management District
Ms. Carol Ann Wehle

Executive Director
3301 Gun Club Road
West Palm Beach, FL 33406
Email address: CWehle@sfwmd.gov

PA File No.: FL0339644-001-IW7A
Hendry County
SFWMD - Caloosahatchee River ASR Pilot Project
Cycle Testing Recovered Water Discharge Facility
Facility Identification No.: FL0339644

NOTICE OF PERMIT ISSUANCE

Dear Ms. Wehle:

Enclosed is Permit Number FL0339644, which authorizes construction and operation of a cycle testing recovered water discharge facility for an ASR pilot project. The ASR and discharge systems will be located near the southwest corner of Berry Groves at Hendry County, at the NW 1/4 of NE 1/4 fraction of Section 6 in T44S, R28E. The site is approximately 1.7 miles south of SR 80, and seven (7) miles southwest of the city limits of LaBelle, Florida. (Other matters pertaining to approval of the ASR well, raw surface water withdrawal, and well recharge requirements are beyond the scope of the permit.) The discharge permit is issued under Sections 403.087, 403.088 and 403.0885, Florida Statutes (F.S.)

Monitoring requirements under this permit are effective on the first day of the second month following permit issuance. Until such time, the permittee shall continue to monitor and report in accordance with previously effective permit requirements, if any.

The Department's proposed agency action shall become final unless a timely petition for an administrative hearing is filed under Sections 120.569 and 120.57, Florida Statutes, within fourteen days of receipt of notice. The procedures for petitioning for a hearing are set forth below.

A person whose substantial interests are affected by the Department's proposed permitting decision may petition for an administrative proceeding (hearing) under Sections 120.569 and 120.57, Florida Statutes. The petition must contain the information set forth below and must be filed (received by the clerk) in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000.

Under Rule 62-110.106(4), Florida Administrative Code, a person may request enlargement of the time for filing a petition for an administrative hearing. The request must be filed (received by the clerk) in the Office of General Counsel before the end of the time period for filing a petition for an administrative hearing.

Petitions by the applicant or any of the persons listed below must be filed within fourteen days of receipt of this written notice. Petitions filed by any persons other than those entitled to written notice under Section 120.60(3), Florida Statutes, must be filed within fourteen days of publication of the notice or within fourteen days of receipt of the written notice, whichever occurs first. Under Section 120.60(3), Florida Statutes, however, any person who has

asked the Department for notice of agency action may file a petition within fourteen days of receipt of such notice, regardless of the date of publication.

The petitioner shall mail a copy of the petition to the applicant at the address indicated above at the time of filing. The failure of any person to file a petition or request for enlargement of time within fourteen days of receipt of notice shall constitute a waiver of that person's right to request an administrative determination (hearing) under Sections 120.569 and 120.57, Florida Statutes. Any subsequent intervention (in a proceeding initiated by another party) will be only at the discretion of the presiding officer upon the filing of a motion in compliance with Rule 28-106.205, Florida Administrative Code.

A petition that disputes the material facts on which the Department's action is based must contain the following information:

(a) The name, address, and telephone number of each petitioner; the name, address, and telephone number of the petitioner's representative, if any; the Department permit identification number and the county in which the subject matter or activity is located;
(b) A statement of how and when each petitioner received notice of the Department action;
(c) A statement of how each petitioner's substantial interests are affected by the Department action;
(d) A statement of all disputed issues of material fact. If there are none, the petition must so indicate;
(e) A statement of facts that the petitioner contends warrant reversal or modification of the Department action;
(f) A concise statement of the ultimate facts alleged, as well as the rules and statutes which entitle the petitioner to relief; and
(g) A statement of the relief sought by the petitioner, stating precisely the action that the petitioner wants the Department to take.

Because the administrative hearing process is designed to formulate final agency action, the filing of a petition means that the Department's final action may be different from the position taken by it in this notice. Persons whose substantial interests will be affected by any such final decision of the Department have the right to petition to become a party to the proceeding, in accordance with the requirements set forth above.

In addition to requesting an administrative hearing, any petitioner may elect to pursue mediation. The election may be accomplished by filing with the Department a mediation agreement with all parties to the proceeding (i.e., the applicant, the Department, and any person who has filed a timely and sufficient petition for a hearing). The agreement must contain all the information required by Rule 28-106.404, Florida Administrative Code. The agreement must be received by the clerk in the Office of General Counsel of the Department at 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida 32399-3000, within ten days after the deadline for filing a petition, as set forth above. Choosing mediation will not adversely affect the right to a hearing if mediation does not result in a settlement.

As provided in Section 120.573, Florida Statutes, the timely agreement of all parties to mediate will toll the time limitations imposed by Sections 120.569 and 120.57, Florida Statutes, for holding an administrative hearing and issuing a final order. Unless otherwise agreed by the parties, the mediation must be concluded within sixty days of the execution of the agreement. If mediation results in settlement of the administrative dispute, the Department must enter a final order incorporating the agreement of the parties. Persons seeking to protect their substantial interests that would be affected by such a modified final decision must file their petitions within fourteen days of receipt of this notice, or they shall be deemed to have waived their right to a proceeding under Sections 120.569 and 120.57, Florida Statutes. If mediation terminates without settlement of the dispute, the Department shall notify all parties in writing that the administrative hearing processes under Sections 120.569 and 120.57, Florida Statutes, remain available for disposition of the dispute, and the notice will specify the deadlines that then will apply for challenging the agency action and electing remedies under those two statutes.

This permit is final and effective on the date filed with the clerk of the Department unless a petition (or request for enlargement of time) is filed in accordance with the above. Upon the timely filing of a petition (or request for enlargement of time) this permit will not be effective until further order of the Department.

Any party to this permit has the right to seek judicial review under Section 120.68, Florida Statutes, by the filing of a notice of appeal under Rules 9.110 and 9.190, Florida Rules of Appellate Procedure with the clerk of the Department in the Office of General Counsel, 3900 Commonwealth Boulevard, Mail Station 35, Tallahassee, Florida, 32399-3000; and by filing a copy of the notice of appeal accompanied by the applicable filing fees with the appropriate district court of appeal. The notice of appeal must be filed within 30 days from the date when this permit is filed with the clerk of the Department.

As stated before in the draft permit , the Department offers to withhold billing the permittee for the regular annual NPDES permit-user fee, until discharge finally begins. Please notify the Department in writing at least thirty (30) days before commencement of discharge, so that we can mail your office the first prorated annual fee invoice for the new discharge activity. This process will also allow us to begin formally monitoring the submission of the discharge monthly reports (DMRs), and performance of other requirements under the permit.

If you have any questions, please contact Paul Sze at (561) 681-6747 or e-mail to paul.sze@dep.state.fl.us.

Executed in West Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

Kevin R. Neal 2/10/06

Kevin R. Neal Date
Director of District Management
Southeast District
400 N. Congress Ave., Suite 200
West Palm Beach, Florida 33401-2913

KRN/LH:TP/PS/sFL0339644-001-IW7A/NR.doc/permit

Enclosures: Final Permit No. FL0339644 and Amendment to Statement of Basis
Discharge Monitoring Report (DMR) Forms

CERTIFICATE OF SERVICE

The undersigned duly designated deputy agency clerk hereby certifies that this NOTICE OF PERMIT ISSUANCE and all copies were transmitted before the close of business on February 10, 2006 to the listed persons.

FILING AND ACKNOWLEDGMENT

FILED, on this date, under section 120.52(7), Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Linda C Ischnort 2/10/06
[Clerk] [Date]

Copies furnished to (by electronic mail unless noted otherwise):

Monica Sudano, DEP/TLH	email to: Monica.Sudano@dep.state.fl.us
Patrick Pierson, DEP/WPB	email to: Patrick.Pierson@dep.state.fl.us
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Department of Environmental Protection

Jeb Bush
Governor

Southeast District
400 N. Congress Ave., Suite 200
West Palm Beach, Florida 33401

David B. Struhs
Secretary

STATE OF FLORIDA
INDUSTRIAL WASTEWATER FACILITY PERMIT

PERMITTEE:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

PERMIT NUMBER: FL0339644
PA FILE NUMBER: FL0339644-001-IW7A
ISSUANCE DATE: February 10, 2006
EXPIRATION DATE: February 9, 2011

RESPONSIBLE AUTHORITY:

Ms. Carol Ann Wehle
Executive Director

FACILITY:

SFWMD - Caloosahatchee River ASR Pilot Project Cycle
Testing Recovered Water Discharge Facility
Berry Groves (NW 1/4 of NE 1/4 of Sec. 6, T44S, R28E)
LaBelle, FL 33406
Hendry County

Latitude: 26° 41' 11" N Longitude: 81° 33' 21" W (approximate location of ASR well pad)

This permit is issued under the provisions of Chapter 403, Florida Statutes, and applicable rules of the Florida Administrative Code and constitutes authorization to discharge to waters of the state under the National Pollutant Discharge Elimination System. The above named permittee is hereby authorized to construct and operate the facilities shown on the application and other documents attached hereto or on file with the Department and made a part hereof and specifically described as follows:

PROJECT DESCRIPTION:

The facility is a pilot project for SFWMD's Caloosahatchee River Aquifer Storage and Recovery (ASR) well system. The ASR program is a component of the Comprehensive Everglades Restoration Plan (CERP), to enhance crucial water supply management for the state. Cycle tests include well recharge followed immediately or soon by recovery. The tests are performed to determine the recovery efficiency - ratio of recovery volume with acceptable water quality versus volume stored, and to establish changes in water quality from geochemical activities from storage. The ASR system consists of a single 24-inch diameter Class V, Group 7 injection well, and will recharge, store and recover water from the upper Floridan Aquifer System, a confined aquifer ranging in depths between 700 to 1,2000 feet bls. During recharge, raw surface water is withdrawn from the Header Canal, treated to meet Primary and Secondary Drinking Water Standards by sedimentation, filtration, and disinfection before injection to the aquifer. In recovery, the recovered water after removal of first flush is treated by aeration and settling and returns to the Header Canal.

PERMITTEE:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

PERMIT NUMBER: FL0339644

Issuance date: February 10, 2006
Expiration date: February 9, 2011

This permit authorizes the discharge to surface water of up to five (5.0) MGD or 3,500 gpm, based on a maximum daily flow basis, of treated recovered water from the ASR well. The recovered water is expected to consist mostly of treated surface water stored in the Floridan Aquifer, and to a lesser degree the native brackish water in the aquifer.

WATER TREATMENT:

Treatment is provided for the recharge (pre-storage) and recovery (post-storage) stages with the following schemes: (1) Pretreatment of the raw surface water to meet Primary and Secondary Drinking Water Standards before recharge into the Floridan Aquifer system; (2) Further treatment or retreatment of the recovered water from storage in the Floridan Aquifer system to meet the applicable Surface Water Standards before discharge back to surface water.

Pretreatment Process - Sedimentation of raw surface water to remove settable solids is achieved at a settling pond measured approximately 175 feet by 80 feet. Settled water then undergoes filtration treatment at a subsurface infiltration gallery consisting of a network of 16-inch diameter slotted underdrain pipes. Carbon dioxide is used for pH adjustment. An ultraviolet (UV) light process provides final disinfection before recharge into the ASR well.

Retreatment Process - The "first flush" from ASR recovery, or water recovered from approximately the first hour, is discarded by diversion to a 0.2 MG first flush holding pond for percolation disposal. Water recovered afterward is aerated by a cascade aerator process before entering a 2.52 MG settling pond providing 12 hours of residence time. Further natural water treatment (e.g. reaeration and cooling) by atmospheric exposure is also achieved in the pond.

The applicant has proposed for quality control purposes, a recovery limit - based on the specific conductance level as measured at the wellhead, not to exceed the background canal level for startup cycle tests, and the numerical limit of 1,275 µmhos/cm for subsequent lengthier cycle tests.

EFFLUENT DISPOSAL:

During recovery, after the 2.52 MG settling pond is full, treated water will begin to gravity flow through an overflow weir back to the Header Canal, to the same location where raw surface water is originally withdrawn.

Surface Water Discharge:

A new 5.0 MGD maximum discharge to Header Canal (Class IV waters), Outfall D-001. The Header Canal outfall line is approximately 470 feet in length as measured from the settling pond to the canal, and discharges at an unspecified depth at the canal. The point of discharge is located approximately at latitude 26°41'17" N, longitude 81°33'08" W. The outfall line is approximately 850 feet west of the ASR well pad.

