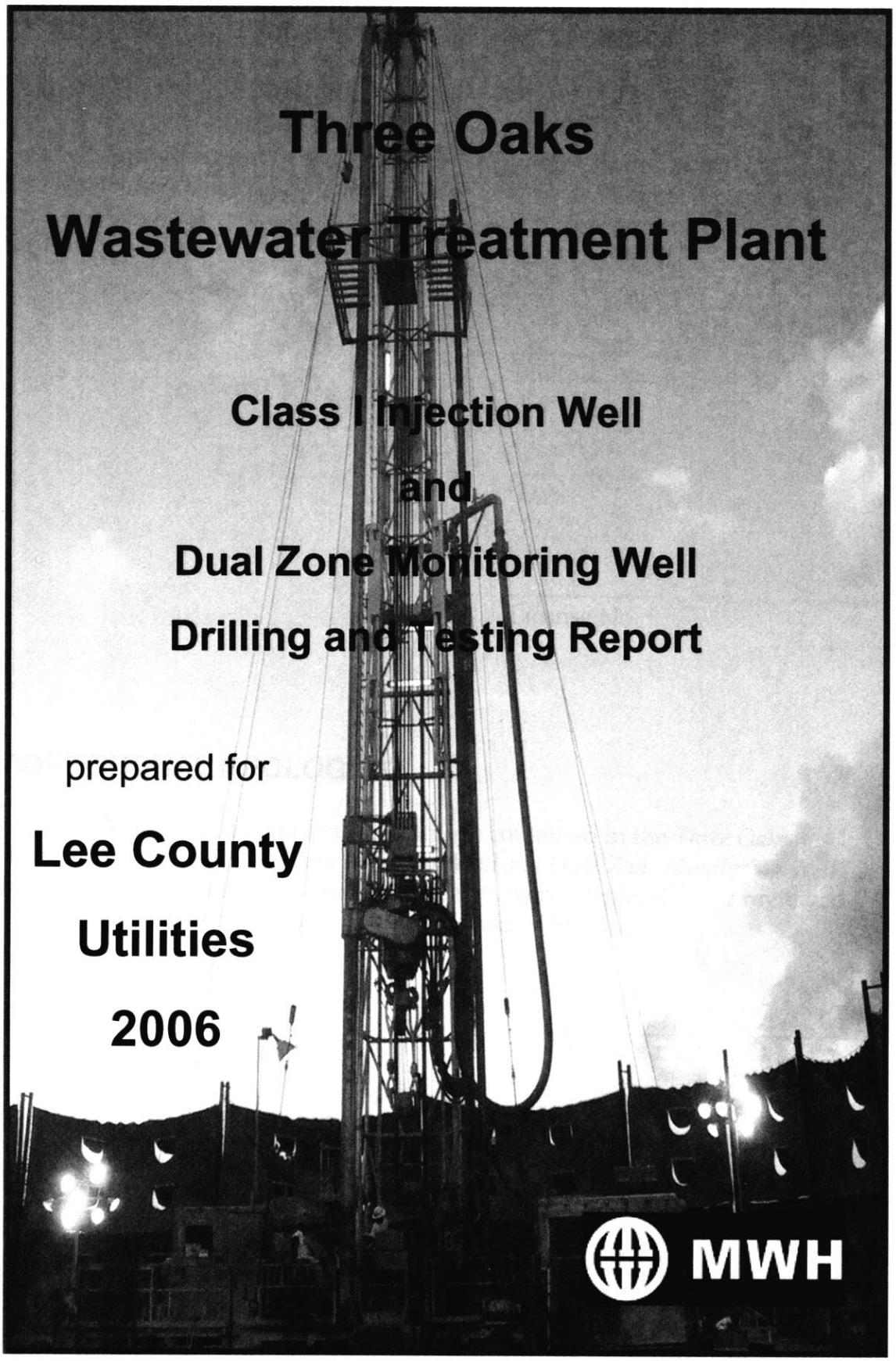


Three Oaks Wastewater Treatment Plant

Class I Injection Well and Dual Zone Monitoring Well Drilling and Testing Report

prepared for

Lee County Utilities

2006

MWH

APPENDICES

Appendix A

Construction Permit

Department of Environmental Protection

Jeb Bush
Governor

South District
P.O. Box 2549
Fort Myers, Florida 33902-2549

Colleen M. Castille
Secretary

BY ELECTRONIC MAIL:

In the Matter of an
Application for Permit by:

Rick Diaz, P.E., Director of Utilities
Lee County Utilities Division
1500 Monroe Street
Fort Myers, FL 33901-0000
diazr@leegov.com

Lee County – UIC/DW/IW
FDEP File No. 38436-178-UC
Three Oaks Wastewater Treatment Facility
IW-1 Class I Injection Well

NOTICE OF PERMIT ISSUANCE

Enclosed is Permit Number 38436-178-UC to construct a Class I Injection Well (IW-1) system, issued pursuant to Section(s) 403.087, Florida Statutes.

Any party to this Order (permit) has the right to seek judicial review of the permit pursuant to Section 120.68, Florida Statutes, by the filing of a Notice of Appeal pursuant to Rule 9.110, 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 this Notice is filed with the Clerk of the Department.

Executed in Fort Myers, Florida.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION

_____
Jon M. Iglehart
Acting Director of
District Management

CERTIFICATE OF SERVICE

The undersigned duly designated deputy clerk hereby certifies that this PERMIT and all copies were mailed before the close of business on October 11, 2004 to the listed persons.

Clerk Stamp

FILING AND ACKNOWLEDGMENT

FILED, on this date, pursuant to Section.120.52, Florida Statutes, with the designated Department Clerk, receipt of which is hereby acknowledged.

Mary Fitzgerald 10/11/04

Clerk Date

JMI/JBM/mjf

Enclosure

Copies furnished to:

Mark Chandler Mark.R.Chandler@us.mwhglobal.com
Nancy Marsh marsh.nancy@epa.gov
Steve Anderson sanderso@sfwmd.gov
Ron Reese rsreese@usgs.gov
Joe Haberfeld joe.haberfeld@dep.state.fl.us
Charles Davault charles.davault@dep.state.fl.us

Department of Environmental Protection

Jeb Bush
Governor

South District
P.O. Box 2549
Fort Myers, Florida 33902-2549

Colleen M. Castille
Secretary

PERMIT

PERMITTEE:

Lee County Utilities
1500 Monroe Street
Fort Myers, Florida 33902-0000
diazr@leegov.com

Permit/Certification
Number: 38436-178-UC
Date of Issue: October 11, 2004
Expiration Date: October 10, 2009
County: Lee
Latitude: 26° 28' 15.6" N
Longitude: 81° 47' 35.7" W
Section/Town/Range: 16 /T46S/R25 E
Project: Three Oaks WWTF
IW-1 Class I Injection Well

This permit is issued under the provisions of Chapter 403, Florida Statutes (F.S.), and Florida Administrative Code (F.A.C.) Rules 62-4, 62-520, 62-528, 62-550, 62-600, 62-601, and 62-660. The above named permittee is hereby authorized to perform the work or operate the facility shown on the application and approved drawing(s), plans, and other documents, attached hereto or on file with the Department and made a part hereof and specifically described as follows:

Construct a nominal 14.5-inch diameter tubing and packer Class I injection well (IW-1), with 14.5" FRP tubing to approximately 2,500 feet below land surface (bls) and a total depth of approximately 3,000 feet bls. Injection is into the Oldsmar Formation within the Lower Floridan Aquifer for the disposal of secondary treated domestic effluent from Three Oaks WWTF, membrane softening concentrate from the Pinewoods Water Treatment Plant (WTP), and back-up disposal of reverse osmosis concentrate from the proposed Pinewoods Reverse Osmosis Water Treatment Plant (ROWTP), for a maximum disposal of 7.4 million gallons per day (MGD). The maximum injection rate shall not exceed 5139 gpm. The dual-zone monitoring well (DZMW-1) will be completed from approximately 1,350 to 1,400 feet bls and 1,800 to 1,850 feet bls.

The Application to Construct/Operate/Abandon Class I, III, or V Injection well System, DEP Form 62-528.900(1), was received on December 17, 2003, with supporting documents and additional information last received on June 10, 2004. The demonstration of Financial Responsibility was approved May 27, 2004. The Project is located at the Three Oaks WWTF on Three Oaks Parkway, Fort Myers, Florida.

Subject to Specific Conditions 1-13.

1. **GENERAL CRITERIA**

a. Any permit noncompliance constitutes a violation of the Safe Drinking Water Act and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or for denial of a permit renewal application.

b. 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.

c. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

d. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures.

e. This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the permittee for a permit modification, revocation or reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.

f. When requested by the Department, the permittee shall furnish, within the time specified, any information needed to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit.

g. Signatories and Certification Requirements

(1) All reports and other submittals required to comply with this permit shall be signed by a person authorized under Rules 62-528.340(1) or (2), F.A.C.

(2) In accordance with Rule 62-528.340(4), F.A.C., all reports shall contain the following certification:

> "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 upon 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."

h. The permittee shall notify the Department and obtain approval or to any physical alterations or additions to the injection or monitor well, including removal of the well head.

i. The permittee shall give advance notice to the Department of any planned changes in the permitted facility or injection activity that may result in noncompliance with permit requirements.

j. The permittee shall report any noncompliance which may endanger health or the environment, including:

(1) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an underground source of drinking water; or

(2) Any noncompliance with a permit condition or malfunction of the injection system that may cause fluid migration into or between underground sources of drinking water.

(3) 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 times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and the steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

k. No underground injection is allowed that causes or allows movement of fluid into an underground source of drinking water.

l. The permittee shall retain all records concerning the nature and composition of injected fluid until five years after completion of any plugging and abandonment specified under Rule 62-528.435, F.A.C. The permittee shall deliver the records to the Department office that issued the permit at the conclusion of the retention period unless the permittee elects to continue retention of the records.

m. If injection is to continue beyond the expiration date of this permit the permittee shall apply for, and obtain an operation permit. If necessary to complete the two-year operational testing period, the permittee shall apply for renewal of the construction permit at least 60 days prior to the expiration date of this permit.