The Header Canal runs in an east-west direction, and is bound to the west, approximately 1,700 feet, by Townsend Canal (Class III fresh waters), and to the east, approximately 4.5 miles, by Roberts Canal (Class III fresh waters). From the point of confluence, Townsend Canal then flows northerly for approximately two (2) miles into the Caloosahatchee River (Class III fresh waters), whereas Roberts Canal flows northwesterly for approximately four (4) miles into the same river.

For reference within this permit, the outfall from Header Canal to Townsend Canal is referred to as Outfall D-002 (latitude 26°41'16" N, longitude 81°33'27" W); outfall from Townsend Canal to Caloosahatchee River is Outfall D-003 (latitude 26°42'50" N, longitude 81°33'45" W); outfall from Header Canal to Roberts Canal is Outfall D-004 (latitude 26°41'19" N, longitude 81°28'39" W); and outfall from Roberts Canal to Caloosahatchee River is Outfall D-005 (latitude 26°43'37" N, longitude 81°31'21" W). Except for Header

Canal which is a Class IV waters (agricultural canal), all other named water bodies are by default classified as Class III waters.

IN ACCORDANCE WITH: The limitations, monitoring requirements and other conditions as set forth in Part I through Part VIII on pages 3 through 19 of this permit.

PERMITTEE:

South Florida Water Management District
3301 Gun Club Road
West Palm Beach, FL 33406

PERMIT NUMBER: FL0339644

Issuance date: February 10, 2006
Expiration date: February 9, 2011

I. Effluent Limitations and Monitoring Requirements

A. Surface Water Discharges

1. During the period beginning upon placing the system into operation and lasting through the expiration date of this permit, the permittee is authorized to discharge treated recovered water from an ASR pilot project, from Outfall D-001. Such discharge shall be limited and monitored by the permittee as specified below:

	Discharge Limitations (Class IV Surface Water Standards)			Monitoring Requirements		
Parameters (units)	Monthly Average	Daily Maximum	Daily Minimum	Monitoring Frequency	Sample Type	Sample Point
Flow (MGD)	Report	5.0	--	Daily, When Discharging	Flowmeter	EFF-01
pH (SU)	--	8.5	6.0	Monthly, When Discharging	Instantaneous	EFF-01
Oxygen, Dissolved (DO) (MG/L)	--	--	4.0 over 24-hr; 3.0 any sample	Monthly, When Discharging	Instantaneous	EFF-01
Coliform, Total (#/100ML)	--	Report	--	Monthly, When Discharging	Grab	EFF-01
Arsenic, Total Recoverable (UG/L)	--	50.0	--	Monthly, When Discharging	Grab	EFF-01
Chromium, Hexavalent Tot Recoverable (UG/L)	--	11.0	--	Monthly, When Discharging	Grab	EFF-01
Iron, Total Recoverable (UG/L)	--	1,000.0	--	Monthly, When Discharging	Grab	EFF-01
Mercury, Total Recoverable (UG/L)	--	0.2	--	Monthly, When Discharging	Grab	EFF-01
Selenium, Total Recoverable (UG/L)	--	Report	--	Monthly, When Discharging	Grab	EFF-01
Silver, Total Recoverable (UG/L)	--	Report	--	Monthly, When Discharging	Grab	EFF-01
Alpha, Gross Particle Activity (PCI/L)	--	15.0	--	Monthly, When Discharging	Grab	EFF-01
Chloride (as Cl) (MG/L)	--	Report	--	Monthly, When Discharging	Grab	EFF-01
Specific Conductance (UMHO/CM)	--	See Cond. I.A.7.	--	Monthly, When Discharging	Instantaneous	EFF-01
Specific Conductance (Background) (UMHO/CM)	--	Report	--	Monthly, When Discharging	Grab	SWB-01
Whole Effluent Toxicity (Acute)	See Permit Condition I.A.13 and I.A.14					EFF-01

2. Effluent samples shall be taken at the monitoring site locations listed in permit condition I.A.1 and as described below:

Sample Point	Description of Monitoring Location
EFF-01	Discharge from settling pond overflow weir to the Header Canal outfall before mixing with the receiving water.
SWB-01	Ambient surface water from the Header Canal. (Sample must be taken before the recovery discharge cycle.)

3. The Discharge Monitoring Reports (DMR's) required in this section shall be submitted monthly pursuant to Permit Condition I.E.2. If in the entire month there is no discharge of recovered water from the settling pond to the Header Canal, the NO DISCHARGE FROM SITE check-off box on page 1 of the DMR shall be checked, and sampling is not required. "Discharge" is defined as the settling pond level rising above the weir at the overflow structure, from either ASR well recovery activity or normal rainfall.

4. All sampling events required in this section should be scheduled, where feasible, further away from the earlier days of the recovery cycle. The samples should be representative of the overall recovered water quality, taking into account a likely higher presence of native brackish water later in the recovery cycle. If more than one analytical result is collected for any monitored parameters, the most critical data set shall be reported.

5. There shall be no discharge of floating solids or visible foam in other than trace amounts.

6. The discharge shall not cause a visible sheen on the receiving water.

7. The limit for Specific Conductance shall be 1.5 times the background value or 1,275 UMHOS/CM, whichever is greater.

   Compliance Determination - The measured effluent value shall be recorded on the DMR in the parameter row for Specific Conductance (effluent). The measured background value shall be recorded on the DMR in the parameter row for Specific Conductance (background). The calculated effluent limit shall be recorded on the DMR in the parameter row for Specific Conductance (calculated limit). Compliance with the effluent limitation is determined by calculating the difference between the measured effluent value and the calculated effluent limit. The compliance value shall be recorded on the DMR in the parameter row for Specific Conductance (effluent minus calculated limit). If the compliance value is greater than 0.00, the permittee will be considered in violation of the limitation.

8. The permit may be revised to include monitoring provisions for chlorination related disinfection byproducts (DBP's), if chlorine disinfection not presently anticipated is utilized in the future.

9. Within 180 days of ASR project startup, the permittee shall submit to this office a summary list of all existing monitoring programs for the cycle testing, as may be required by other Department programs or outside agencies. The Department's Industrial Waste Program may then request to be copied on certain routine reports, to enhance the program's ability to evaluate discharge performance.

10. The discharge is considered to be in compliance with the applicable surface water standards and permit if: (1) Sampling results at Outfall D-001 meet the applicable Class IV Surface Water Standards specified herein; and (2) The same results do not indicate exceedance of the Class III Surface Water Standards as given Rule 62-302.530, F.A.C. (tabulated in the Statement of Basis). The Department may request additional sampling to ensure permit compliance at the downstream Townsend Canal (outfall D-002) and Roberts Canal (D-004) junctions.

11. In the event a single daily sample result for dissolved oxygen falls below the 24-hour average limit of 4.0 mg/L, the permittee may perform additional sampling to show compliance based on the average result.

12. The permittee may be required to provide additional water treatment process, or otherwise modify the cycle testing scope, if there is evidence the recovered water discharge is not in compliance with the permit.

13. **Routine Toxicity Testing**. A determination of the toxicity of the ASR recovered water shall be conducted during each cycle testing period in accordance with the following protocol:

    a. Effluent Limitation

        1. Whole effluent acute toxicity shall not exceed in any "routine" or in any "additional follow-up" test an LC50 of less than 100% effluent. [Rule 62-302.200(1), Rule 62-302.500(1)(a)4 and Rule 62-4.244(3)(a), F.A.C.]

    b. Monitoring Frequency

        1. "Routine" toxicity tests shall be conducted once every two months for the duration of each cycle test starting with the second day of the recover phase of the cycle unless a reduction in the frequency of monitoring is granted in writing by the Department.

        2. Upon completion of six consecutive, valid "routine" tests that demonstrate compliance with the effluent limitation in section a.1. above, the permittee may submit a written request to the Department for a reduction in monitoring frequency. The Department shall review this request within 45 days of receipt and approve or deny the request in writing. Materials submitted to the Department for review should include a summary of the data and the complete bioassay reports for all tests being considered. In no case shall the frequency of monitoring be reduced to less than annually. Requested reductions in monitoring shall only become effective upon Department approval.

        3. If a test within a sequence of the six is deemed invalid, but is replaced by a repeat valid test initiated within seven days of the invalidation, the invalid test will not be counted against the requirement for six consecutive valid tests for the purpose of evaluating the reduction of monitoring frequency. If two or more invalidations occur, this provision does not apply.

    c. Test Requirements

        1. Routine Tests: All routine tests shall be conducted using a control (0% effluent) and a minimum of five dilutions: **100%, 50%, 25%, 12.5%, and 6.25%** effluent.

        2. Additional Follow-up Tests, if required:

            (a) If a routine test does not meet the acute toxicity limitation in section a.1. above, the permittee shall conduct two additional follow-up tests on each species that failed the test.

            (b) The first and second additional follow-up test shall be conducted using a control (0% effluent) and a minimum of five dilutions: 100%, 50%, 25%, 12.5% and 6.25% effluent. All test results shall be statistically analyzed according to the Appendices in EPA-821-R-02-012.

            (c) The first test shall be initiated within two weeks of the end of the failed routine test. The remaining additional follow-up test shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed.

        3. The permittee shall conduct 96-hour acute static renewal multi-concentration toxicity tests using the daphnid, Ceriodaphnia dubia, and the bannerfin shiner, Cyprinella leedsi, concurrently.

        4. All test species, procedures and quality assurance criteria used shall be in accordance with Methods for Measuring Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, EPA-821-R-02-012. Any deviation of the bioassay procedures outlined herein shall be submitted in

writing to the Department for review and approval prior to use. In the event the above method is revised and adopted by Department rule, the permittee shall conduct acute toxicity testing in accordance with the revised method.

5. The control water and dilution water used will be moderately hard water as described in EPA-821-R-02-012, Table 7, or the most current edition.

d. Sampling Requirements

1. Routine tests hall be conducted on four separate grab samples collected over the recovery period in order to catch any peaks of toxicity associated with changes in effluent quality as indicated in changes in specific conductance levels. The first sample will be collected on the second day of the recover phase of the cycle. The second and third samples will be collected when the daily specific conductance measurements of the recovered water increases by one-third and two-thirds of the difference between the day-two conductivity and 1275 µmhos/cm, respectively. The fourth grab sample will be collected during the final two days of recovery or when the daily specific conductance measurement reaches or exceeds 1275 µmhos/cm, which ever occurs first.

2. The two additional follow-up tests, if required, will be conducted on two separate grab samples collected following a failed routine test. The grab sample for the first additional follow-up test will be collected within one-week of the end of the failed routine test. The collection of grab samples for the additional follow-up tests shall be conducted weekly thereafter until a total of two valid additional follow-up tests are completed. Results for each additional test shall include the determination of LC50 values with 95% confidence limits.

e. Quality Assurance Requirements

1. A standard reference toxicant (SRT) quality assurance (QA) acute toxicity test shall be conducted with each species used in the required toxicity tests either concurrently or no greater than 30 days before the date of each routine or additional follow-up test conducted. The SRT-QA data shall be submitted with each companion routine or additional follow-up test required.

2. If the mortality in the control (0% effluent) exceeds 10% for either species in any test, the test for that species (including the control) shall be invalidated and the test repeated.

3. If during any routine separate grab sample test, 100% mortality occurs prior to the end of the test and control mortality is less than 10% at that time, that test (including the control) shall be terminated with the conclusion that the test fails.

4. Additional follow-up tests shall be evaluated for acceptability based on the concentration-response relationship as required and described by EPA-821-R-02-012, Section 12.2.6.2.

f. Reporting Requirements

1. Results from all required tests shall be reported on the Discharge Monitoring Report (DMR) as follows:

(a) Routine Test Results: If an LC50> 100% effluent occurs in all four separate grab sample tests for the test species, ">100%" should be entered on the DMR for that test species. If in any of the four separate grab sample tests for the test species a LC50 < 100% effluent occurs, the lowest calculated LC50 effluent concentration shall be entered on the DMR for that test species.

(b) Additional Follow-up Test Results: Report the calculated LC50 value for that test species.

2. A bioassay laboratory report for the routine test shall be prepared according to EPA-821-R-02-012, Section 12, Report Preparation and Test Review and mailed to the Department at the address below within 30 days of the completion of the test.

3. For additional follow-up tests, a single bioassay laboratory report shall be prepared according to EPA-821-R-02-012, Section 12, and mailed within 45 days of completion of the second valid additional follow-up test. If any additional follow-up test, or two consecutive routine tests, do not meet the effluent limitation specified in 1.a. above, the permittee shall contact with the Department within 30 days of the laboratory report submittal to discuss the corrective actions necessary to remedy the observed acute toxicity.

4. All bioassay reports shall be submitted to the Department at the addresses listed Permit Condition I.E.2.

g. Alternative Methodology. The Department understands that a protocol is being developed during Phase 1 (Screening-Level Method Development) of the "Preliminary Investigation of the Ecotoxicological Effects of Recovered ASR Water on Receiving Water Ecosystems" (SOW C-C13401P-WO07). Once the methods are developed under the Phase 1 effort, the developed methods shall be provided to the Department for review and approval. Be aware that if the study recommends testing in any species other than those approved by EPA in 40 CFR 136 for whole effluent toxicity testing in NPDES permits, these test organisms and any modification to the approved methods must be approved by EPA before they can be considered. If the recommended organisms are not approved by EPA they cannot be used for permit compliance, nevertheless, they could provide valuable information to the Regional Study goals and can be pursued to augment the information obtained by the approved methods.

14. **Specific Conductivity Toxicity Testing.** Toxicity testing is to be conducted during the first cycle test in accordance with the Cycle Testing Plan to determine the toxicity effects of the mixed recovered water under variable specific conductance ranges.

a. Monitoring Frequency

1. This toxicity testing shall commence when the specific conductance exceeds 1,275 micromhos/cm (µmhos/cm) and shall continue once every five days for the duration of the 15 day discharge event or once every six days if the event is scheduled for greater than 15 days.

2. The specific conductance and the ionic components of the reclaimed water (Cl, Ca, Mg) shall be analyzed concurrent with the toxicity testing.

b. Test Requirements

Toxicity testing shall be conducted in accordance with Permit Condition I.A.13.c.

c. Sampling Requirements

All tests will be conducted on a single grab sample.

d. Quality Assurance Requirements

Quality Assurance shall be performed in accordance with Permit Condition I.A.13.e.

e. Reporting Requirements

1. Results from the first cycle test shall be submitted in a single bioassay report prepared according to EPA-821-R-02-012, Section 12, Report Preparation, or the most current edition, and mailed to the Department within 90 days of completion of the cycle test. Specific conductivity measurements and ionic components shall be reported concurrently with the associated bioassay report.

2. All bioassay reports shall be provided to the Department at the addresses listed in listed Permit Condition I.E.2.

f. Alternative Methodology

Alternative methodologies will be addressed as described in Permit Condition I.A.13.g.

B. Underground Injection Control Systems

This section is not applicable to this facility.

C. Land Application Systems

This section is not applicable to this facility.

D. Other Methods of Disposal or Recycling

1. There shall be no discharge of industrial wastewater from this facility to ground or surface waters, except as authorized by this permit.

E. Other Limitations and Monitoring and Reporting Requirements

1. The sample collection, analytical test methods and method detection limits (MDLs) applicable to this permit shall be in accordance with Rule 62-4.246, Chapters 62-160 and 62-601, F.A.C., and 40 CFR 136, as appropriate. The list of Department established analytical methods, and corresponding MDLs (method detection limits) and PQLs (practical quantification limits), which is titled "Florida Department of Environmental Protection Table as Required By Rule 62-4.246(4) Testing Methods for Discharges to Surface Water" dated June 21, 1996, is available from the Department on request. The MDLs and PQLs as described in this list shall constitute the minimum acceptable MDL/PQL values and the Department shall not accept results for which the laboratory's MDLs or PQLs are greater than those described above unless alternate MDLs and/or PQLs have been specifically approved by the Department for this permit. Any method included in the list may be used for reporting as long as it meets the following requirements:

   a. The laboratory's reported MDL and PQL values for the particular method must be equal or less than the corresponding method values specified in the Department's approved MDL and PQL list;

   b. The laboratory reported PQL for the specific parameter is less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. Parameters that are listed as "report only" in the permit shall use methods that provide a PQL, which is equal to or less than the applicable water quality criteria stated in 62-302 FAC; and

   c. If the PQLs for all methods available in the approved list are above the stated permit limit or applicable water quality criteria for that parameter, then the method with the lowest stated PQL shall be used.

   Where the analytical results are below method detection or practical quantification limits, the permittee shall report the actual laboratory MDL and/or PQL values for the analyses that were performed following the instructions on the applicable discharge monitoring report. Approval of alternate laboratory MDLs or PQLs are not necessary if the laboratory reported MDLs and PQLs are less than or equal to the permit limit or the applicable water quality criteria, if any, stated in Chapter 62-302, F.A.C. However, where necessary, the permittee may request approval for alternative methods or for alternative MDLs and PQLs for any approved analytical method, in accordance with the criteria of Rules 62-160.520 and 62-160.530, F.A.C.

2. Monitoring requirements under this permit are effective on the first day of the second month following permit issuance. Until such time, the permittee shall continue to monitor and report in accordance with previously effective permit requirements, if any. During the period of operation authorized by this permit, the permittee shall complete and submit to the Department's Division Office in Tallahassee, Discharge Monitoring Reports (DMRs) in accordance with the frequencies specified by the REPORT type (i.e., monthly, toxicity, quarterly, semiannual, annual, etc.) indicated on the DMR forms attached to this permit. Monitoring results for each monitoring period shall be submitted in accordance with the associated DMR due dates below.

REPORT Type on DMR	Monitoring Period	DMR Due Date
Monthly or Toxicity	first day of month - last day of month	28th day of following month
Quarterly	January 1 - March 31 April 1 - June 30 July 1 - September 30 October 1 - December 31	April 28 July 28 October 28 January 28
Semiannual	January 1 - June 30 July 1 - December 31	July 28 January 28
Annual	January 1 - December 31	January 28

DMRs shall be submitted for each required monitoring period including months of no discharge.

The permittee shall make copies of the attached DMR form(s) and shall submit the completed DMR form(s) to the Department at the address specified below:

Florida Department of Environmental Protection
Wastewater Compliance Evaluation Section, Mail Station 3551
Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, Florida 32399-2400

3. Unless specified otherwise in this permit, all reports and notifications required by this permit, including twenty-four hour notifications, shall be submitted to or reported to the Southeast District Office at the address specified below:

Florida Department of Environmental Protection
Southeast District Office
400 N. Congress Ave, Suite 200
West Palm Beach, FL 33401-2913

Phone Number - (561) 681-6600
FAX Number - (561) 681-6760 (All FAX copies shall be followed by original copies.)

4. All reports and other information shall be signed in accordance with requirements of Rule 62-620.305, F.A.C. *[62-620.305, 10-23-00]*.

5. The permittee shall provide safe access points for obtaining representative samples which are required by this permit.

6. If there is no discharge from the facility on a day scheduled for sampling, the sample shall be collected on the day of the next discharge.

7. Any bypass of the treatment facility which is not included in the monitoring specified in sections I.A, I.B, I.C, or I.D, is to be monitored for flow and all other required parameters. For parameters other than flow, at least one grab sample per day shall be monitored. Daily flow shall be monitored or estimated, as appropriate, to obtain reportable data. All monitoring results shall be reported on the appropriate DMR.

II. Industrial Sludge Management Requirements

This section not applicable to this facility.

III. Ground Water Monitoring Requirements

This section is not applicable to this facility.

IV. Other Land Application Requirements

This section is not applicable to this facility.

V. Operation and Maintenance Requirements

A. Operation of Treatment and Disposal Facilities

1. The permittee shall ensure that the operation of this facility is as described in the application and supporting documents.

2. The operation of the pollution control facilities described in this permit shall be under the supervision of a person who is qualified by formal training and/or practical experience in the field of water pollution control.

B. Record keeping Requirements:

1. The permittee shall maintain the following records on the site of the permitted facility and make them available for inspection:

a. Records of all compliance monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, including, if applicable, a copy of the laboratory certification showing the certification number of the laboratory, for at least three years from the date the sample or measurement was taken;

b. Copies of all reports, other than those required in items a. and f. of this section, required by the permit for at least three years from the date the report was prepared, unless otherwise specified by Department rule;

c. Records of all data, including reports and documents used to complete the application for the permit for at least three years from the date the application was filed, unless otherwise specified by Department rule;

d. A copy of the current permit;

e. A copy of any required record drawings;

f. Copies of the logs and schedules showing plant operations and equipment maintenance for three years from the date on the logs or schedule.

VI. Schedules

1. The permittee shall achieve compliance with the other conditions of this permit as follows:

   Operational level attained Issuance Date of permit

2. No later than 14 calendar days following a date identified in the above schedule(s) of compliance, the permittee shall submit either a report of progress or, in the case of specific actions being required by an identified date, a written notice of compliance or noncompliance. In the latter case, the notice shall include the cause of noncompliance, any remedial actions taken, and the probability of meeting the next scheduled requirement.

VII. Other Specific Conditions

A. Specific Conditions Applicable to All Permits

1. Drawings, plans, documents or specifications submitted by the permittee, not attached hereto, but retained on file at the Southeast District Office, are made a part hereof.

2. Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.) Florida Statutes, applicable portions of reports to be submitted under this permit, shall be signed and sealed by the professional(s) who prepared them.

3. This permit satisfies Industrial Wastewater program permitting requirements only and does not authorize operation of this facility prior to obtaining any other permits required by local, state or federal agencies.

B. Specific Conditions Related to Construction

1. Within thirty days of completion of construction, the permittee shall submit to the Department a completed "Certification of Completion of Construction" (DEP Form 62-620.910(12)) signed and sealed by the engineer of record or other engineer registered in the state of Florida.

2. Record drawings shall be prepared and made available in accordance with Rule 62-620.410(6), F.A.C., and the Department of Environmental Protection Guide to Wastewater Permitting within six months of placing the facilities into operation.

C. Duty to Reapply

1. The permittee shall submit an application to renew this permit at least 180 days before the expiration date of this permit.

2. The permittee shall apply for renewal of this permit on the appropriate form listed in Rule 62-620.910, F.A.C., and in the manner established in Chapter 62-620, F.A.C., and the Department of Environmental Protection Guide to Wastewater Permitting including submittal of the appropriate processing fee set forth in Rule 62-4.050, F.A.C.

3. An application filed in accordance with subsections 1. and 2. of this part shall be considered timely and sufficient. When an application for renewal of a permit is timely and sufficient, the existing permit shall not

expire until the Department has taken final action on the application for renewal or until the last day for seeking judicial review of the agency order or a later date fixed by order of the reviewing court.

4. The late submittal of a renewal application shall be considered timely and sufficient for the purpose of extending the effectiveness of the expiring permit only if it is submitted and made complete before the expiration date.

D. Specific Conditions Related to Existing Manufacturing, Commercial, Mining, and Silviculture Wastewater Facilities or Activities

This section not applicable to this facility.

E. Reopener Clause

1. The permit shall be revised, or alternatively, revoked and reissued in accordance with the provisions contained in Rules 62-620.325 and 62-620.345 F.A.C., if applicable, or to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2) and 307(a)(2) of the Clean Water Act (the Act), as amended, if the effluent standards, limitations, or water quality standards so issued or approved:

   a. Contains different conditions or is otherwise more stringent than any condition in the permit/or;

   b. Controls any pollutant not addressed in the permit.

   The permit as revised or reissued under this paragraph shall contain any other requirements then applicable.

2. The permit may be reopened to adjust effluent limitations or monitoring requirements should future Water Quality Based Effluent Limitation determinations, water quality studies, DEP approved changes in water quality standards, or other information show a need for a different limitation or monitoring requirement.

3. The Department may develop a Total Maximum Daily Load (TMDL) during the life of the permit. Once a TMDL has been established and adopted by rule, the Department shall revise this permit to incorporate the final findings of the TMDL.

F. Specific Conditions Applicable to ASR Pilot Project NPDES Discharge Facility

1. The subject NPDES discharge facility is at present classified as a Group 7A (Minor) Industrial Wastewater facility. Under Rule 62-4.052(6)(m), F.A.C., the annual regulatory program and surveillance fee ("annual fee") for the permitted facility is set at $5,800.00. The initial annual fee is pro-rated from the permit issuance date to the end of current calendar year, and is due no later than 60 days after permit issuance. The subsequent annual fee shall be due no later than January 15 each year.