2. Site Requirements

a. A drilling pad shall be provided to collect spillage of contaminants and to support the heaviest load that will be encountered during drilling.

b. The disposal of drilling fluids, cuttings, formation water or waste shall be in a sound environmental manner that avoids violation of surface and ground water quality standards. The disposal method shall be approved by the Department prior to start of construction.

c. Specific drilling pad dimensions and design details shall be provided to and approved by the Department prior to commencing construction (and shortly after selection of drilling contractor).

d. The six water table monitoring wells surrounding the injection well pad shall be sampled and analyzed prior to drilling this injection well and then weekly thereafter. Sampling shall include specific conductance, pH, chloride, temperature and water level.

e. Pursuant to Rule 62-528.455(1)(c)6., F.A.C., a survey indicating the exact location in metes and bounds of all wells authorized by this permit shall be provided prior to issuance of an operating permit.

3. Construction and Testing Requirements

a. The permittee shall contact the Technical Advisory Committee (TAC) chairman so that he may schedule progress review meetings at appropriate times with the TAC, the U.S. Environmental Protection Agency (USEPA), and permittee for the purpose of reviewing the results of tests, geophysical logging, surveys, drilling records and construction problems.

b. All drilling shall be inside a blow out preventer upon penetration of the Floridan Aquifer.

c. Mechanical integrity testing is a two part demonstration which includes a pressure test to demonstrate that no leaks are present in the casing, tubing or packer and a temperature or noise log and radioactive tracer survey to demonstrate the absence of leaks behind the casing. Verification of pressure gauge calibration must be provided at the scheduled tests.

d. Department approval and Technical Advisory Committee (TAC) and USEPA review pursuant to F.A.C. Rule 62-528 is required for the following stages of construction:

SPECIFIC CONDITIONS

(1) Intermediate casing seat selection.

(2) Final casing seat selection.

(3) Prior to operational (long term) testing with effluent.

The permittee shall submit all necessary supporting documentation/data, with interpretation, to the TAC and USEPA for review.

e. The cementing program, as required in Section 62-528.410(5), Florida Administrative Code, shall be submitted to the Department, the USEPA, and the Technical Advisory Committee for review. Cementing shall not commence prior to approval being granted.

f. All temperature surveys (except for mechanical integrity demonstration) shall be run within 48 hours after cementing.

g. TAC meetings are scheduled on the first Tuesday of each month subject to a 5 working day prior notice and timely receipt of critical data by all TAC members and the USEPA. Emergency meetings may be arranged when justified to avoid undue construction delay.

h. The Permittee shall insure that safe internal pressures are maintained during the cementing of all casings.

i. The background water quality of the injection zone shall be established prior to commencement of any injection testing. Parameters to be measured are the primary and secondary drinking water standards and minimum criteria. Dioxin, asbestos, acrylamide, and epichlorohydrin need not be included in the primary standards.

Minimum Criteria for Sewage Effluent

Toluene	Phenanthrene
1,2 Dichlorobenzene	Phenol
Chloroform,	2,4,6-Trichlorophenol
1,2 Dichloroethylene	2-Chlorophenol
Chloroethane	2-Chlorophenol
Aldrin	Organic Nitrogen
Dieldrin	Total Kjeldahl Nitrogen
Diethylphthalate	Nitrite (as N)
Dimethylphthalate	Total Nitrogen
Butybenzylphthalate	Soluble Orthophosphate
Napthalene	Total Phosphorus
Anathracene	Antimony

j. The injection and monitor well(s) at the site shall be abandoned when no longer usable for their intended purpose, or when posing potential threat to the quality of the waters of the State. Within 180 days of well abandonment, the permittee shall submit to the Department, the USEPA, and the TAC the proposed plugging method, pursuant to Rule 62-528.435, F.A.C.

k. All salt used in well drilling shall be stored in an environmentally sound manner. Accurate records shall be kept on the amount of salt used.

l. All dual induction, sonic and caliper geophysical logs run on the pilot holes of the injection well and DZMW shall be submitted with scales of one inch equals one hundred feet (1”=100’), two inches equals one hundred feet (2"=100'), and five inches equals one hundred feet (5"=100').

4. Quality Assurance/Quality Control Requirements

a. This permit approval is based upon evaluation of the data contained in the application received December 17, 2003, and the plans and/or specifications submitted in support of the application. Any proposed modifications to this permit shall be submitted in writing to the UIC program manager, the TAC, and USEPA for review and clearance prior to implementation. Changes of negligible impact to the environment and staff time will be reviewed by the program manager, cleared when appropriate and incorporated into this permit. Changes or modifications other than those described above will require submission of a completed application and appropriate processing fee as per Rule 62-4.050, F.A.C.

b. A professional engineer registered per Chapter 471, Florida Statutes shall be retained throughout the construction period to be responsible for the construction operation and to certify the application, specifications, completion report and other related documents. The Department shall be notified immediately of any change of engineer.

c. Where required by Chapter 471 (P.E.) or Chapter 492 (P.G.) F.S., applicable portions of permit applications and supporting documents that are submitted to the Department for public record shall be signed and sealed by the professional(s) who approved or prepared them.

d. The Department shall be notified immediately of any problems that may seriously hinder compliance with this permit, construction progress, or good construction practice. It may require a detailed written report describing the problem, remedial measures taken to assure compliance, and measures taken to prevent recurrence of the problem.

e. Issuance of a Class I Test/Injection well construction and testing permit does not obligate the Department to authorize operation of the injection well system, unless the wells qualify for an operation permit applied for by the permittee and issued by the Department.

5. Reporting Requirements

a. All reports and surveys required by this permit must be submitted concurrently to all the members of the TAC and the USEPA. The TAC and USEPA consists of representatives from these agencies:

Florida Department of Environmental Protection
South District
2295 Victoria Avenue, Suite 364
Fort Myers, FL 33901

Florida Department of Environmental Protection
Bureau of Water Facilities Regulation
UIC Program, MS 3530
2600 Blair Stone Rd.
Tallahassee, FL 32399-2400

South Florida Water Management District
P. O. Box 24680
West Palm Beach, FL 33416-4680

United States EPA, Region IV
UIC Section
61 Forsythe Street, SW
Atlanta, GA 30303-8909

United States Geological Survey
9100 NW 36th Street, Suite 107
Miami, FL 33178

b. Members of the TAC and the USEPA shall receive a weekly summary of the daily log kept by the contractor. The weekly reporting period shall run Friday through Thursday and reports shall be mailed each Friday. The report shall include but is not limited to the following:

(1) Description of daily footage drilled by diameter of bit or size of hole opener or reamer being used;

(2) Description of formation and depth encountered; and specific conductance of water samples collected during drilling. Description of work during installation and cementing of casings; include amounts of casing and actual cement used versus calculated volume required.

(3) Lithological description of drill cuttings collected every ten (10) feet or at every change in formation. Description of work and type of testing accomplished, geophysical logging, pumping tests, and coring results.

(4) Description of any construction problems that develop and their status to include a description of what is being done or has been done to correct the problem.

(5) Description of the amount of salt used.

(6) Results of any water quality analyses performed as required by this permit, including pad monitor wells

(7) Copies of the driller's log are to be submitted with the weekly summary.

(8) Deviation survey results.

c. The Department must be notified seventy-two (72) hours prior to all testing for mechanical integrity on the injection well. Testing should begin during daylight hours Monday through Friday.

d. Annotated copies of geophysical logs, lithologic descriptions and logs and water quality data (from drilling and packer tests) must be submitted to TAC and the USEPA, with interpretation, for intermediate and final casing seat selection approvals by the Department.

e. An interpretation of all test results must be submitted with all test data and geophysical logs.

f. After completion of construction and testing, a final report shall be submitted to the Department, the TAC, and the USEPA. The report shall include, but not be limited to, all information and data collected under Rule 62-528.450(2) and Rule 62-528.450(3), F.A.C., with appropriate interpretations. Mill certificates for the casing(s) shall be included in this report. To the extent possible, the transmissivity of the injection zone and maximum injection rate within safe pressure limits shall be estimated.

6. The construction permit includes a period of temporary injection operation for the purposes of long term testing. Prior to commencement of operational testing:

a. Construction of the injection well shall be complete and the permittee shall submit a notice of completion of construction to the Department signed and sealed by the engineer of record.

b. Each well shall first be tested for integrity of construction, and shall be followed by a short-term injection test of such duration to allow for the prediction of the operating pressure.

c. The permittee shall submit the following information to each member of the Technical Advisory Committee:

(1) A copy of the borehole television survey(s)

(2) Geophysical logs

(3) Mechanical integrity test data

(4) Data obtained during the short term injection testing conducted pursuant to Rules 62-528.405(3)(a) and 62-528.410(7)(e), and 62-528.450(3)(a)2., F.A.C., above

(5) Confining zone data

(6) Background water quality data for the injection zone and the monitor zones

(7) Waste stream analysis for the primary and secondary drinking water standards (except dioxin, asbestos, acrylamide, and epichlorhydrin) and the minimum criteria listed in specific condition 3.i.

(8) As-built well construction specifications

(9) Draft operation and maintenance manual with emergency procedures, and

(10) Other data obtained during well construction needed by the Department to evaluate whether the well will operate in compliance with Department rules.

d. The emergency discharge method shall be fully operational and no emergency discharge shall occur until the permittee has obtained all necessary permits.

e. Any corrective action required under Rule 62-528.300(5)(c)2., F.A.C., has been completed.

f. Written authorization shall be obtained from the Department. Authorization shall be for up to two years or the expiration date of the construction permit, whichever is less, and is nonrenewable. The authorization shall specify the conditions under which operational testing is approved. The authorization shall include:

(1) Injection pressure limitation,

(2) Injection flow rate limitation,

(3) Monthly specific injectivity testing,

(4) Reporting requirements, and

(5) An expiration date for the operational testing period not to exceed two years.

g. Before authorizing operational testing the Department shall conduct an inspection of the facility to determine if the conditions of the permit have been met.