2. Unless USEPA and the Department will in the future adopt a permit exemption policy for all ASR well related NPDES discharge activities, the permit renewal procedure in Permit Condition VII.C.1 shall stay in effect. The permit must be renewed if the facility will continue with the cycle testing, or advance to full operational status, beyond the current expiration date. Such an exemption policy if adopted could void the annual fee provision.

3. Under Permit Condition VII.A.3, the permittee must obtain separately approvals from the Department's Underground Injection Control (UIC) program, and all other agencies that have a regulatory interest, before commencement of construction and operation of the Class V injection well and the ASR pilot project.

VIII. General Conditions

1. The terms, conditions, requirements, limitations and restrictions set forth in this permit are binding and enforceable pursuant to Chapter 403, Florida Statutes. Any permit noncompliance constitutes a violation of Chapter 403, Florida Statutes, and is grounds for enforcement action, permit termination, permit revocation and reissuance, or permit revision. *[62-620.610(1), F.A.C]*

2. This permit is valid only for the specific processes and operations applied for and indicated in the approved drawings or exhibits. Any unauthorized deviations from the approved drawings, exhibits, specifications or conditions of this permit constitute grounds for revocation and enforcement action by the Department. *[62-620.610(2), F.A.C.]*

3. As provided in Subsection 403.087(6), F.S., the issuance of this permit does not convey any vested rights or any exclusive privileges. Neither does it authorize any injury to public or private property or any invasion of personal rights, nor authorize any infringements of federal, state, or local laws or regulations. This permit is not a waiver of or approval of any other Department permit or authorization that may be required for other aspects of the total project which are not addressed in this permit. *[62-620.610(3), F.A.C.]*

4. This permit conveys no title to land or water, does not constitute state recognition or acknowledgment of title, and does not constitute authority for the use of submerged lands unless herein provided and the necessary title or leasehold interests have been obtained from the State. Only the Trustees of the Internal Improvement Trust Fund may express State opinion as to title. *[62-620.610(4), F.A.C.]*

5. This permit does not relieve the permittee from liability and penalties for harm or injury to human health or welfare, animal or plant life, or property caused by the construction or operation of this permitted source; nor does it allow the permittee to cause pollution in contravention of Florida Statutes and Department rules, unless specifically authorized by an order from the Department. The permittee shall take all reasonable steps to minimize or prevent any discharge, reuse of reclaimed water, or residuals use or disposal in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit. *[62-620.610(5), F.A.C.]*

6. If the permittee wishes to continue an activity regulated by this permit after its expiration date, the permittee shall apply for and obtain a new permit. *[62-620.610(6), F.A.C.]*

7. The permittee shall at all times properly operate and maintain the facility and systems of treatment and control, and related appurtenances, that are installed and used by the permittee to achieve compliance with the conditions of this permit. This provision includes the operation of backup or auxiliary facilities or similar systems when necessary to maintain or achieve compliance with the conditions of the permit. *[62-620.610(7), F.A.C.]*

8. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit revision, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. *[62-620.610(8), F.A.C.]*

9. The permittee, by accepting this permit, specifically agrees to allow authorized Department personnel, including an authorized representative of the Department and authorized EPA personnel, when applicable, upon presentation of credentials or other documents as may be required by law, and at reasonable times, depending upon the nature of the concern being investigated, to

a. Enter upon the permittee's premises where a regulated facility, system, or activity is located or conducted, or where records shall be kept under the conditions of this permit;

b. Have access to and copy any records that shall be kept under the conditions of this permit;

c. Inspect the facilities, equipment, practices, or operations regulated or required under this permit; and

d. Sample or monitor any substances or parameters at any location necessary to assure compliance with this permit or Department rules.

[62-620.610(9), F.A.C.]

10. In accepting this permit, the permittee understands and agrees that all records, notes, monitoring data, and other information relating to the construction or operation of this permitted source which are submitted to the Department may be used by the Department as evidence in any enforcement case involving the permitted source arising under the Florida Statutes or Department rules, except as such use is proscribed by Section 403.111, Florida Statutes, or Rule 62-620.302, F.A.C. Such evidence shall only be used to the extent that it is consistent with the Florida Rules of Civil Procedure and applicable evidentiary rules. [*62-620.610(10), F.A.C.]*

11. When requested by the Department, the permittee shall within a reasonable time provide any information required by law which is needed to determine whether there is cause for revising, revoking and reissuing, or terminating this permit, or to determine compliance with the permit. The permittee shall also provide to the Department upon request copies of records required by this permit to be kept. If the permittee becomes aware of relevant facts that were not submitted or were incorrect in the permit application or in any report to the Department, such facts or information shall be promptly submitted or corrections promptly reported to the Department. *[62-620.610(11), F.A.C.]*

12. Unless specifically stated otherwise in Department rules, the permittee, in accepting this permit, agrees to comply with changes in Department rules and Florida Statutes after a reasonable time for compliance; provided however, the permittee does not waive any other rights granted by Florida Statutes or Department rules. A reasonable time for compliance with a new or amended surface water quality standard, other than those standards addressed in Rule 62-302.500, F.A.C., shall include a reasonable time to obtain or be denied a mixing zone for the new or amended standard. *[62-620.610(12), F.A.C.]*

13. The permittee, in accepting this permit, agrees to pay the applicable regulatory program and surveillance fee in accordance with Rule 62-4.052, F.A.C. *[62-620.610(13), F.A.C.]*

14. This permit is transferable only upon Department approval in accordance with Rule 62-620.340, F.A.C. The permittee shall be liable for any noncompliance of the permitted activity until the transfer is approved by the Department. *[62-620.610(14), F.A.C.]*

15. The permittee shall give the Department written notice at least 60 days before inactivation or abandonment of a wastewater facility and shall specify what steps will be taken to safeguard public health and safety during and following inactivation or abandonment. *[62-620.610(15), F.A.C.]*

16. The permittee shall apply for a revision to the Department permit in accordance with Rules 62-620.300 and the Department of Environmental Protection Guide to Wastewater Permitting at least 90 days before construction of any planned substantial modifications to the permitted facility is to commence or with Rule 62-620.325(2) for minor modifications to the permitted facility. A revised permit shall be obtained before construction begins except as provided in Rule 62-620.300, F.A.C. *[62-620.610(16), F.A.C.]*

17. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. The permittee shall be responsible for any and all damages which may result from the changes and may be subject to enforcement action by the Department for penalties or revocation of this permit. The notice shall include the following information:

    a. A description of the anticipated noncompliance;

    b. The period of the anticipated noncompliance, including dates and times; and

    c. Steps being taken to prevent future occurrence of the noncompliance.

    [62-620.610(17), F.A.C.]

18. Sampling and monitoring data shall be collected and analyzed in accordance with Rule 62-4.246, Chapter 62-160 and 62-601, F.A.C. and 40CFR 136, as appropriate.

    a. Monitoring results shall be reported at the intervals specified elsewhere in this permit and shall be reported on a Discharge Monitoring Report (DMR), DEP Form 62-620.910(10).

    b. If the permittee monitors any contaminant more frequently than required by the permit, using Department approved test procedures, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the DMR.

    c. Calculations for all limitations, which require averaging of measurements shall use an arithmetic mean unless otherwise specified in this permit.

    d. Any laboratory test required by this permit shall be performed by a laboratory that has been certified by the Department of Health (DOH) under Chapter 64E-1, F.A.C., where such certification is required by Rule 62-160.300, F.A.C. The laboratory must be certified for any specific method and analyte combination that is used to comply with this permit. For domestic wastewater facilities, the on-site test procedures specified in Rule 62-160.300(4), F.A.C., shall be performed by a laboratory certified test for those parameters or under the direction of an operator certified under Chapter 62-602, F.A.C.

    e. Field activities including on-site tests and sample collection, whether performed by a laboratory or a certified operator, must follow the applicable procedures described in DEP-SOP-001/01 (January 2002). Alternate field procedures and laboratory methods may be used where they have been approved according to the requirements of Rules 62-160.220, 62-160.330, and 62-160.600, F.A.C.

19. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule detailed elsewhere in this permit shall be submitted no later than 14 days following each schedule date. *[62-620.610(19), F.A.C.]*

20. The permittee shall report to the Department's Southeast District Office any noncompliance which may endanger health or the environment. Any information shall be provided orally within 24 hours from the time the permittee becomes aware of the circumstances. A written submission shall also be provided within five days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance including exact dates and time, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.

a. The following shall be included as information which must be reported within 24 hours under this condition:

1. Any unanticipated bypass which causes any reclaimed water or effluent to exceed any permit limitation or results in an unpermitted discharge,

2. Any upset which causes any reclaimed water or the effluent to exceed any limitation in the permit,

3. Violation of a maximum daily discharge limitation for any of the pollutants specifically listed in the permit for such notice, and

4. Any unauthorized discharge to surface or ground waters.

b. Oral reports as required by this subsection shall be provided as follows:

1. For unauthorized releases or spills of untreated or treated wastewater reported pursuant to subparagraph a.4 that are in excess of 1,000 gallons per incident, or where information indicates that public health or the environment will be endangered, oral reports shall be provided to the Department by calling the STATE WARNING POINT TOLL FREE NUMBER (800) 320-0519, as soon as practical, but no later than 24 hours from the time the permittee becomes aware of the discharge. The permittee, to the extent known, shall provide the following information to the State Warning Point:

(a) Name, address, and telephone number of person reporting;

(b) Name, address, and telephone number of permittee or responsible person for the discharge;

(c) Date and time of the discharge and status of discharge (ongoing or ceased);

(d) Characteristics of the wastewater spilled or released (untreated or treated, industrial or domestic wastewater);

(e) Estimated amount of the discharge;

(f) Location or address of the discharge;

(g) Source and cause of the discharge;

(h) Whether the discharge was contained on-site, and cleanup actions taken to date;

(i) Description of area affected by the discharge, including name of water body affected, if any; and

(j) Other persons or agencies contacted.

2. Oral reports, not otherwise required to be provided pursuant to subparagraph b.1 above, shall be provided to Department's Southeast District Office within 24 hours from the time the permittee becomes aware of the circumstances.

c. If the oral report has been received within 24 hours, the noncompliance has been corrected, and the noncompliance did not endanger health or the environment, the Department's Southeast District Office shall waive the written report.

[62-620.610(20), F.A.C.]

21. The permittee shall report all instances of noncompliance not reported under Conditions VIII.18 and 19 of this permit at the time monitoring reports are submitted. This report shall contain the same information required by Condition VIII.20 of this permit. *[62-620.610(21), F.A.C.]*

22. Bypass Provisions:

    a. Bypass is prohibited, and the Department may take enforcement action against a permittee for bypass, unless the permittee affirmatively demonstrates that:

        1. Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; and

        2. There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventative maintenance; and

        3. The permittee submitted notices as required under Condition VIII.22.b of this permit.

    b. If the permittee knows in advance of the need for a bypass, it shall submit prior notice to the Department, if possible at least 10 days before the date of the bypass. The permittee shall submit notice of an unanticipated bypass within 24 hours of learning about the bypass as required in Condition VIII.20 of this permit. A notice shall include a description of the bypass and its cause; the period of the bypass, including exact dates and times; if the bypass has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent recurrence of the bypass.

    c. The Department shall approve an anticipated bypass, after considering its adverse effect, if the permittee demonstrates that it will meet the three conditions listed in Condition VIII.22 a.(1) through (3) of this permit.

    d. A permittee may allow any bypass to occur which does not cause reclaimed water or effluent limitations to be exceeded if it is for essential maintenance to assure efficient operation. These bypasses are not subject to the provision of Condition VIII.22.a through c. of this permit.

    [62-620.610(22), F.A.C.]

23. Upset Provisions:

    a. A permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

        1. An upset occurred and that the permittee can identify the cause(s) of the upset;

        2. The permitted facility was at the time being properly operated;

        3. The permittee submitted notice of the upset as required in Condition VIII.20 of this permit; and

        4. The permittee complied with any remedial measures required under Condition VIII.5 of this permit.

b. In any enforcement proceeding, the permittee seeking to establish the occurrence of an upset has the burden of proof.

c. Before an enforcement proceeding is instituted, no representation made during the Department review of a claim that noncompliance was caused by an upset is final agency action subject to judicial review.

[62-620.610(23), F.A.C.]

Executed in West Palm Beach, Florida.