7. Operational Testing Requirements

a. Operational Testing Conditions - Injection Well System

The injection system shall be monitored in per rule 62-528.425(1)(g) and 62-528.430(2), F.A.C. The following injection well performance data shall be recorded and reported at the frequency indicated from the injection well instrumentation in the Monthly Operating Report as indicated below. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall use continuous indicating and recording devices to monitor injection flow rate and injection pressure and annular pressure. In the case of operational failure of any of these instruments for a period of more than 48 hours, the permittee shall report to the Department in writing the remedial action to be taken and the date when the failure will be corrected.

INJECTION WELL IW-1. The proposed specifications for the injection well are as follows:

Casing Diameter (OD)	Depth (bls)Cased	Open Hole (bls)
40” Steel	500’	
30” Steel	1,800’	
20” Steel	2,500’	
14.5” FRP Tubing	2,500’	2,500’ – 3,000’

Parameters	Reporting Frequency
Injection Pressure (p.s.i)	Daily/Monthly
Maximum Injection Pressure	Daily/Monthly
Minimum Injection Pressure	Daily/Monthly
Average Injection Pressure	Daily/Monthly

Flow Rate (g.p.m.)	Daily/Monthly
Maximum Flow Rate	Daily/Monthly
Average Flow Rate	Daily/Monthly
Minimum Flow Rate	Monthly
Annular Pressure (psi)	Daily/Monthly
Maximum Annular Pressure	Daily/Monthly
Minimum Annular Pressure	Daily/Monthly
Average Annular Pressure	Monthly
Annular Fluid added/removed (gallons)	Daily/Monthly
Annular Pressure added/removed (psi)	Daily/Monthly
Total Volume WWTF Effluent Injected (gallons)	Daily/Monthly
Total Volume WTP Concentrate Injected (gallons)	Daily/Monthly
Total Volume ROWTP Concentrate Injected (gallons)	Daily/Monthly

Injectate Water Quality

WWTF Effluent Water Quality

TKN (mg/L)	Monthly
Ammonia as N (mg/L)	Monthly
Nitrate and Nitrite as N (mg/l)	Monthly
Gross Alpha	Monthly
Radium 226	Monthly
Radium 228	Monthly

WTP and ROWTP Concentrate Water Quality

TKN (mg/L)	Monthly
pH (std. units)	Monthly
Specific Conductance (µmhos/cm)	Monthly
Chloride (mg/L)	Monthly
Sulfate (mg/L)	Monthly
Field Temperature (deg. C)	Monthly
Total Dissolved Solids (mg/L)	Monthly
Sodium (mg/L)	Monthly
Calcium (mg/L)	Monthly
Potassium (mg/L)	Monthly
Magnesium (mg/L)	Monthly
Iron (mg/L)	Monthly
Carbonate (mg/L)	Monthly
Bicarbonate (mg/L)	Monthly
Gross Alpha	Monthly
Radium 226	Monthly
Radium 228	Monthly
Primary and Secondary Drinking Water Standards **	
Municipal Wastewater Indicator Parameters **	

** These analyses shall be provided prior to operational testing or testing with concentrate.

b. Operational Testing Conditions - Monitor Well System. The monitor well system will consist of one dual-zone monitor well as described below:

SPECIFIC CONDITIONS

Well Number	Casing Dia. (OD)	Depth (bls) Cased/Total
DZMW-1	24" Steel	500'
	16" Steel	1,350' / 1,400' (Shallow Zone)
	6" FRP	1,800' / 1,850' (Deep Zone)

All monitor wells shall be monitored in accordance with rule 62-528.615, F.A.C. The following monitor well performance data shall be recorded and reported at the frequency indicated from the monitor well instrumentation in the Monthly Operating Report as indicated below. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall use continuous indicating and recording devices to monitor the monitor zone pressures or water levels. In the case of operational failure of any of these instruments for a period of more than 48 hours, the permittee shall report to the Department in writing the remedial action to be taken and the date when the failure will be corrected.

Parameters	Reporting Frequency
Maximum Water Level or Pressure (Ft. NGVD/psi)	Daily/Monthly
Minimum Water Level or Pressure (Ft. NGVD/psi)	Daily/Monthly
Average Water Level or Pressure (Ft. NGVD/psi)	Monthly
Water Quality	
TKN (mg/L)	Weekly
Ammonia as N (mg/L)	Weekly
Specific Conductivity (µmhos/cm)	Weekly
Total Dissolved Solids (mg/L)	Weekly
pH (std. units)	Weekly
Chloride (mg/L)	Weekly
Sulfate (mg/L)	Weekly
Field Temperature (°C)	Weekly
Sodium (mg/L)	Monthly
Calcium (mg/L)	Monthly
Potassium (mg/L)	Monthly
Magnesium (mg/L)	Monthly
Iron (mg/L)	Monthly
Carbonate (mg/L)	Monthly
Bicarbonate (mg/L)	Monthly
Gross Alpha	Monthly (Deep Zone Only)
Radium 226	Monthly (Deep Zone Only)
Radium 228	Monthly (Deep Zone Only)

Water quality data may be reduced to monthly analyses after a minimum six months of data if the conditions of Rule 62-528.450(3)(d), F.A.C., have been met and with Department approval.

c. The permittee shall calibrate all pressure gauge(s), flow meter(s), chart recorder(s), and other related equipment associated with the injection well system on a semi-annual basis. The permittee shall maintain all monitoring equipment and shall ensure that the monitoring equipment is calibrated and in proper operating condition at all times. Laboratory equipment, methods, and quality control will follow EPA guidelines as expressed in Standard Methods for the Examination of Water and Wastewater. The pressure gauge(s), flow meter(s), and chart recorder(s) shall be calibrated using standard engineering methods.

d. The permittee shall submit monthly to the Department the results of all injection well and monitor well data required by this permit no later than the last day of the month immediately following the month of record. The results shall be sent to the Department of Environmental Protection, P.O. Box 2549, Fort Myers, Florida 33902-2549. A copy of this report shall also be sent to the Department of Environmental Protection, Underground Injection Control Program, MS 3530, 2600 Blair Stone Road, Tallahassee, Florida 32399-2400.

e. The Engineer of Record or designated qualified representative must be present for the start-up operations and the Department must be notified in writing of the date operational testing commenced for the well.

8. Abnormal Events

a. In the event the permittee is temporarily unable to comply with any conditions of this permit due to breakdown of equipment, power outages, and destruction by hazard of fire, wind, or by other cause, the permittee shall notify the Department. Notification shall be made in person or by telephone within 24 hours of breakdown or malfunction to the UIC Program staff, South District office.

b. A written report of any noncompliance referenced in 1) above shall be submitted to the South District office within five days after its occurrence. The report shall describe the nature and cause of the breakdown or malfunction, the steps being taken or planned to be taken to correct the problem and prevent its reoccurrence, emergency procedures in use pending correction of the problem, and the time when the facility will again be operating in accordance with permit conditions.

9. Emergency Disposal

a. All applicable federal, state and local permits must be in place to allow for any alternate discharges due to emergency or planned outage conditions.

b. Any changes in emergency disposal methods must be submitted for Technical Advisory Committee (TAC) and USEPA review and Department approval.

c. The permittee shall notify the Department within 24 hours whenever an emergency discharge has occurred (Rule 62-528.415(4)(c)1., F.A.C.). Written notification shall be provided to the Department within 5 days after each occurrence. The Permittee shall indicate the location and duration of the discharge and the volume of fluid discharged.

10. Financial Responsibility

a. The permittee shall maintain the resources necessary to close, plug and abandon the injection and associated monitor wells, at all times (Rule 62-528.435(9), F.A.C.).

a. The permittee shall review annually the plugging and abandonment cost estimates. The permittee shall resubmit documentation necessary to demonstrate financial responsibility using the revised cost estimates on or before March 31 of each year.

b. In the event that the mechanism used to demonstrate financial responsibility should become invalid for any reason, the permittee shall notify the Department of Environmental Protection in writing within 14 days of such invalidation. The permittee shall, within 30 days of said notification, submit to the Department for approval, new financial documentation in order to comply with Rule 62-528.435(9), F.A.C., and the conditions of this permit.

11. Mechanical Integrity

a. Injection is prohibited until the permittee affirmatively demonstrates that the well has mechanical integrity. Prior to operational testing the permittee shall establish, and thereafter maintain, mechanical integrity of the well at all times.

b. If the Department determines that the injection well lacks mechanical integrity, written notice shall be given to the permittee.

c. Unless the Department requires the immediate cessation of injection, within 48 hours of receiving written notice from the department that the well lacks mechanical integrity the permittee shall cease injection into the well unless the Department allows continued injection pursuant to (d) below.

d. The Department may allow the permittee to continue operation of a well that lacks mechanical integrity if the permittee demonstrates that fluid movement into or between underground sources of drinking water is not occurring.

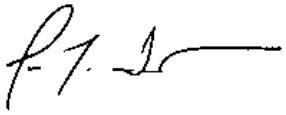
12. The permittee is reminded of the necessity to comply with the pertinent regulations of any other regulatory agency, as well as any county, municipal, and federal regulations applicable to the project. These regulations may include, but not limited to, those of the Federal Emergency Management Agency in implementing flood control measures. This permit should not be construed to imply compliance with the rules and regulations of other regulatory agencies.

13. The permittee shall be aware of and operate under the general conditions in Rule 62-528.307(1)(a) through (x) and Rule 62-528.307(2)(a) through (f), F.A.C. These general conditions are binding upon the permittee and enforceable pursuant to Chapter 403 of the Florida Statutes.

Note: In the event of an emergency the permittee shall contact the Department by calling (800) 320-0519. During normal business hours, the permittee shall call (239) 332-6975.

Issued this 11th day of October 2004.

STATE OF FLORIDA DEPARTMENT
OF ENVIRONMENTAL PROTECTION



Jon M. Iglehart
Acting Director of
District Management

JMI/JBM/mjf

Appendix B

Shift Reports

Week 1

(02-04)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/4/05
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**1**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 0 ft bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 0 ft bls
ACTIVITY: Drilling a 12¼-inch diameter pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Pad Monitor Well (PMW) samples.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site. Youngquist Brothers, Inc. (YBI) is finishing preparations so that drilling can begin.**
0951	**Starting to sample PMWs.**
1150	**Finished sampling PMWs.**
1900	**YBI has started getting the drilling equipment ready in order to add collars and the bottomhole assembly (BHA).**
2045	**The mud properties are: a density (referred to as weight by the drillers) of 8.8 pounds per gallon (lbs/gal) and a Marsh funnel test time (viscosity) of 62 seconds (sec).**
2100	**Greg Young on site relieving Hugh Klein. Site safety discussed. HK off site**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/4/05 2100 to 2/5/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
	X			
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 2**
		X		

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy, Richard Martinez
ACTIVITY: 12 ¼" Pilot Hole Drilling

START DEPTH: 0 feet bls
END DEPTH: 90 feet bls

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet
WATER SAMPLES: None
TESTING: Deviation Survey @ 80 feet

TIME	DESCRIPTION
2100	GY onsite. Project kick-off discussion with Hugh Klein (HK)
2140	HK offsite. Weather: Fair 53º, 77% humidity, Wind N 12 mph
2300	Initial drilling of IW-1 began beginning @ ~ 10 feet bls
0000	Depth = 28 feet bls, WOB 3500 to 5000 lbs, 10 rpm
0100	Depth = 38 feet bls, WOB 5000 to 6000 lbs, 12 rpm
0200	Depth = 45 feet bls, WOB 5000 to 6000 lbs, 15 rpm
	Mud Weight: 63 sec & 8.8 lbs/gal
0300	Depth = 57 feet bls, WOB 5000 to 7500 lbs, 15 rpm
0400	Connection Made.
0430	Depth = 69 feet bls, WOB 5000 to 7500 lbs, 14 rpm
0500	Depth = 80 feet bls, WOB 6000 to 7000 lbs, 13 rpm, Deviation Survey 0.2º
0600	Depth = 90 feet bls, WOB 6000 to 7000 lbs, 12 rpm
0700	Depth = 100 feet bls, WOB 6000 to 7000 lbs, 13 rpm
	YBI Shift Change. Dan Murphy and crew offsite, Richard Martinez and crew onsite
0830	Drilling began again from 90 feet bls
0900	HK onsite. Safety Issues and Progress discussed. GY offsite.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/5/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**3**

SHIFT SUMMARY

OBSERVER: Hugh Klein
DRILLER: Richard Martinez; Dan Murphy
ACTIVITY: Drilling a 12¼-inch diameter pilot hole.

START DEPTH: 90 ft bls
END DEPTH: 320 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: None.
TESTING: Deviation surveys.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site.**
0922	**The penetrated depth is 108 feet bls with a mud density of 8.8 lbs/gal and a viscosity of 59. YBI is trying to bring the viscosity up to approximately 65. The clock on the geolograph is not working, and a replacement has been ordered.**
1148	**The penetrated depth is currently 108 feet bls with the penetration rate ranging from 3 to 5 minutes. Drilling mud properties are a density of 8.8 lbs/gal and the viscosity from the Marsh funnel test of 63 sec. Craig Brugger (YBI) is currently on site, and a delivery of cement is being made.**
1417	**YBI is drilling at 194 feet bls with 5,000 to 10,000 pounds weight on bit (WOB). The drilling mud properties consist of a density of 9 lbs/gal and the viscosity from the Marsh funnel test of 63 sec.**
1530	**Deviation survey at 240 feet bls.**
1629	**The penetrated depth is 259 feet bls. Drilling mud properties are a density of 9 lbs/gal and the viscosity from the Marsh funnel test of 65 sec.**
1639	**Part of the fall protection line fell off the derrick.**
1824	**YBI is drilling at 314 feet bls with approximately 10,000 pounds WOB, with drilling mud properties of a density of 8.9 lbs/gal and the viscosity from the Marsh funnel test of 65 sec.**

1900 **Dan Murphy and crew relieving Richard Martinez and crew. Greg Young on site.**
2015 **Kelly down (KD) at 320 feet bls. Will run a deviation survey before making the connection.**
2049 **YBI making a connection.**
2100 **Greg Young on site relieving Hugh Klein. Site safety discussed. HK off site**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/4/05 2100 to 2/5/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
	X			
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**4**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 320 feet bls
DRILLER: Dan Murphy, Richard Martinez
END DEPTH: 510 feet bls
ACTIVITY: 12 ¼" Pilot Hole Drilling

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet
WATER SAMPLES: None
TESTING: Deviation Survey @ 400' and 480' bls

TIME	DESCRIPTION
2100	**GY onsite. Site safety discussed with Hugh Klein. HK off site.**
	Weather: Mostly Cloudy 60º, 66% humidity, Wind NE 7 mph
2300	**Making a Connection**
0000	**Depth = 350 feet bls, WOB 10,000 lbs, 16rpm, Mud Viscosity/Density = 55/9.0**
0400	**Deviation Survey performed. 0.25º**
0520	**Depth = 490 feet bls, WOB 10,000 lbs, 10 rpm, Mud Viscosity/Density = 57/9.2**
0700	**YBI Shift Change. Dan Murphy and crew offsite, Richard Martinez and crew onsite.**
	Depth = 510 feet bls. Material: ~ 90% Limestone
0745	**TOOH/Wiping Trip begun.**
0900	**HK onsite. Safety Issues discussed. GY offsite.**

FORM NO. 01-01

Observer's Initials GY

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/6/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**5**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 510 ft bls (pilot)
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 6 ft bls (ream)
ACTIVITY: Geophysical logging and reaming the pilot hole with a 46-inch diameter bit.

SUB CONTRACTORS: YBI Geophysical Logging.
FORMATION SAMPLES: None
WATER SAMPLES: None.
TESTING: Geophysical logging (XYC, GR, DIL, & SP).

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site.**
1020	**YBI has run one wiper trip and is now tripping out of hole (TOOH)..**
1030	**YBI Geophysical on site. John Cathey is the logger.**
1200	**Starting to run logs (gamma ray (GR), XY caliper (XYC), dual induction (DIL), and spontaneous potential (SP)).**
1315	**Finished with the geophysical suite.**
1320	**YBI beginning to build the BHA with a 46-inch bit.**
1645	**YBI starting to ream with a 46-inch diameter bit.**
1816	**Drilling at 5 feet bls with 5,000 to 10,000 pounds WOB.**
1900	**Mark Devine and crew relieving Richard Martinez and crew.**
1950	**Zach Herrington on site.**
2000	**YBI at approximately 6 feet bls with 5,000 pounds WOB. Drilling slowly until the penetration depth increases and they can add more collars.**
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/6/05 2100 – 2/7/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**6**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 6 ft bls
DRILLER: Mark Devine; Richard Martinez
END DEPTH: 14 ft bls
ACTIVITY: Reaming the pilot hole with a 46-inch diameter bit.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**
2300	**YBI is at ~7 ft below land surface (bls) with 5,000 lbs weight-on-bit (WOB).**
0000	**YBI at ~8 ft bls with 5,000-12,000 WOB.**
0245	**YBI is tripping out of hole (TOOH) and in the process of adding one collar weight.**
0518	**YBI (TIH) and continuing to ream with 46" diameter bit.**
0700	**Richard Martinez and crew relieving Mark Devine and crew. YBI at ~ 14 ft bls.**
0900	**Hugh Klein on site relieving Zach Herrington. Site Safety discussed. ZH off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/7/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**7**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 14 ft bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 41 ft bls
ACTIVITY: Reaming the pilot hole with a 46-inch diameter bit.

SUB CONTRACTORS: Welder.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site.**
0918	**YBI at 130 ft bls with approximately 5,000 pounds WOB. A new geolograph clock has been installed.**
1210	**The penetrated depth is 15 feet with 10,000 pounds WOB. The mud density is 9 lbs/gal with a Marsh funnel test viscosity of 65 seconds.**
1431	**Kelly down (KD) at 20 feet bls.**
1514	**YBI is adding more weight to the BHA.**
1720	**Starting to drill again.**
1900	**Mark Devine and crew relieving Richard Martinez and crew.**
2004	**The penetrated depth is 33 feet bls with 10,000 pounds WOB. The mud density is 9.1 lbs/gal with a Marsh funnel test viscosity of 60 seconds.**
2100	**YBI at 41 feet bls. Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/7/05 2100 – 2/8/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**8**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 45 ft bls
DRILLER: Mark Devine; Richard Martinez
END DEPTH: 100ft bls
ACTIVITY: Reaming the pilot hole with a 46-inch diameter bit.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation Survey

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**
2200	**YBI is at ~45 ft bls with 10,000 lbs (WOB).**
2345	**YBI at ~70 ft bls with 8,000-10,000 lbs WOB.**
0000	**YBI is at ~75 ft bls with 3,000-5,000 lbs WOB.**
0100	**YBI is at ~80 ft bls with 3,000-5,000 lbs WOB and drilling at ~ 10 feet/hour.**
0400	**YBI is using loader to continue to add more dirt outside of main pit.**
0600	**YBI is at ~87 ft bls with 3,000-5,000 WOB. YBI added 1 STD of drill pipe.**
0700	**Richard Martinez and crew relieving Mark Devine and crew. (2) YBI welders on site. YBI at ~ 95ft bls.**
0730	**Drilling stopped while continued work on dirt pile outside of pit with track-hoe.**
0800	**Drilling resumed. YBI at ~100 ft bls with 5,000 lbs WOB.**
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/8/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**9**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 100 ft bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 171 ft bls
ACTIVITY: Reaming the pilot hole with a 48-inch diameter bit.