STATE OF FLORIDA DEPARTMENT OF
ENVIRONMENTAL PROTECTION

Kevin R. Neal
Director of District Management
Southeast District

Date: February 10, 2006

AMENDMENT TO THE STATEMENT OF BASIS
AT THE TIME OF FINAL PERMIT ISSUANCE

FACILITY I.D. NUMBER:	FL0339644
ISSUANCE DATE:	(Refer to the stamped issuance date on the Notice of Permit)
APPLICATION DATE	November 3, 2003
NAME OF PERMITTEE:	South Florida Water Management District
FACILITY NAME:	SFWMD - Caloosahatchee River ASR Pilot Project Cycle Testing Recovered Water Discharge Facility
FACILITY LOCATION:	Berry Groves (7 miles southwest of LaBelle; 1.7 miles south of SR 80) LaBelle, Hendry County
PERMIT NUMBER / (classification):	FL0339644 (Group 7A Minor)
PERMIT WRITER / (contact info.):	Paul C. Sze / (phone #: 561-681-6747; email: paul.sze@dep.state.fl.us)

1. **Applicant's Comments on the Draft Permit:**

   Non received as of February 3, 2006, since issuance of draft permit on December 27, 2005.

2. **Public Comments:**

   Non received as of February 3, 2006, since issuance of draft permit on December 27, 2005.

3. **Changes in Permit from Draft Permit to Final Permit Stage:**

   There are several minor changes all related to typo corrections in the final permit from the draft version as described below:

   (1) On page 3 of the permit body, in the paragraph under the heading "**IN ACCORDANCE WITH:**" the second page count number should have read "19" instead of "15" shown before.

   (2) On page 1 of the DMR, on the first row, the daily maximum permitted capacity for Flow should have read "5.0" (MGD) instead of "Report" (MGD) shown before.

   (3) On page 2 of the DMR, on the 7th to 10th rows, the measurement and reporting unit for Specific Conductance should all have read "µmhos/cm" (for micro-siemens/cm) instead of "CM" shown before.

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed mail this report to: Department of Environmental Protection, Wastewater Compliance Evaluation Section, MS 3550 , 2600 Blair Stone Road, Tallahassee, FL 32399-2400

PERMITTEE NAME: South Florida Water Management District
MAILING ADDRESS: 3301 Gun Club Road
West Palm Beach, FL 33406

FACILITY: SFWMD - Caloosahatchee River ASR Recovered Water Discharge
LOCATION: Berry Groves (1.7 miles south of SR 80)
LaBelle, FL 33406

COUNTY: Hendry

PERMIT NUMBER FL0339644

LIMIT: Final
CLASS SIZE: Minor

REPORT: Monthly
GROUP: Industrial

MONITORING GROUP NUMBER: D-001
MONITORING GROUP DESC Header Canal Outfall

NO DISCHARGE FROM SITE: ☐
MONITORING PERIOD From: To:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
Flow	Sample Measurement										
PARM Code 50050 1 Mon. Site No. EFF-01	Permit Requirement	Report (Mo.Avg.)	5.0 (Day.Max.)	MGD						Daily, When Discharging	Meter
pH	Sample Measurement										
PARM Code 00400 1 Mon. Site No. EFF-01	Permit Requirement					6.0 (Day.Min.)	8.5 (Day.Max.)	SU		Monthly, When Discharging	Instantaneous
Oxygen, Dissolved (DO)	Sample Measurement										
PARM Code 00300 1 Mon. Site No. EFF-01	Permit Requirement				3.0 (single samp min)	4.0 (24-hr. Min.)		MG/L		Monthly, When Discharging	Instantaneous
Coliform, Total	Sample Measurement										
PARM Code 74056 1 Mon. Site No. EFF-01	Permit Requirement						Report (Day.Max.)	#/100ML		Monthly, When Discharging	Grab
Arsenic, Total Recoverable	Sample Measurement										
PARM Code 00978 1 Mon. Site No. EFF-01	Permit Requirement						50.0 (Day.Max.)	UG/L		Monthly, When Discharging	Grab
Chromium, Hexavalent Tot Recoverable	Sample Measurement										
PARM Code 78247 1 Mon. Site No. EFF-01	Permit Requirement						11.0 (Day.Max.)	UG/L		Monthly, When Discharging	Grab

Footnote: 1. Report "NODI=9" for those parameters that are not required to be reported in this period.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (YY/MM/DD)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

DISCHARGE MONITORING REPORT - PART A (Continued)

FACILITY NAME: SFWMD - Caloosahatchee River ASR Recovered Water Discharge PERMIT NUMBER: FL0339644 MONITORING GROUP NUMBER: D-001

MONITORING PERIOD From: To:

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
Iron, Total Recoverable	Sample Measurement										
PARM Code 00980 1	Permit Requirement						1,000.0 (Day.Max.)	UG/L		Monthly, When Discharging	Grab
Mon. Site No. EFF-01											
Mercury, Total Recoverable	Sample Measurement										
PARM Code 71901 1	Permit Requirement						0.2 (Day.Max.)	UG/L		Monthly, When Discharging	Grab
Mon. Site No. EFF-01											
Selenium, Total Recoverable	Sample Measurement										
PARM Code 00981 1	Permit Requirement						Report (Day.Max.)	UG/L		Monthly, When Discharging	Grab
Mon. Site No. EFF-01											
Silver, Total Recoverable	Sample Measurement										
PARM Code 01079 1	Permit Requirement						Report (Day.Max.)	UG/L		Monthly, When Discharging	Grab
Mon. Site No. EFF-01											
Alpha, Gross Particle Activity	Sample Measurement										
PARM Code 80045 1	Permit Requirement						15.0 (Day.Max.)	PCI/L		Monthly, When Discharging	Grab
Mon. Site No. EFF-01											
Chloride (as Cl)	Sample Measurement										
PARM Code 00940 1	Permit Requirement						Report (Day.Max.)	MG/L		Monthly, When Discharging	Grab
Mon. Site No. EFF-01											
Specific Conductance (effluent)	Sample Measurement										
PARM Code 00095 1	Permit Requirement						Report (Day.Max.)	UMHOS/ CM		Monthly, When Discharging	Instantaneous
Mon. Site No. EFF-01											
Specific Conductance (Background)	Sample Measurement										
PARM Code 00095 S	Permit Requirement						Report (Day.Max.)	UMHOS/ CM		Monthly, When Discharging	Grab
Mon. Site No. SWB-01											
Specific Conductance (calculated limit)	Sample Measurement										
PARM Code 00095 P	Permit Requirement						Report (Day.Max.)	UMHOS/ CM		Monthly, When Discharging	Calculated
Mon. Site No. EFF-01											
Specific Conductance (effluent minus calculated limit)	Sample Measurement										
PARM Code 00095 Q	Permit Requirement						0.00 (Day.Max.)	UMHOS/ CM		Monthly, When Discharging	Calculated
Mon. Site No. EFF-01											

Footnote: 1. Report "NODI=9" for those parameters that are not required to be reported in this period.

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

DEPARTMENT OF ENVIRONMENTAL PROTECTION DISCHARGE MONITORING REPORT - PART A

When Completed mail this report to: Department of Environmental Protection, Wastewater Compliance Evaluation Section, MS 3551 , 2600 Blair Stone Road, Tallahassee, FL 32399-2400

PERMITTEE NAME: South Florida Water Management District
MAILING ADDRESS: 3301 Gun Club Road
West Palm Beach, FL 33406

FACILITY: SFWMD - Caloosahatchee River ASR Recovered Water Dischg.
LOCATION: Berry Groves (1.7 miles south of SR 80)
LaBelle, FL 33406

COUNTY: Hendry

PERMIT NUMBER: FL0339644-001-IW7A

LIMIT: Final
CLASS SIZE: Minor

REPORT: Toxicity
GROUP: Industrial

MONITORING GROUP NUMBER: D-001
MONITORING GROUP DESC: Header Canal Outfall

NO DISCHARGE FROM SITE: ☐

MONITORING PERIOD From: _____ To _____

Parameter		Quantity or Loading		Units	Quality or Concentration			Units	No. Ex.	Frequency of Analysis	Sample Type
LC50 STATRE 96HOUR ACUTE Ceriodaphnia dubia(Routine)	Sample Measurement										
PARM Code TAN3B P Mon. Site No. EFF-01	Permit Requirement				100 (Min.)			PER-CENT		bimonthly	1 grab/ 24 hour
LC50 STATRE 96HOUR ACUTE Ceriodaphnia dubia(Additional)	Sample Measurement										
PARM Code TAN3B Q Mon. Site No. EFF-01	Permit Requirement				100 (Min.)			PER-CENT		As needed	As required by the permit
LC50 STATRE 96HOUR ACUTE Cyprinella leedsi(Routine)	Sample Measurement										
PARM Code TAN6H P Mon. Site No. EFF-01	Permit Requirement				100 (Min.)			PER-CENT		bimonthly	1 grab/ 24 hour
LC50 STATRE 96HOUR ACUTE Cyprinella leedsi(Additional)	Sample Measurement										
PARM Code TAN6H Q Mon. Site No. EFF-01	Permit Requirement				100 (Min.)			PER-CENT		As needed	As required by the permit
	Sample Measurement										
	Permit Requirement										
	Sample Measurement										
	Permit Requirement										

*IF A SECOND DEFINITIVE TEST IS REQUIRED, ENTER THE RESULT IN AN EMPTY ROW.
**ENTER NODI=C IN THE RESULTS COLUMN IF NO DISCHARGE OCCURRED DURING THIS REPORTING PERIOD.
ENTER NODI=9 IN THE RESULTS COLUMN IF NO DEFINITIVE TESTS ARE REQUIRED.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

NAME/TITLE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	SIGNATURE OF PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT	TELEPHONE NO	DATE (YY/MM/DD)

COMMENT AND EXPLANATION OF ANY VIOLATIONS (Reference all attachments here):

INSTRUCTIONS FOR COMPLETING THE WASTEWATER DISCHARGE MONITORING REPORT

The DMR consists of four parts--A, B, C, and D--all of which may or may not be applicable to every facility. Facilities may have one or more Part A's for reporting effluent data. All domestic wastewater facilities will have a Part B for reporting daily sample results. Part C is only applicable for domestic wastewater facilities with limited wet weather discharges permitted under Chapter 62-610.860, F.A.C. Part D is used for reporting ground water monitoring well data.

Hard copies and/or electronic copies of the required parts of the DMR were provided with the permit. All required information shall be typed or printed in ink.

In addition to filling in numerical results on various parts of the DMR, the following codes should be used and an explanation provided where appropriate. Note: Codes used by the lab for raw data may be different.

CODE	DESCRIPTION/INSTRUCTIONS
ANC	Analysis not conducted.
DRY	Dry Well
FLD	Flood disaster.
IFS	Insufficient flow for sampling.
LS	Lost sample.
MNR	Monitoring not required this period.

CODE	DESCRIPTION/INSTRUCTIONS
NOD	No discharge from/to site.
OPS	Operations were shutdown so no sample could be taken.
OTH	Other. Please enter an explanation of why monitoring data were not available.
SEF	Sampling equipment failure.

When reporting analytical results that fall below a laboratory's reported method detection limits or practical quantification limits, the following instructions should be used:

1. Results greater than or equal to the PQL shall be reported as the measured quantity.
2. Results less than the PQL and greater than or equal to the MDL shall be reported as the laboratory's MDL value. These values shall be deemed equal to the MDL when necessary to calculate an average for that parameter and when determining compliance with permit limits.
3. Results less than the MDL shall be reported by entering a less than sign ("<") followed by the laboratory's MDL value, e.g. < 0.001 A value of one half the MDL or half the effluent limit, whichever is lower, shall be used for that sample when necessary to calculate an average for that parameter. Values less than the MDL are considered to demonstrate compliance with an effluent limitation.