SUB CONTRACTORS: Welders (Jamie Allen & Richard Harris).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site.**
0918	**YBI at 103 ft bls with approximately 5,000 pounds WOB. The penetration rate is approximately 15 minutes per foot with a mud density of 9.3 lbs/gal with a Marsh funnel test viscosity of 50 seconds.**
1116	**The penetrated depth is 114 feet with a penetration rate of approximately 5 minutes/ft. The mud properties remain the same.**
1346	**YBI has drilled to 131 ft bls and is using approximately 10,000 pounds WOB. The mud density is 9.2 lbs/gal with a Marsh funnel test viscosity of 50 seconds.**
1738	**The penetrated depth is 165 ft bls with approximately 20,000 pounds WOB and a mud density of 9.3 lbs/gal with a Marsh funnel test viscosity of 50 seconds.**
1900	**Mark Devine and crew relieving Richard Martinez and crew. The penetrated depth is 170 feet bls.**
1927	**KD at 171 feet bls.**
2015	**Material has sloughed in causing the bit to torque up, so YBI is cleaning the hole before making the connection.**
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/8/05 2100 – 2/9/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**10**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 172 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 242 ft bls
ACTIVITY: Reaming the pilot hole with a 48-inch diameter bit.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation Survey

TIME	DESCRIPTION
2100	Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.
2200	Deviation Survey taken at 170 ft bls. Survey results are 0.350 angular mintues.
2215	YBI at ~172 ft bls with 20,000 lbs WOB.
2330	YBI is at ~187 ft bls with 22,000 lbs WOB. Mud density is at 9.3 lbs/gal with a Marsh funnel test viscosity of 55 seconds.
0100	YBI is at ~195 ft bls with 20,000 lbs WOB.
0200	YBI is at ~201 ft bls with 15,000 lbs WOB.
0300	YBI is at ~208 ft bls with 20,000 lbs WOB.
0400	YBI is at ~216 ft bls with 20,000 lbs WOB. YBI tanker arrived at site.
0515	YBI is at ~220 ft bls with 20,000 lbs WOB.
0700	YBI is at ~233 ft bls with 20,000 lbs WOB. Dan Murphy and crew relieving Mark Devine and crew. Mark Devine and crew off site.
0730	YBI tanker arrived at site.
0900	YBI is at ~242 ft bls with 20,000 lbs WOB.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/9/05 0900 – 2/9/05 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**11**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 242 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 315 ft bls
ACTIVITY: Reaming the pilot hole with a 48-inch diameter bit.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation Survey

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Zach Herrington. Site safety discussed. ZH off site.**
0951	**Depth is 250 feet bls. Geolograph cable broke.**
1019	**Tanker on site emptying mud pit. Kelly down at 251 feet bls. Sampled pad monitoring well.**
1112	**Fixing geolograph.**
1148	**Depth is 256 feet bls with 10,000 to 15,000 lbs on bit and 30 rpm. Mud properties: 9.3 lbs/gal, 52 seconds Marsh funnel viscosity.**
1325	**Depth is 273 feet bls. Mud properties remain the same. 10 minutes per foot, 20,000 lbs on bit.**
1454	**Depth is 289 feet bls. 4-6 minutes per foot with 20,000 lbs on bit.**
1745	**Depth is 312 feet bls. 10 min per foot.**
1900	**Shift change, Mark Devine replacing Dan Murphy. Depth is 315 feet bls.**
1930	**Fixing geolograph. No reaming.**
2100	**Greg Young replacing Alejandra Simon.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/9/05 2100 to 2/10/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**12**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 315feet bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 320 feet bls
ACTIVITY: Reaming the pilot hole with a 48-inch diameter bit.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
2100	**GY on-site. Project progress and site safety discussed with Alejandra Simon (AS). AS off-site. Presently repairing Geolograph.**
0000	**Reaming has resumed but is slow going due to a soft clay deposit. Depth = 320 ft bls. Mark Devine has tried various techniques (changing weight and amount of mud and/or adjusting WOB) to help advance through the clay but to no avail.**
0130	**TOOH to inspect Drill Bit**
0230	**TOOH complete. The bit is completely engulfed with clay. The clay is being removed by hand.**
0315	**Removal of clay from bit continues. Weather: 57º , Fair, Calm Wind, 93% Humidity.**
0700	**YBI shift change. Dan Murphy and crew on-site. Mark Devine and crew off-site.**
0730	**Reaming pilot hole resumes.**
0900	**AS on-site. Project progress and site safety discussed. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/10/05 0900 – 2/10/05 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X	X	
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**13**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 346 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 426 ft bls
ACTIVITY: Reaming the pilot hole with a 48-inch diameter bit.

SUB CONTRACTORS: Eddie Mac, Jamie Allen- Welders
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation Survey

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. Site safety discussed. GY off site.**
0920	**Depth is 347 feet bls. Drilling with 20,000 lbs on bit and 20 rpm. Mud properties: 9.4 lbs/gal and 45 seconds Marsh funnel viscosity., Previous 10 feet formation was soft 2-4 minutes per foot. The penetration rate for the last foot was 24 minutes.**
1100	**Depth is 364 feet bls. Rate of penetration (ROP) is 4-10 minutes per foot.**
1301	**Spoke to Mark Chandler, setting depth for the 40-inch diameter steel surface casing will be 490 feet bls. Relayed this information to Kevin Greuel. Welders working on cutting the casing joint accordingly.**
1318	**Depth is 384 feet bls with 20,000 lbs on bit. ROP is 2-4 minutes per foot. Mud properties: 9.2 lbs/gal, 45 seconds Marsh funnel viscosity.**
1626	**Depth is 405 feet bls with 10,000 lbs. Mud properties: 9.2 lbs/gal, 46 seconds Marsh funnel viscosity. 10 – 15 minutes per foot.**
1815	**Making connection. Depth is 411 feet bls. Deviation survey taken.**
1900	**Shift change, Mark Devine replacing Dan Murphy.**
2027	**Depth is 426 feet bls. ROP 4 min per foot. Mud properties: 9.3 lbs/gal, 45 seconds Marsh funnel viscosity. 15 rpm with 8,000 lbs on bit.**
2100	**Greg Young on site. AS off site.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/10/05 2100 to 2/11/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
	X			
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**14**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 426 feet bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 495 feet bls
ACTIVITY: Reaming the pilot hole with a 48-inch diameter bit.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation Survey

TIME	DESCRIPTION
2100	**GY on-site. Project progress and site safety discussed with Alejandra Simon (AS). AS off-site. Mark Devine and crew on-site.**
2130	**Reaming of pilot hole with 48" bit continues. Present depth = 435 ft bls, WOB = 15K lbs, rpm = 15, Mud Weight = 9.3, Mud Viscosity = 46, Pump Pressure = 45 psi, Pen. Rate is approx. 8 ft/hr.**
0000	**Depth = 448 ft bls with 20K WOB, rpm = 15**
0200	**Depth = 470 ft bls with 15K WOB, rpm = 13 and Pen Rate is about 10 min/ft.**
0600	**Deviation Survey at 490 ft bls = 0.35º.**
0700	**YBI shift change. Dan Murphy and crew on-site. Mark Devine and crew off-site. Depth = 493 ft bls, WOB = 25K lbs, rpm = 17.**
0900	**AS on-site. Project progress and site safety discussed. GY off-site.**

Week 2

(02-11)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/11/05 0900 –2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 15**
		X		

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 492 ft bls
DRILLER: Dan Murphy; Richard Martinez
END DEPTH: 495 ft bls
ACTIVITY: Caliper log and 40-inch surface casing run.

SUB CONTRACTORS: Eddie Mac, Jamie Allen, Mark Bachman, Richard Harris- Welders; Florida Cementing, YBI Geophysical Loggers.
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. Site safety discussed. GY off site.**
0920	**Depth is 494.9 feet bls. Rate of penetration is 1 hour per foot with 25,000 lbs on bit. Florida Cementing on site (Josh Brown).**
1016	**TD @ 495 feet bls.**
1150	**TOOH.**
1450	**YBI Geophysical Loggers on site (Clay Ferguson)**
1513	**TIH with Caliper tool**
1543	**Done with caliper log. TOOH with tool.**
1630	**Begin running 40-inch steel surface casing.**
1900	**YBI shift change. Richard Martinez replacing Dan Murphy. Welders working on sixth joint (13 joints total).**
2100	**Greg Young on site. AS off site. YBI working on joint number 10.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/11/05 2100 to 2/12/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
	X			
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**16**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 495 feet bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 495 feet bls
ACTIVITY: Welding 40" Casing & Cementing

SUB CONTRACTORS: YBI Cementing – Josh Brown
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
2100	GY on-site. Cementing procedures and site safety discussed. AS off-site.
2134	Begin 12th weld joint.
2150	Weather: 49º, Clear, Wind NNE 6mph, 67% humidity.
2200	End 12th joint weld; begin 13th joint weld (Header).
0035	Begin Cementing with Pre-Flush.
0057	End Pre-Flush. 45 Barrels water used in Pre-Flush.
0108	Begin Cementing (12% gel)
0128	73 Barrels gone, 4.5 barrels/min, 12.7 lbs/gal, Header Pressure = 11 psi
0216	250 barrels gone, Switch to Neat Cement.
0308	420 barrels gone, 3 barrels/min, 15.6 lbs/gal
0310	430 barrels gone, trace of cement seen through top mud, End of cementing.
0700	YBI shift change. Dan Murphy and crew on-site. Richard Martinez and crew off-site.
0900	AS on-site. Cementing progress and site safety discussed. GY off-site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/12/05 0900 –2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**17**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 495 ft bls
DRILLER: Dan Murphy; Richard Martinez
END DEPTH: 495 ft bls
ACTIVITY: Waiting on cement to cure and switching to reverse air.

SUB CONTRACTORS: Eddie Mac, Jamie Allen- Welders
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. Site safety discussed. GY off site.**
1130	**Filling up tanker from slurry pit.**
1254	**Second Tanker on site.**
1900	**YBI shift change. Richard Martinez replacing Dan Murphy. Welders off site. YBI continues to switch to reverse air drilling.**
2100	**Greg Young on site. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/12/05 2100 to 2/13/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
	X			
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**18**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 495 feet bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 495 feet bls
ACTIVITY: Waiting On Cement

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
2100	**Greg Young on-site. Cementing procedures and site safety discussed. Alejandra Simon off-site.**
0700	**YBI Shift Change. Dan Murphy and crew on-site. Richard Martinez and crew off-site.**
0900	**Alejandra Simon on-site. Site Safety discussed. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/13/05 0900 –2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**19**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 495 ft bls
DRILLER: Dan Murphy; Richard Martinez
END DEPTH: 495 ft bls
ACTIVITY: Switching to reverse air.

SUB CONTRACTORS: Eddie Mac, Jamie Allen- Welders
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. Site safety discussed. GY off site. YBI continues to prepare rig for reverse air drilling.**
1900	**YBI shift change. Richard Martinez replacing Dan Murphy. Welders off site. YBI continues to switch to reverse air drilling.**
1950	**Cleaning 12 ¼ -inch bit.**
2021	**TIH.**
2100	**Greg Young on site. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/13/05 2100 to 2/14/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**20**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 455 feet bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 493 feet bls
ACTIVITY: Preparation/Begin Reverse Air Drilling

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
2100	**Greg Young on-site. Water sampling procedures discussed. Alejandra Simon off-site. YBI continues to prepare for Reverse Air Drilling**
0330	**Reverse Air Drilling begins. Present depth 455 ft bls. Material is cement from cementing phase.**
0700	**YBI shift change. Richard Martinez and crew off-site. Mark Devine and crew on-site. Depth = 477 ft bls.**
0840	**Depth = 493 ft bls. New material being drilled. Formation samples to begin again at 510-520 interval. Water Quality to be tested every 40 ft and Specific Capacity to be tested every 80 ft.**
0900	**Alejandra Simon on-site. Site Safety and Project Progress discussed. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/14/05 0900 –2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**21**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 495 ft bls
DRILLER: Mark Devine; Richard Martinez
END DEPTH: 560 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: Jamie Allen- Welder
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet. Field Testing for pH, Specific Conductivity, TDS, Chlorides and Temp.
TESTING: Deviation survey, specific capacity.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. Site safety discussed. GY off site. Current drilling depth is 495 feet bls.**
1138	**Drilling at 499 feet bls with 5,000 lbs on bit.**
1254	**Depth is 518 feet bls with 5,000 lbs on bit, 2-4 minutes per foot.**
1300	**Depth is 520 feet bls. Field water quality 1055 umhos/cm, 28.1 degrees Celsius, 11.35-pH. pH might be affected by cement still being recovered in the cuttings.**
1345	**Depth is 522 feet bls. Fixing wash pipe.**
1630	**Fixing air compressor.**
1800	**Working on wash pipe.**
1805	**Resume drilling at 556 feet bls, penetration rate is 2 minutes per foot.**
1823	**KD @ 560 feet bls. Preparing for specific capacity test.**
1900	**YBI shift change. Richard Martinez and crew replacing Mark Devine and crew.**
1919	**Specific capacity test**
1937	**Completed specific capacity test. Water quality taken.**
1947	**Attended YBI's safety meeting, went over procedures of the day.**
1955	**TIH with air line. Making connection and taking deviation survey.**
2100	**Greg Young on site. Alejandra Simon off site.**

FORM NO. 01-01

Observer's Initials AS

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/14/05 2100 to 2/15/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**22**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 568 feet bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 880 feet bls
ACTIVITY: Drilling 12 ¼ inch pilot hole

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet
WATER SAMPLES: Every 40 feet
TESTING: Specific Capacity at 640 feet and 880 feet

TIME	DESCRIPTION
2100	**Greg Young on-site. Specific Capacity and Water Quality testing procedures discussed. Alejandra Simon off-site.**
2231	**Kelly Down at 640 feet bls.**
0024	**Specific Capacity test performed at 640 feet bls.**
0700	**YBI Shift change. Mark Devine and crew on-site. Richard Martinez and crew off site.**
0715	**Attended YBI Safety Meeting.**
0730	**Specific Capacity test performed at 880 feet bls. YBI is making repairs on the mud pit.**
0900	**Alejandra Simon on-site. Site Safety and Project Progress discussed. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/15/05 0900 –2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 23**
		X		

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 880 ft bls
DRILLER: Mark Devine; Richard Martinez
END DEPTH: 1,008 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: Jamie Allen- Welder, Sanders Laboratory.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field samples every 40 feet. Lab samples every 80 feet.
TESTING: Deviation survey, specific capacity.

TIME	DESCRIPTION
0900	Alejandra Simon on site relieving Greg Young. Site safety discussed. GY remaining on site. YBI is removing mud shakers and associated equipment.
0950	GY off site.
1035	Filling up first tanker.
1100	Drilling continues.
1116	Depth is 895 feet bls. Drilling with 10,000 lbs on bit at a rate of 0.5 minutes per foot.
1130	Depth is 920 feet bls. Water quality sample taken. Sanders lab on site for pickup.
1207	Depth is 953 feet bls. Drilling with 5,000 to 10,000 lbs on bit at a rate of 0.5 minutes per foot. GY off site.
1250	KD at 960 feet. Specific capacity test and field and lab water quality samples taken.
1425	Depth is 974 feet bls.
1444	Tanker #2. Depth is 977 feet bls. Drilling with 15,000 lbs on bit at a rate of 6 minutes per foot. Cleaning crew on site.
1620	Depth is 997 feet bls. Drilling with 15,000 to 20,000 lbs on bit at a rate of 8 minutes per foot. Dump truck on site.
1650	Depth is 1000 feet bls. Water quality sample taken.
1730	Depth is 1007 feet bls. Drilling with 20,000 lbs on bit. 14 minutes per foot.
1800	Spoke to Mark Chandler and Gordon Kennedy, looking to take 2 cores between 1,100 to 1,200 feet bls.

FORM NO. 01-01

Observer's Initials AS

1830 YBI emptying mud pit, fixing wash pipe, and connecting pump for mixing kill.
1900 YBI shift change. Richard Martinez replacing Mark Devine.
1930 Dump truck on site to be filled with mud from slurry pit.
2100 GY on site. AS off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/15/05 2100 to 2/16/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thur	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**24**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1008 feet bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 1008 feet bls
ACTIVITY: Equipment repair. Drilling 12 ¼ inch pilot hole.

SUB CONTRACTORS: Welder – Jamie Allen
FORMATION SAMPLES: none
WATER SAMPLES: none
TESTING: none

TIME	DESCRIPTION
2100	**Greg Young on-site. Coring locations and site safety discussed. Alejandra Simon off-site. YBI is repairing drilling equipment.**
0300	**YBI continues to repair drilling equipment.**
0700	**YBI Shift change. Mark Devine and crew on-site. Richard Martinez and crew off site.**
0830	**Gordon Kennedy on-site.**
0900	**Hugh Klein on-site. Site Safety and Project Progress discussed. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/16/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 25**
		X		

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,008 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,120 ft bls
ACTIVITY: Pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Surveys & Specific Capacity.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety issues discussed. GY off site; Gordon Kennedy on site from the previous shift. YBI is still working on apparatus related to the swivel pack. The have been down since last night.**
1220	**Gordon Kennedy off site.**
1230	**YBI has completed the repairs, and has run the airline back in. YBI is cleaning the borehole before they can start drilling again.**
1435	**YBI drilling again from 1,008 feet bls.**
1529	**YBI at 1,038 feet bls with 5,000 pounds WOB.**
1541	**KD at 1,040 feet bls. Specific capacity testing conducted with water quality samples taken for laboratory and field analysis. Deviation survey also performed.**
1643	**YBI drilling again.**
1712	**Field water quality sample taken for analysis at 1,080 feet bls.**
1733	**At 1,118 feet bls with 5,000 pounds WOB.**
1739	**YBI KD at 1,120 feet bls; will have to make room in the pit before running the specific capacity test..**
1900	**Dan Murphy and crew relieving Mark Devine and crew. YBI still working on making room in the slurry pit for the specific capacity test.**

2038 Specific capacity test started with water quality for field and laboratory analysis taken. Deviation survey to be run also.
2100 Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/16/05 2100 – 2/17/05 0900 (International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**26**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,120 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,169 ft bls
ACTIVITY: Pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Survey.