PART A -DISCHARGE MONITORING REPORT (DMR)

Part A of the DMR is comprised of one or more sections, each having its own header information. Facility information is preprinted in the header as well as the monitoring group number, whether the limits and monitoring requirements are interim or final, and the required submittal frequency (e.g. monthly, annually, quarterly, etc.) Submit Part A based on the required reporting frequency in the header and the instructions shown in the permit. The following blanks in the header should be completed by the permittee or authorized representative:

No Discharge From Site: Check this box if no discharge occurs and, as a result, there are no data or codes to be entered for all of the parameters on the DMR for the entire monitoring group number. If there was no discharge of effluent for a particular outfall, reuse, or land application system and the DMR monitoring group includes other monitoring locations (e.g., influent sampling); the "NOD" code should be used to individually denote those parameters for which there was no discharge.
Monitoring Period: Enter the month, day, and year for the first and last day of the monitoring period (i.e. the month, the quarter, the year, etc.) during which the data on this report were collected and analyzed.
Sample Measurement: Before filling in sample measurements in the table, check to see that the data collected correspond to the limit indicated on the DMR (i.e. interim or final) and that the data correspond to the monitoring group number in the header. Enter the data or calculated results for each parameter on this row. Be sure the result being entered corresponds to the appropriate statistical base code (e.g. annual average, monthly average, single sample maximum, etc.).
No. Ex.: Enter the number of sample measurements during the monitoring period that exceeded the permit limit for each parameter. If none, enter zero.
Frequency of Analysis: The shaded areas in this column contain the minimum number of times the measurement is required to be made according to the permit. Enter the actual number of times the measurement was made in the space above the shaded area.
Sample Type: The shaded areas in this column contain the type of sample (e.g. grab, composite, continuous) required by the permit. Enter the actual sample type that was taken in the space above the shaded area.
Signature: This report must be signed in accordance with Rule 62-620.305, F.A.C. Type or print the name and title of the signing official. Include the telephone number where the official may be reached in the event there are questions concerning this report. Enter the date when the report is signed.
Comment and Explanation of Any Violations: Use this area to explain any exceedances, any upset or by-pass events, or other items which require explanation. If more space is needed, reference all attachments in this area.

PART B - DAILY SAMPLE RESULTS

Month/Year: Enter the month and year during which the data on this report were collected and analyzed.
Three-month Average Daily Flow: Calculate and enter the three-month average daily flow to the treatment facility.
(TMADF/Permitted Capacity) x 100: Divide the three-month average daily flow by the permitted capacity of the treatment facility, multiply by 100, and enter this value.
Daily Monitoring Results: Record the results of daily monitoring for the parameters required to be sampled by your permit. Record the data in the units indicated.
Plant Staffing: List the name, certificate number, and class of all state certified operators operating the facility during the monitoring period. Use additional sheets as necessary.
Type of Effluent Disposal or Reclaimed Water Reuse: Enter the type of effluent disposal or reclaimed water reuse (e.g. surface water discharge, ocean outfall, slow rate land application-public access, slow rate land application-restricted public access, rapid rate land application, absorption field, underground injection).
Limited Wet Weather Discharge Activated: If this plant does not have a limited wet weather discharge permitted under the provision of Rule 62-610.860, F.A.C., check 'Not Applicable.' If the plant activated the wet weather discharge during the reporting month, check 'Yes' and attach PART C - LIMITED WET WEATHER DISCHARGE

PART C - LIMITED WET WEATHER DISCHARGE

This part is to be completed and submitted each month reclaimed water or effluent is discharged by a limited wet weather discharge permitted under Rule 62-610.860, F.A.C. For months with no discharge, Part C need not be submitted. All information is to be provided for each day on which the limited wet weather discharge was activated.

Month/Year: Enter the month and year during which the data on this report were collected and analyzed.
Rainfall Information: Enter the name and location of the rainfall gauging station, the source of climatological (normal rainfall) data, the cumulative rainfall for the average rainfall year, and the cumulative rainfall to date for this calendar year. The cumulative rainfall for the average rainfall year is the amount of rain, in inches, which falls during an average rainfall year from January through the month for which this part contains data. The cumulative rainfall to date for this calendar year is the total amount of rain, in inches, that has been recorded since January 1 of the current year through the month for which this DMR contains data.
Date: Enter the date on which the discharge occurred.
Duration of Discharge: Enter the number of hours, to the nearest 0.1 of an hour (0.1 hr. = 6 min.) during each day of discharge that reclaimed water was actually discharged to surface waters.
Gallons Discharged: Enter the quantity in millions of gallons of reclaimed water discharged during the period shown in duration of discharge. Show the units as millions of gallons (mg), accurate to the nearest 0.01.
Average Discharge Flow Rate: Divide gallons discharged by duration of discharge (converted into days). Record in million gallons per day (MGD).
Average Upstream Flow Rate: Enter the average flow rate in the receiving stream upstream from the point of discharge for the period shown in duration of discharge. The average flow rate can be calculated based on two measurements; one made at the start and one made at the end of the discharge period. Measurements are to be made at the upstream gauging station described in the permit.
Stream Dilution Factor: Enter the actual stream dilution ratio accurate to the nearest 0.1. To calculate the factor, divide the average upstream flow rate by the average discharge flow rate.
$CBOD_5$: Enter the average $CBOD_5$ of the reclaimed water discharged during the period shown in duration of discharge.
TKN: Enter the average TKN of the reclaimed water discharged during the period shown in duration of discharge.
Total P: Enter the cumulative number of days since January 1 of the current year during which the limited wet weather discharge was activated divided by the total number of days since January 1 of the current year multiplied by 100%.
Reason for Discharge: Provide a brief explanation of the factors contributing to the need to activate the limited wet weather discharge.

PART D - GROUND WATER MONITORING REPORT

Monitoring Period: Enter the month, day, and year for the first and last day of the monitoring period (i.e. the month, the quarter, the year, etc.) during which the data on this report were collected and analyzed.
Date Sample Obtained: Enter the date the sample was taken. Also, check whether or not the well was purged before sampling.
Sampling Methods: Indicate the procedure used to collect the sample (e.g. airlift, bucket/bailer, centrifugal pump, etc.)
Samples Filtered: Indicate whether the sample obtained was filtered by laboratory (L), filtered in field (F), or unfiltered (N).
Preservatives Added: State what preservatives were added to the sample.
Analysis Method: Indicate the analytical method used. Record the method number from Chapter 62-160 or Chapter 62-601, F.A.C., or from other sources.
Analysis Result/Units: Record the results of the analysis. If the result was below the minimum detection limit, indicate that. Enter the units associated with the results of the analysis.
Detection Limits/Units: Record the detection limits of the analytical methods used and the units associated with them.
Comments and Explanations: Use this space to make any comments on or explanations of results which are unexpected. If more space is needed, reference all attachments in this area.

FLORIDA DEPARTMENT OF HEALTH

State of Florida
Hendry County Health Department
WELL PERMIT # W08-037

Permit For New Well Construction	ENVIRONMENTAL HEALTH LaBelle Office 1140 Pratt Blvd. LaBelle, FL 33935 (Mail) P.O. Box 70, LaBelle, FL 33975 (863)674-4047 Ext 152	Fee Paid $50.00 Date 3/13/2008 Receipt# 74896 By: WJ

Issued to Applicant Below:

OWNER or FIDUCIARY:	WELL CONTRATOR:
the S.F.W.M.D. 3301 Gun Club Road West Palm Beach, FL 33406 Phone: (561) 682-6139	Paul Petrey Lic. #9340 Applied Drilling Engineering P.O. Box 271801 Tampa, FL 33688 Office Ph: (813) 269-8200 Cell/Mobile (813) 695-4358

WELL SITE:

Address: 225 20th PL Subdivision: Note: at W edge of Berry Cogen Grove

Property ID: NW NE 6 44S 28E 7-A00-0223-0000

---- THE SITE PLAN SUBMITTED has been accepted and constitutes as drawn a legal representation of fact---

Site is zoned for: ' Commercial'

---- Well Use ----

Well is constructed for : 'Irrigation', see attached copy of approved OSTDS site plan.

---- CONDITIONS: of Well Permit ----

The Dept requires 24 hr. notice before start of well grouting and 30 minutes notice of any schedule change

Maintain a minimum of 10 feet from sewer line -- minimum of 25 feet from building foundation -- minimum of 50 feet from septic system.

Permit is voided if well is moved from depicted site plan location, without a signed permit amendment.

SITE PLAN: ACCEPTED BY: B Jennings DATE: 3/13/08

PERMIT: ISSUED BY: B Jennings DATE: 3/13/08

GROUTING: SCHEDULED TIME: DATE: APPROVED BY: DATE:

BACTERIOLOGICAL TESTS SATISFACTORY ON DATE

CONSTRUCTION APPROVED BY: DATE:

PERMIT: EXPIRES ON 3/13/2009 at close of business

ISSUANCE OF THIS PERMIT DOES NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY TO ABIDE BY ALL ESTABLISHED STANDARDS OF PERFORMANCE FROM ANY OTHER FEDERAL, STATE, AND LOCAL GOVERNMENT AGENCIES

(Rev. 06/11/2003)

FLORIDA DEPARTMENT OF HEALTH

State of Florida
Hendry County Health Department
Permit Application to Construct, Repair, Modify or Abandon a Well

Well Contractor's Scheduled
GROUTING TIME: 10:00 am
GROUTING DATE: 3/14/2008

ENVIRONMENTAL HEALTH

LABELLE OFFICE
1140 Pratt Blvd
LaBelle, FL 33975
(863) 674-4047 x 152

CLEWISTON OFFICE
1100 S. Olympia St.
Clewiston, FL 33440
(863) 902-4224 x 504

Hendry County Permit Number:
W0 8 - 037
Fee: $ 50 Date: 03/13/08
Receipt # By: /

PERMIT for: New Well Construction ☐, Well Abandonment ☒, Well Replacement ☐, Repair of Well, ☐

OWNER, BUSINESS, or CORPORATION
Name: SFWMD
Address: 3301 Gun Club Road
City: West Palm Beach State: FL Zip: 33406
Phone: (561) 682-6139
Authorized Agent or Broker: Bob Verrastro

WELL CONTRACTOR
Name: Paul Petrey Lic. # 9340
Company: Applied Drilling Engineering
Address: P.O. Box 271801 Tampa Zip: 33688
Phone: (813) 269-8200
Cell Phone: (813) 695-4358

PROPERTY LOCATION:
House # NA Road: Hwy 80 East of La Belle Subdivision: Berry Groves
Directions to property: Traveling east on Hwy 80 from Labelle, go pass the Berry Grove office and gate house then in the curve turn into the west gate.

LAND USE is for:
Single Family ☐, Duplex ☐, Multi-family ☐, Units ____, Commercial ☐, Farm ☐, Other Furture Reservoir
SOUTH FLORIDA WATER MANAGEMENT DISTRICT: Water Use Application, ( ); or Permit, ( ) # Test Well CCBRY-1

WELL USE is for:
[1] Domestic ☐, Irrigation ☐, Fire ☐, [2] Test ☒, Piezometer ☐, [3] Public ☐, [3] LUC Public ☐, Industrial ☐, Other ____

(1) For Domestic Wells, attach copies of approved OSTDS site plan or do a drawing on reverse side of this form.
(2) For Test Wells, attach a engineered "Well Design" form and site plan of well locations.
(3) For LUCPWS Wells, attach approved Form DH 4092 and a copy of the site plan.)

WELL LOCATION will provide:
Minimum of 6'ft. from sewer lines ☐, Minimum of 25'ft. from bldg. foundations ☐, Minimum of 75'ft. from septic systems ☐, Minimum of 100'ft. from underground storage tanks ☐, Non-potable well requires Minimum of 50'ft. from septic systems ☑, Public well <2K GPD, requires 100'ft from septic system and Public well > 2K GPD, requires 200'ft. from septic systems ☐.