TIME	DESCRIPTION
2100	**Richard Walther onsite, relieving Hugh Klein. No new safety issues.**
2155	**Depth @ 1,126.5 ft bls. 5-10K lbs WOB. Deviation survey performed at 1,120 ft bls.**
2330	**Depth @ 1,160 ft bls. 10-15K lbs WOB. Field water quality sample taken.**
2400	**Depth @ 1,169 ft bls. 15-17k lbs WOB. Selected as core depth. Lithology is well consolidated dolomitized limestone and microcrystalline dolostone. YBI pumping fluid down well and waiting for tanker to remove fluid from slurry pit prior to coring.**
0700	**YBI shift change from Dan Murphy to Mark Devine.**
0830	**Mark Chandler onsite.**
0900	**Hugh Klein onsite. Richard Walther offsite.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/17/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**27**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,170 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,170 ft bls
ACTIVITY: Coring and pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Coring.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. Site safety issues discussed. RW off site; Mark Chandler on site from the previous shift. YBI is draining the pit to have remove for borehole fluids.**
0945	**YBI starting to TOOH, but may have to stop if the well comes alive YBI will have to kill it.**
1000	**Mark Chandler off site.**
1107	**YBI TOOH with 15 stands (STDs) on deck and 6 in the hole (21 STDs total)..**
1141	**Jason Bartkiewicz from Sanders Laboratory on site picking up water samples from the borehole for laboratory analysis. Samples are from 960, 1,040, and 1,120 feet bls.**
1210	**YBI in the process of killing the well. There is 1 more STD to TOOH.**
1431	**JW Craft Co. on site servicing the latrines.**
1439	**YBI finished TOOH. Starting to put the coring assembly together.**
1602	**Sampling the PMWs.**
1823	**Starting to core from 1,170 feet bls.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**
2100	**YBI is still coring. Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/17/05 2100 – 2/18/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**28**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,170 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,185 ft bls
ACTIVITY: Drilling and recover of core sample from 1,170 to 1,185 ft bls.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: 15 ft core.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther onsite, relieving Hugh Klein. No new safety issues. Coring from 1,170 ft bls. Currently @ 1,174 ft bls.**
0345	**Done coring to 1,185 ft bls. Killing well.**
0530	**Tanker truck onsite to empty slurry pit.**
0615	**Tooh with airline.**
0700	**YBI shift change from Murphy to Devine.**
0715	**Tooh with drill pipe.**
0800	**Killing well.**
0900	**Hugh Klein onsite. Richard Walther offsite.**

Week 3

(02-18)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/18/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**29**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,170 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,304 ft bls
ACTIVITY: Coring and pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Core sample; Formation Samples every 10 feet.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Surveys; Specific Capacity Testing.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. YBI is still TOOH with the core. RW off site..**
0915	**YBI is working on killing the well. There is 1 more STD to TOOH.**
1030	**The core barrel has been unloaded with ~64% recovery.**
1045	**YBI preparing to TIH.**
1100	**Phil Waller and Mark Chandler on site.**
1115	**YBI beginning to TIH.**
1200	**Phil Waller and Mark Chandler off site.**
1336	**YBI drilling again using approximately 15,000 pounds WOB.**
1521	**The penetrated depth is 1,193 feet bls with 15,000 pounds WOB and a penetration rate of approximately 1 foot per minute.**
1535	**KD at 1,200 feet bls. A specific capacity test will be conducted here and field and laboratory samples will be collected.**
1650	**A deviation survey is being run at 1,200 feet bls.**
1700	**YBI resuming drilling.**
1800	**Water from the football taken for field water quality analysis.**
1900	**KD at 1,280 feet bls. Dan Murphy and crew relieving Mark Devine and crew.**
1953	**Running a specific capacity test , and collecting field and laboratory samples.**

2010 **Running a deviation survey at 1,280 feet bls.**
2050 **The penetrated depth is 1,304 feet bls with 15,000 pounds WOB and a penetration rate of approximately 1 foot per minute.**
2100 **Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/18/05 2100 – 2/19/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**30**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,304 ft bls
DRILLER: Dan Murphy; Dan Keeley II
END DEPTH: 1,600 ft bls
ACTIVITY: Pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Formation Samples every 10 feet.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Surveys and Specific capacity tests.

TIME	DESCRIPTION
2100	**Richard Walther onsite. Relieving Hugh Klein.**
2115	**Field wq sample @ 1,320 ft bls.**
2145	**Tanker onsite to drain slurry pit.**
2155	**KD @ 1,360 ft bls.**
2220	**Performing deviation survey.**
2245	**Beginning specific capacity test.**
2300	**End of specific capacity test. Lab wq sample taken.**
2305	**Resume drilling.**
2400	**Depth @ 1,400 feet bls. 10 –15 k lbs WOB. Wq sample taken.**
2450	**KD @ 1,440 ft bls.**
0115	**Performing deviation survey.**
0140	**Beginning specific capacity test**
0155	**End of specific capacity test. Lab wq sample taken.**
0200	**Resume drilling.**
0340	**Depth @ 1,480 ft bls., 10-15k lbs WOB. Wq sample taken.**
0445	**KD @ 1,520 ft bls.**
0449	**Beginning specific capacity test**

0509 End of specific capacity test. Lab wq sample taken.
0520 Performing deviation survey.
0550 Resume drilling.
0640 Depth @ 1,560 ft bls, 10-15k lbs WOB, penetration rate >1ft/min. Field wq sample taken.
0700 YBI shift change from Dan Murphy to Dan Keeley II.
0800 KD @ 1,600 ft bls.
Pumping fluid down well to lower slurry pit level for specific capacity test.
0843 Beginning specific capacity test
0858 End of specific capacity test. Lab wq sample taken.
0900 Hugh Klein onsite. Richard Walther offsite.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/19/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**31**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,600 ft bls
DRILLER: Dan Keeley Jr.; Dan Murphy
END DEPTH: 1,736 ft bls
ACTIVITY: Pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Formation Samples every 10 feet.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Surveys; Specific Capacity Testing.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. YBI is changing the rubbers in the header. RW off site..**
0955	**The fluid level in the slurry pit is approximately 1 foot below the top of the pit. YBI is still replacing the rubbers, and water from the pits is about to drained off to tankers.**
1108	**YBI has finished replacing the rubbers and has started to drill again.**
1120	**Another tanker on site to drain the slurry pit.**
1125	**The penetrated depth is 1,610 feet bls with 5,000 to 10,000 pounds WOB and a penetration rate of approximately 1 to 2 feet per minute.**
1207	**Stopped drilling at 1,625 feet bls for a few minutes to circulate and clean things up.**
1309	**The penetrated depth is 1,640 feet bls. Taking a water sample from the dissipater for field analysis.**
1500	**KD at 1,680 feet bls. A tanker is on site to haul fluid from the slurry pit, so the specific capacity test will be conducted after the tanker is filled.**
1600	**Specific capacity test beginning.**
1615	**Specific capacity test completed; YBI beginning to run the deviation survey at 1,680 feet.**
1620	**Deviation survey being performed.**
1650	**Drilling resumes.**

1900 **KD at 1,280 feet bls. Dan Murphy and crew relieving Dan Keeley Jr. and crew. The penetrated depth is 1,714 feet bls. Servicing rig.**

1925 **Drilling again.**

1945 **The penetrated depth is 1,720 feet bls. Taking a water sample from the dissipater for field analysis.**

2041 **The penetrated depth is 1,734 feet bls with 10,000 to 15,000 pounds WOB and a penetration rate of approximately 5 minutes per foot.**

2100 **Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/19/05 2100 – 2/20/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**32**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,736 ft bls
DRILLER: Dan Murphy; Dan Keeley II
END DEPTH: 1,765 ft bls
ACTIVITY: Pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Formation Samples every 10 feet.
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Survey and Specific capacity test.

TIME	DESCRIPTION
2100	**Richard Walther onsite. Relieving Hugh Klein. Safety issues discussed.**
2135	**Depth @ 1,746 ft bls, 15k lbs WOB, 3min/ft penetration rate.**
2235	**KD @ 1,760 ft bls, circulating.**
2319	**Begin specific capacity test.**
2334	**End specific capacity test. Lab wq sample taken.**
2345	**Performing deviation survey.**
2350	**Adding single (#22)**
2405	**Resume drilling.**
2450	**Depth @ 1,765 ft bls, 15k lbs WOB, penetration rate 5 –10min/ft. Change in lithology to dolostone. Will core @ 1,765 ft bls to 1,780 ft bls. Drilling stopped, circulating.**
0110	**Killing well, very alive.**
0245	**TOOH**
0440	**Done TOOH, killing well.**
0645	**TIH with core barrel.**
0700	**YBI shift change from Dan Murphy to Dan Keeley, II.**
0900	**Hugh Klein onsite. RAW offsite. No new safety issues.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/20/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**33**

SHIFT SUMMARY

OBSERVER: Hugh Klein
DRILLER: Dan Keeley Jr.; Dan Murphy
ACTIVITY: Coring.

START DEPTH: 1,765 ft bls
END DEPTH: 1,765 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: Coring.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Richard Walther. YBI is still TIH in order to core. Site safety discussed. RW off site..
0940	Tanker on site to haul fluid from the slurry pit.
0958	Jimmy Brantley on site to show Jack Herron how to run the pump on the cement truck for coring.
1007	Jimmy Brantley off site.
1010	Starting to core from 1,165 feet bls.
1049	Tanker on site to haul fluid from the slurry pit.
1144	Tanker on site to haul fluid from the slurry pit.
1257	At 1,767 ft bls (2 feet into core).
1440	At 1,768 ft bls (3 feet into core).
1615	At 1,769 ft bls (4 feet into core).
1736	At 1,770 ft bls (5 feet into core).
1811	At 1,771 ft bls (6 feet into core).
1900	Dan Murphy and crew relieving Dan Keeley Jr. and crew.
1925	At 1,772 ft bls (7 feet into core).
2050	At 1,773 ft bls (8 feet into core).

2100 Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/20/05 2100 – 2/21/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**34**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,765 ft bls
DRILLER: Dan Murphy; Dan Keeley II
END DEPTH: 1,765 ft bls
ACTIVITY: Coring.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: Core.
WATER SAMPLES: None
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther onsite. Relieving Hugh Klein. Safety issues discussed. 9 feet into drilling core #2.**
2400	**Done coring to 1,780 feet bls. Killing well.**
2425	**TOOH with core barrel.**
0325	**Removing core barrel from hole.**
0330	**Removing core.**
0345	**Recovered 4.25 feet of core (28%).**
0400	**Laying down core barrel.**
0430	**TIH with drill pipe**
0700	**YBI shift change from Dan Murphy to Dan Keeley II.**
0730	**TIH with airline**
0900	**HK onsite. RAW offsite. No safety issues.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/21/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**35**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,765 ft bls
DRILLER: Dan Keeley Jr.; Mark Devine
END DEPTH: 1,830 ft bls
ACTIVITY: Pilot hole drilling with a 12¼-inch diameter bit for the intermediate casing.