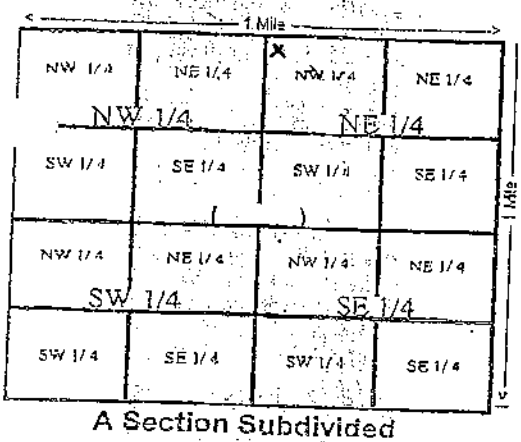
WELL MATERIALS – proposed specifications:
SURFACE CASING: 8 " Dia. x ft. Material: PVC ; Schedule: 40 ; INSIDE CASING: NA " Dia. x ft.
Material: ; Schedule: ; SCREEN Material: ; Slot Size: . Screen From: ft. Screen To: ft.
OPEN HOLE From: NA ft. To ft. GRAVEL PACKED to ft. above screen. Anticipated TOTAL WELL DEPTH: 199' ft.
WELL ABANDONMENT: ☒, TYPE of GROUT: Neat, Number of GROUT bags: 56 with 0 % additives

I HEREBY CERTIFY THAT THE CONSTRUCTION, ABANDONMENT OR REPAIR OF THE WELL WILL COMPLY WITH THE RULES OF HENDRY COUNTY & THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT, WILL NOT ADVERSELY AFFECT THE LOCAL WATER RESOURCES, AND THAT A WATER USE PERMIT, IF NEEDED, HAS OR WILL BE OBTAINED FOR THIS PROJECT PRIOR TO START OF WELL CONSTRUCTION. I AGREE TO PROVIDE 24-HOUR ADVANCE NOTICE BEFORE STARTING WELL GROUTING PROCEDURE. I AGREE TO PROVIDE 30 MINUTES ADVANCE NOTICE OF CHANGES IN THE DRILLING SCHEDULE. I AGREE TO SUBMIT A WELL DRILLING COMPLETION REPORT TO THE HENDRY COUNTY HEALTH DEPARTMENT WITHIN 30 DAYS FROM WELL COMPLETION OR PERMIT EXPIRATION. ISSUANCE OF A PERMIT PURSUANT TO THIS APPLICATION DOES NOT RELIEVE THE APPLICANT OF THE RESPONSIBILITY TO ACQUIRE ANY NECESSARY APPROVALS FROM ANY OTHER FEDERAL, STATE, AND OR LOCAL GOVERNMENT AGENCIES

> PROPERTY OWNER — DATE 3/13/2008
WELL CONTRACTOR — DATE 3/13/2008

Rev. 10/20/07)

PERMIT EXPIRES SIX (6) MONTHS FROM APPROVED DATE



A Section Subdivided

Well Address / Lot #: SFWMD property Berry Groves

NW 1/4 NE 1/4, Sec # 06 Twp 44 S, Rng # 28 E, 600 - 0223 - 0000

GPS location in Decimal Degrees:

Latitude: 26deg.41'13.22 Longitude: 81 deg. 33'13.69"

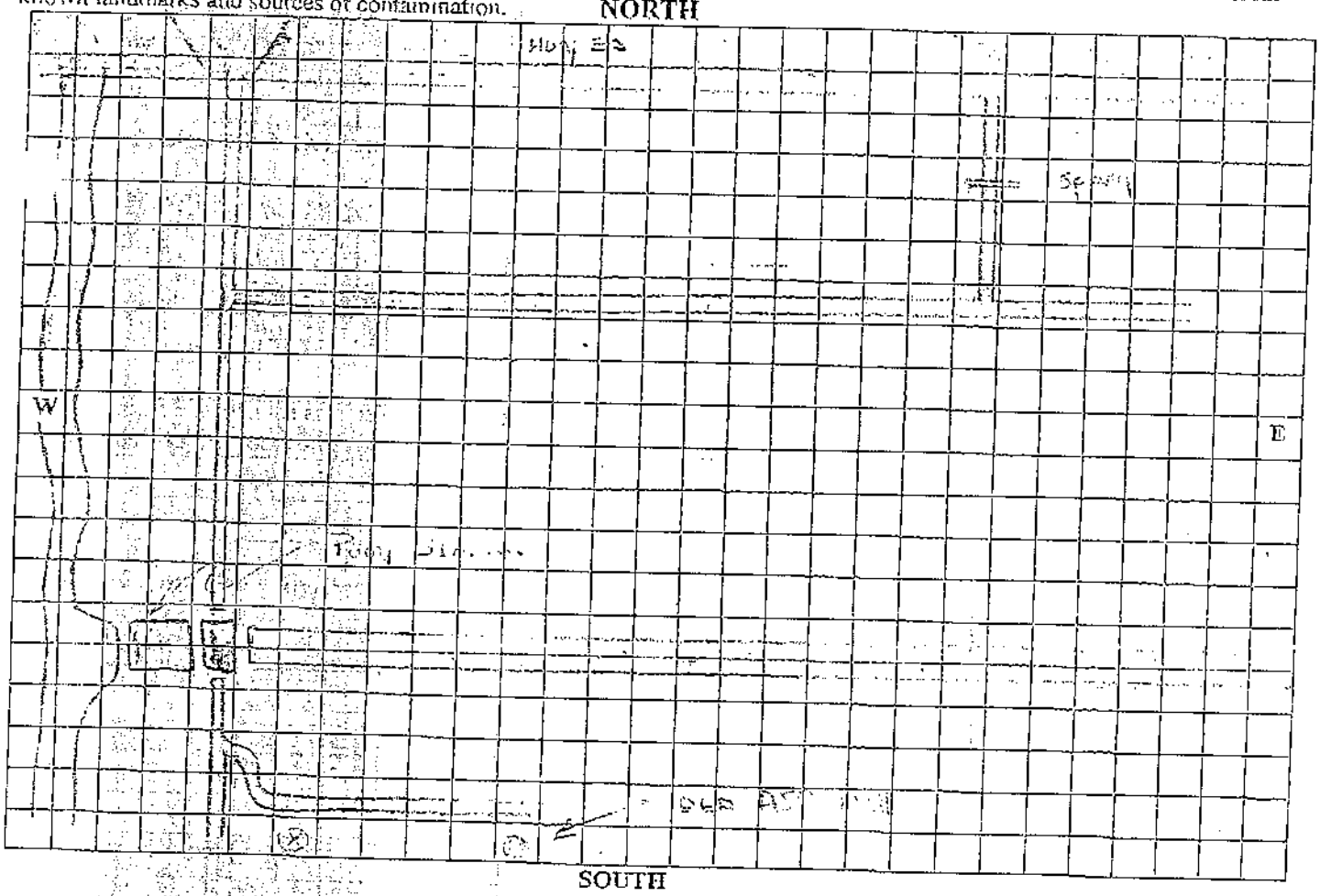
Example; 26._____ -81._____

Septic Permit #: NA

DIRECTIONS: to well location on property (stake & flag): From the West Gate, travle straight through the spray system then turn right. Sstay on this grove dirt raod until it ends. Then turn left. Travel on this dirt road just pass the pump station. Just after the pump station, turn left through an S-surve. The well location is just on your right.

Include distance from well to road

Draw an accurate map in the area below. Show property boundaries, well location, nearby roads and the distance in feet from known landmarks and sources of contamination.



Use the following symbols when drawing your site plan: X: New Well Location, O: Old Well Location(s), [redacted]: Septic Tank Location, Corners of Drain Field(s) All existing well and septic systems within 100 feet must be shown with the distances to new well.

APPENDIX D

Applied
DRILLING
Engineering, Inc.

Date: October 11, 2007
ADE Project Number: 7027

Project Schedule

South Florida Water Management

Project: Abondment of EXBRY-1

	February	16	17	18	19	20	21	22	23	24	25	26	27	28	29	1	2	3	4	5	6	7	8	9	10	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
No.	Task / Date	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	S	M	T	W	T	F	S	S	M	T	W	T	F	S	S	M	T	W	T
1	Mobilize																																										
2	Tag Bottom																																										
3	Rock up to 650'																																										
4	Hole Plug 650' - 645'																																										
5	Cement 645' - 2' BLS																																										
6	Remove Pipeline																																										
7	Remove Wellhead																																										
8	Remove Pad																																										
9	Clean Site / De-mobilize																																										
10																																											
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Working Days
Weekends
Holidays

BAROID® BENTONITE PELLETS

Sealing and Plugging Material

Description

BAROID BENTONITE PELLETS are compressed, shaped pellets of high-yielding, untreated Wyoming bentonite.

BAROID BENTONITE PELLETS are available in three sizes: 1/4", 3/8", and 1/2".

Applications/Functions

- Seal or grout plastic or steel casing
- Isolate screen intervals, subsurface instrumentation, and sampling zones
- Provide a protective interface between gravel pack and cement grout
- Plug abandoned earthen boreholes and cavities
- Create a stable, permanent below-grade seal in:
  - monitor/observation wells
  - dewatering holes
  - caisson holes
  - soil sampling holes
  - mineral exploration holes
  - water wells

Advantages

- High swelling capacity in the presence of fresh water
- Easily removed
- No heat of hydration
- Re-hydratable
- After hydration, forms a semi-solid, flexible seal with permeability less than 1×10^{-8} cm/sec

Typical Properties

Appearance	Pre-formed tablet shapes, gray in color		
Mineralogical component	85% sodium montmorillonite clay		
Slurry pH (6%)	8.8		
Specific gravity	2.6		
Bulk density, lb/ft^3	1/4"	3/8"	1/2"
(as packaged)	71	71	67

Rev. 8/2000 · IDP 604

Recommended Treatment

1. Pour pellets slowly from surface to minimize bridging of pellets. Break up bridges as they occur.
2. Pellets can be tremied into place when necessary. Volume needed can vary by as much as 10 to 15 percent in a rotary drilled hole.
3. Calculate and monitor pellet addition amounts to ensure proper hole fill by measuring the position of the top of the plug after every few pails.
4. Calculated volume should be applied to borehole.

Volume/Amount of BAROID BENTONITE PELLETS Required For Grouting and Plugging Applications					
Nominal Size (inches)	Hole Volume, ft^3/ft	gal/ft	Pounds of PELLETS needed to fill 1 ft		
			1/4"	3/8"	1/2"
3	0.049	0.37	3.5	3.5	3.3
4	0.087	0.65	6.2	6.2	5.9
4½	0.110	0.83	7.8	7.8	7.4
5	0.136	1.02	9.7	9.6	9.2
5½	0.165	1.23	11.7	11.6	11.1
6	0.196	1.47	13.9	13.8	13.2
7	0.267	2.00	19.0	18.8	18.0
7½	0.307	2.30	21.8	21.6	20.6
7 7/8	0.338	2.53	24.0	23.8	22.7
8	0.349	2.62	24.8	24.6	23.4
8½	0.394	2.95	28.0	27.7	26.4
8¾	0.417	3.12	29.7	29.4	28.0
10	0.545	4.10	38.7	38.4	36.5
11	0.660	4.94	46.9	46.5	44.3
11½	0.721	5.40	51.2	50.8	48.4
12	0.785	5.88	55.8	55.3	52.6
12¼	0.818	6.12	58.1	57.6	54.8
12½	0.852	6.37	60.5	60.0	57.1
12 3/4	0.886	6.63	62.9	62.4	59.4
17¼	1.623	12.14	115.23	114.3	108.7
17 1/2	1.670	12.49	118.6	117.6	111.9
24	3.141	23.49	223.1	221.2	210.5
26	3.686	27.60	261.8	259.6	247.1
30	4.907	36.70	348.5	345.6	328.9
36	7.066	52.85	501.9	497.6	473.6

Recommended Treatment (Metric Equivalents)

1. Pour pellets slowly from surface to minimize bridging of pellets. Break up bridges as they occur.
2. Pellets can be tremied into place when necessary. Volume needed can vary by as much as 10 to 15 percent in a rotary drilled hole.
3. Calculate and monitor pellet addition amounts to ensure proper hole fill by measuring the position of the top of the plug after every few pails.
4. Calculated volume should be applied to borehole.

Volume/Amount of BAROID BENTONITE PELLETS Required For Grouting and Plugging Applications

Nominal Size (mm)	Hole Volume, m^3/meter	Liter/meter	Kilograms of PELLETS needed to fill 1 meter		
			1/4"	3/8"	1/2"
76	0.005	4.6	7.4	7.3	6.9
102	0.008	8.1	13.1	13.0	12.4
114	0.010	10.3	16.6	16.4	15.6
127	0.013	12.7	20.5	20.3	19.3
140	0.015	15.3	24.9	24.5	23.4
152	0.018	18.2	29.6	29.2	27.8
178	0.025	24.8	40.3	39.7	37.8
191	0.029	28.5	46.2	45.6	43.4
200	0.031	31.4	51.0	50.2	47.9
203	0.032	32.4	52.6	51.9	49.4
216	0.037	36.6	59.4	58.5	55.8
222	0.039	38.8	62.9	62.0	59.1
254	0.051	50.7	82.2	81.0	77.2
279	0.061	61.3	99.4	98.0	93.4
292	0.067	67.0	108.7	107.1	102.1
305	0.073	73.0	118.3	116.7	111.2
311	0.076	76.1	123.3	121.6	115.9
318	0.079	79.2	128.4	126.6	120.6
324	0.082	82.4	133.6	131.7	125.5
438	0.151	150.8	244.5	241.1	229.8
445	0.155	155.2	251.7	248.1	236.5
610	0.292	291.9	473.3	466.7	444.7
660	0.343	342.6	555.5	547.7	521.9
762	0.456	456.1	739.6	729.2	694.9
914	0.657	656.8	1065.0	1050.0	1000.7

Notes:

- If less than calculated volume is used, this indicates bridging or hole collapse. If more than calculated volume is used, this indicates hole washout (enlargement).
- To calculate the volume of material needed for filling annular space between casing and hole wall:
  1. Subtract the volume needed to fill the nominal casing O.D. from the volume needed to fill the nominal drilled hole size.
  2. Use the preceding table(s) to obtain volumes for use in the formula below.

Example:

5-inch (127 mm) casing in an 8 3/4" (~222 mm) drilled hole, and using 1/4" pellets

Volume needed = (volume drilled hole) - (volume casing O.D.)

29.48 lb - 9.63 lb = 19.85 lb to fill 1 foot of annular space

62.9 kg – 20.5 kg = 42.4 kg to fill 1 meter of annular space

Note:

This product has been certified by the National Sanitation Foundation (NSF) to contribute no adverse health problems when used as the manufacturer recommends for the construction of potable water wells.

Packaging

BAROID BENTONITE PELLETS are packaged in 5-gal (19-liter) plastic pails containing 50-lbs (22.7 kg). One container of product will occupy approximately 0.7 ft^3.

Availability

BAROID BENTONITE PELLETS can be purchased through any Baroid Industrial Drilling Products Distributor. To locate the Baroid IDP distributor nearest you contact the Customer Service Department in Houston or your area IDP Sales Representative.

Baroid Industrial Drilling Products

A Product and Service Line of Halliburton Energy Services, Inc.

3000 N. Sam Houston Pkwy. E.

Houston, TX 77032

Customer Service	(800) 735-6075 Toll Free	(281) 871-4612
Technical Service	(877) 379-7412 Toll Free	(281) 871-4613

GENERAL OFFICE: 155 East 21st Street / P.O. Box 4667 / Jacksonville, Florida 32201 / (904) 355-1781
FLORIDA ROCK INDUSTRIES INC Mining, Ready Mix Concrete, and Construction Products

TO WHOM IT MAY CONCERN:

The OSHA Hazard Communication Rule requires manufacturers and distributors to provide all direct purchasers with appropriate Material Safety Data Sheets (MSDS.)

In order to comply with this rule, the Concrete Group of Florida Rock Industries, Inc. has developed Material Safety Data Sheets, which cover the ready mixed concrete and concrete block, which we produce. Enclosed are copies of these.

If you require any additional product safety information pertaining to the enclosed MSDS, please contact the Concrete Group Safety Department.

FLORIDA ROCK INDUSTRIES, INC.
Florida Concrete Group

Gregory F. Lloyd
Director of Safety & Training

GFL/bc

Enclosures (1)
Portland Cement, Concrete and
Concrete Products - MSDS

004-1486

FLORIDA ROCK INDUSTRIES, INC.

Portland Cement Concrete and Concrete Products - Material Safety Data Sheet

Revised: Jan 2001

SECTION I - PRODUCT IDENTITY

Chemical Name	N/A	Trade Name	Portland Cement Concrete, Concrete Block, Concrete Lintels
Manufactures Name	Florida Rock Industries, Inc.	Formula	X mixture
Emergency Telephone	(904) 355-1781	Address	Concrete Group, 155 East 21st
Prepared By	Thomas May		Jacksonville, Florida 32206

SECTION II - HAZARDOUS INGREDIENTS

Concrete is a mixture of inert gravel, sand, Portland cement, and water. It may also contain chemical admixtures and/or fly ash. The chemical admixtures are present in quantities comprising less than 1% of the material. The hazardous ingredients in plastic (wet) concrete cannot become airborne. However, when the water is added to the dry ingredients, it reacts with the calcium oxide in the Portland cement to form calcium hydroxide - a corrosive chemical that will irritate the eyes and skin upon contact. Concrete dust from dried Portland cement concrete may also contain hazardous ingredients in sufficient concentrations to cause skin, eye, or respiratory disease.

CHEMICAL	OSHA PEL**	NIOSH REL**	%	CAS No.
Portland cement	5.0 mg/m³ (respirable dust); 15.0 mg/m³ (total dust)	5.0 mg/m³ (respirable dust); 10.0 mg/m³ (total dust)	20-30	65997-15-1
Calcium oxide	5 mg/m³ (total dust)	2 mg/m³ (total dust)	2-4	1305-62-0
Sand, quartz, crystalline silica	approximately 0.1 mg/m³ (respirable dust) – exact limit based on percentage of quartz	0.05 mg/m³ (respirable dust)	10-20	14808-60-7
Gravel	none	none	40-50	1317-67-3

** The product is delivered as a wet ready mix concrete, so there is no dust hazard present from the wet product and the OSHA-PELs and NIOSH-RELs generally would not be applicable at time of delivery.

SECTION III - PHYSICAL DATA

Boiling Point	Not applicable	Specific gravity: (water=1)	Normal range 1.5-2.9
Vapor pressure	Not applicable	Appearance	Grey, plastic, granular mud
Vapor density	Not applicable	Stability	Stable
Melting Point	Not applicable	Incompatible materials	None
Hazardous polymerization	None	Neutralizing chemicals	Not applicable
Special precautions	Will harden in 2 - 8 hours		

SECTION IV - FIRE AND EXPLOSION HAZARD

Flash point	Not applicable	Special fire fighting procedures	Not applicable
Flammable limits	Not applicable	Unusual fire/explosion hazards	Not applicable
Extinguishing media	Not applicable	NFPA Hazard Rating	0 = Insignificant

SECTION V - HEALTH HAZARD DATA

Effects of Exposure and Primary Route of Entry

Skin and eye contact: Skin and eye contact are the primary routes of entry. Wet ready mix concrete mud has an alkalinity level of pH12 to pH13, and may cause irritation and alkali burns. Prolonged or repeated contact may cause allergic dermatitis in sensitive individuals. Skin contact may cause local irritation of the affected area. Pre-existing skin conditions may be aggravated by exposure.

Ingestion: May cause irritation.

Inhalation: Wet ready mix concrete mud does not pose an inhalation hazard. HOWEVER, SAWING, GRINDING, CUTTING, DRILLING, OR OTHERWISE DISTURBING DRIED CONCRETE MAY CONTRIBUTE TO ELEVATED LEVELS OF AIRBORNE RESPIRABLE SILICA DUST, WHICH MAY CAUSE SILICOSIS. ALWAYS USE APPROPRIATE RESPIRATORY PROTECTION IN DUSTY ENVIRONMENTS.

SECTION V - HEALTH HAZARD DATA CONTINUED

Silicosis

Silicosis is a progressive lung disease caused by breathing respirable particles of silica dust over a period of time. Individuals vary in their susceptibility. Chronic silicosis may develop after 10 or more years of exposure to crystalline silica at relatively low levels. Accelerated silicosis may result from exposure to high concentrations over 5 - 10 years. Acute silicosis occurs where exposure concentrations are the highest and can cause symptoms to develop within a few weeks to 5 years. Dry cough may be an early manifestation of silicosis. As the disease progresses, the cough may become more prolonged and be associated with sputum production. The most frequently observed symptoms are unproductive cough, dyspnea (labored or difficult breathing), chest pains, and changes in airway sounds.

Emergency & First Aid Procedures

Skin Contact - Wash skin with large amounts of soap and clean water. For minor irritation, apply a lanolin-containing cream to skin after washing. Contact a physician if persistent or severe irritation or discomfort occurs.
Eye Contact - Contact a physician immediately. Flush eyes with large amounts of clean water for at least 15 minutes.
Ingestion - If ingestion occurs, do not induce vomiting. Never give anything by mouth to an unconscious or convulsing person. If the individual is conscious, provide two or three glasses of water to dilute the stomach contents. Contact a physician or Poison Control Center

SECTION VI - TOXICITY INFORMATION

The International Agency for Research on Cancer (IARC), the national Toxicology Program (NTP), and the National Institute for Occupational Safety and Health (NIOSH) classify crystalline silica as a probable human carcinogen.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND USE

Plastic (Wet) Portland Cement Concrete

Plastic (Wet) Concrete Should Be Kept out of Reach of Children.

Small spills: Materials will harden in 2 - 8 hours and can generally be removed after hardening. If removing while still wet water may be used to dilute. Use personal protective equipment described above.
Large spills: Notify safety personnel. Clean-up personnel need to use eye and body protection as described above.

Dried Portland Cement Concrete and Concrete Products

RESPIRABLE DUST MAY BE GENERATED WHEN HARDENED CONCRETE IS SUBJECTED TO MECHANICAL FORCES SUCH AS DEMOLITION WORK AND SURFACE TREATMENT (SANDING, GROOVING, CHISELING, CUTTING, GRINDING, ETC.)

To the extent practical, use wet methods to minimize airborne dust levels when sawing or using other concrete renovation methods.

- Wear an appropriate and approved respirator when the work generates visible airborne dust. Providing exhaust ventilation to remove the dust to an unoccupied area when sawing or using other renovation methods may also contribute to reduced dust levels.
- Persons not wearing appropriate respiratory protective equipment should be excluded from dusty areas until the demolition work has been completed and the dust has cleared.
- Avoid re-entraining dust during cleaning, renovation or demolition activities. Use wet methods or a vacuum with a high efficiency filter to remove the dust.

Personal Protection and Hazard Control Information

Good Work Practices - minimize skin contact. Use goggles or face shield when splashing is possible. Use gloves and other skin coverings to prevent contact. Clothing saturated with plastic (wet) concrete should be removed promptly to prevent continued contact with skin.
Ventilation - not required with plastic (wet) concrete.
Respiratory Protection - not required with plastic (wet) concrete.

Personal Protective Equipment

Eyes - wear safety goggles or face shield.
Skin - wear waterproof gloves and boots with normal work clothing covering torso, arms, legs, and feet.

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MILL TEST REPORT

Cement Type: ASTM/AASHTO TYPE I & II
Source: T. S. Baker Plant
Silo: 2 & 5
July 1, 2007

CHEMICAL COMPOUNDS§	COMPOSITION	LIMIT	ASTM C-150
Silicon Dioxide (SiO_2)	20.01%	Min.%	20.0%
Aluminum Oxide (Al_2O_3)	4.70%	Max.%	6.0%
Iron Oxide (Fe_2O_3)	3.85%	Max.%	6.0%
Calcium Oxide (CaO)	63.91%		
Magnesium Oxide (MgO)	0.67%	Max.%	6.0%
Sulfur Trioxide (SO_3)	3.10%	Max.%	3% **
Loss On Ignition	2.09%	Max.%	3.0%
Insoluble Residue	0.16%	Max.%	0.75%
Alkalies as Na_2O	0.15%	Max.%	0.60%
Tricalcium Silicate (C_3S)*	62.1%		
Dicalcium Silicate (C_2S)*	10.5%		
Tricalcium Aluminate (C_3A)*	6.0%		
Tetracalcium Aluminoferrite (C_4AF)*	11.7%		
$CaCO_3$ in limestone, %	93%	Min.%	70%
Limestone, %	1.5%	Max.%	5%
Limestone Source	T.S. Baker Plant		

** By ASTM C-563, SO_3 target at 3.0%. Cement meets ASTM C-1038 for SO_3 at 3.3% or lower.

PHYSICAL TEST RESULTS			
Blaine Surface, m^2/kg (ASTM C204)	407	Min.%	280
Vicat Set, minutes (ASTM C191)			
Initial	108	Min.%	60
Final	202	Max.%	600
Air Content (ASTM C185)	4.9%	Max.%	12%
Autoclave Expansion (ASTM C151)	0.10%	Max.%	0.80%
Compressive Strenght, p.s.i. (ASTM C109)			
1 days	2030		
3 days	3420	Min.%	1740
7 days	4320	Min.%	2760
28 days (Previous)	6960		

§ Chemical analysis performed as per ASTM C 114 Rapid Test Methods.
* Compounds are calculated as per ASTM C 150.

The cement covered by this report complies with the current specifications for:
ASTM C 150: Type I and Type II

Melissa N. Williams
Quality Control Engineer