SUB CONTRACTORS: Jamie Allen (welder); YBI Geophysical Logging.
FORMATION SAMPLES: Formation Samples every 10 feet..
WATER SAMPLES: Field (every 40 feet) & laboratory (every 80 feet) from the borehole.
TESTING: Deviation Surveys; Specific Capacity Testing.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. Site safety discussed. RW off site. YBI beginning to drill out the cored interval.**
1027	**At 1,775 feet bls with a field calculated total dissolved solids (TDS) of 2,667 mg/L.**
1040	**At 1,780 feet bls with a field calculated TDS of 2,774 mg/L.**
1130	**Evans Oil Company on site delivering fuel.**
1140	**JW Craft Co. on site servicing the latrines.**
1150	**At 1,800 feet bls with a field calculated TDS of 3,812 mg/L.**
1210	**At 1,805 feet bls with a field calculated TDS of 17,621 mg/L.**
1233	**At 1,815 feet bls with a field calculated TDS of 13,467 mg/L.**
1305	**At 1,820 feet bls with a field calculated TDS of 11,564 mg/L.**
1320	**At 1,825 feet bls with a field calculated TDS of 9,112 mg/L.**
1340	**At 1,830 feet bls with a field calculated TDS of 12,502 mg/L. This will be TD of the pilot hole. Geophysical logger will be here tonight. YBI killing the well.**
1503	**YBI TOOH.**
1635	**YBI stopping TOOH to kill the well (2 STDs, collars, and the BHA remaining).**
1800	**YBI finished TOOH.**
1900	**Mark Devine and crew relieving Dan Keeley Jr. and crew.**

1907 YBI Geophysical on site. The logger is John Cathey.
2015 YBI running temperature and conductivity logs (background).
2100 Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/21/05 2100 – 2/22/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**36**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,830 ft bls
DRILLER: Mark Devine; Dan Keeley II
END DEPTH: 1,830 ft bls
ACTIVITY: Geophysical logging from 490 to 1,830 ft bls.

SUB CONTRACTORS: Welder (Jamie Allen); YBI Geophysical Logging (John Cathey)
FORMATION SAMPLES: None.
WATER SAMPLES: None
TESTING: Geophysical Logging.

TIME	DESCRIPTION
2100	**Richard Walther onsite. Relieving Hugh Klein. Safety issues discussed. YBI Geophysical onsite from previous shift. Currently running caliper/gamma log.**
2135	**Running dual induction log.**
2245	**Running sonic porosity log.**
2430	**Running BHTV log.**
0505	**Running static flow log.**
0540	**TIH with airline for development.**
0550	**Develop well.**
0615	**TOOH with airline. Well is alive.**
0630	**Rigging up flow meter apparatus. Artesian flow @ 100 gpm.**
0645	**Welder onsite.**
0655	**Running dynamic flow log @ 300 gpm.**
0700	**YBI shift change from Mark Devine to Dan Keeley II.**
0745	**Running dynamic fluid conductivity/temperature log.**
0845	**YBI Geophysical offsite.**
0900	**Hugh Klein onsite. RAW offsite. No safety issues.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/22/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**37**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,830 ft bls
DRILLER: Dan Keeley Jr.; Mark Devine
END DEPTH: 1,830 ft bls
ACTIVITY: Packer testing preparation.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. Site safety discussed. RW off site. YBI preparing for packer testing. Geophysical log review beginning for packer test selection.**
1840	**The first packer test will be conducted on the interval from 1,440 to 1,480 feet bls. This has been communicated to Kevin Greuel.**
1900	**Mark Devine and crew relieving Dan Keeley Jr. and crew.**
1930	**YBI beginning to build the straddle packer.**
2100	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/22/05 2100 – 2/23/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**38**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,830 ft bls
DRILLER: Mark Devine; Dan Keeley II
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test development from 1,440 to 1,480 feet bls.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality during development.
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther onsite. Relieving Hugh Klein. Safety issues discussed. Packer Test 1 will straddle 1,440 to 1,480 feet bls.**
2130	**TIH with straddle packer.**
2400	**Done TIH, setting annular probe wires.**
2430	**Annular probe set @ 50 feet bls. Water level 50 feet above probe. Sealing in annulus.**
0110	**Pressurizing Packer**
0130	**Packer pressure @ 450 psi.**
0145	**TIH with 183 feet of airline for development.**
0200	**Air developing @ 4.5 gpm. Recount of pipe in hole shows that straddle is set from 1,410 to 1,450 feet bls. Forgot 30 foot of pipe. Turning off air.**
0205	**Depressurizing packer.**
0245	**Adding 30 foot of drill pipe.**
0300	**Pressurizing packer.**
0310	**Packer pressure @ 450 psi, annular water level steady @ 51.5 feet above probe.**
0315	**Air developing @ 1.5 gpm.**
0320	**Stopped air development, adding 2 61 foot of airline (305 ft total).**

0335 **Air developing @ 2 gpm.**
0345 **Stopped air developing, adding 2 61 foot ofairline (427 ft total)**
0400 **Air developing @ 3 gpm. Will keep developing until told otherwise.**
0500 **Wq sample – 5220 uS/cm**
0545 **Wq sample – 5270 uS/cm**
0635 **Mark Chandler called, discussed 3 gpm flow rate for development. Keep on going due to lack of better zone.**
0700 **YBI shift change from Mark Devine to Dan Keeley II.**
0730 **Wq sample – 5240 uS/cm**
0815 **Wq sample – 5230 uS/cm**
0900 **Greg Young onsite. RAW offsite. Safety issues discussed.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/23/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**39**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,830 ft bls
DRILLER: Dan Keeley II, Mark Devine
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test development from 1,440 to 1,480 feet bls.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality during development. Pad Monitor Well Water Quality.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Discussed Packer Tests. Richard Walther off-site. Water Quality tests performed every 45 minutes.**
1225	**Pad Monitor Well tests begun.**
1400	**Pad Monitor Well tests finished.**
1645	**Spoke with Mark Chandler about increasing Conductivity readings.**
1900	**Spoke with Mark Chandler about graphing Water Quality data.**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/23/05 2100 – 2/24/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 40**
		X		

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,830 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #1 - Development

SUB CONTRACTORS: Jamie Allen (Welder).
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality during development.
TESTING: Aquifer test from (1,440 - 1,480 feet bls)

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed. Currently in the development stage of packer test #1.**
2130	**Water quality testing every 30 minutes.**
2330	**Water quality stabilizing. Packer pressure is stable at 450 psi.**
0030	**Lab water sample taken. End of development. Shutting air off. TOOH with airline and TIH with pump to 180 feet bls.**
0249	**Recovery is very slow. Water level in the borehole is at 170.8 feet bls, only 10 feet above pump. Will wait for full recovery before establishing a pump rate for the aquifer test.**
0336	**No change in water level (170.8 feet bls.)**
0342	**Annular water level is steady at 55.2.**
0444	**Probe reading shows that water level in the borehole is now at 125.7 feet bls and rising fast.**
0453	**Probe reading shows water level @ 121.3 feet bls.**
0502	**Probe reading shows water level @ 113.3 feet bls.**
0639	**Probe reading shows water level @ 62.7 feet bls.**
0700	**Dan Murphy and crew replacing Mark Devine and crew.**
0820	**Probe reading shows water level @ 28.54 feet bls.**
0900	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/23/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**41**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,830 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #1 Recovery 1,440 to 1,480 feet bls.

SUB CONTRACTORS: Welder (Jamie Allen).
FORMATION SAMPLES: None.
WATER SAMPLES: Initial water quality at beginning of packer test
TESTING: Packer Test

TIME	DESCRIPTION
0900	**Greg Young on-site. Discussed Packer Tests. Alejandra Simon off-site.**
1040	**Cara Rothfuss on-site.**
1530	**Recovery phase complete.**
1600	**Pump rate set at ~ 2 gal/min**
1700	**Cara Rothfuss off-site**
2004	**Packer Test begins. Water quality tested.**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/24/05 2100 – 2/25/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	X
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**42**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,830 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #1 - Pump and recovery phases.

SUB CONTRACTORS: Jamie Allen (Welder); Clay Ferguson (YBI Geophysical)
FORMATION SAMPLES: None.
WATER SAMPLES: Field and Lab samples during pump stage.
TESTING: Aquifer test from (1,440 - 1,480 feet bls)

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed. Currently in the pump stage of packer test #1. Pumping at a approximately 1.6 gpm, Three hours remaining.**
2400	**Water quality samples taken. Field and lab in addition to a 5 gallon jug.**
2404	**Stepping test. Shutting pump. Start of the 4-hour recovery phase.**
0430	**End of packer test #1. Clay Ferguson on site to retrieve data from the Hermit.**
0500	**YBI continues to prepare to move packers to the interval of (1150 to 1190) feet bls.**
0515	**Heavy rain and thunder. Rig shut down due to lightning.**
0700	**Dan Murphy and crew replacing Mark Devine and crew. Preparations to move packers continue.**
0900	**Greg Young replacing Alejandra Simon. AS off site.**

Week 4

(02-25)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/25/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**43**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,830 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #2 Development 1,150 to 1,190 feet bls.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Water Quality every ½ hour during development
TESTING: Packer Test

TIME	DESCRIPTION
0900	**Greg Young on-site. Discussed Packer Tests.**
1030	**Alejandra Simon off-site.**
1118	**Air Development begins.**
1605	**Water quality readings stabilized. Informed YBI we are ready to perform rate test.**
1630	**Alejandra Simon on-site for rate test.**
1755	**Rate test begins.**
1835	**Rate test ends. Begin 4 hour recovery phase.**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

FORM NO. 01-01

Observer's Initials GY

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/25/05 2100 – 2/26/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**44**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,830 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #2 - Background, Pump and recovery phases.

SUB CONTRACTORS: Clay Ferguson (YBI Geophysical)
FORMATION SAMPLES: None.
WATER SAMPLES: Field and Lab samples during pump stage.
TESTING: Aquifer test from (1,150 - 1,190 feet bls)

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed. Currently in the background stage of packer test #2. Well is artesian.**
2232	**Starting pump test.**
0240	**End of pump test. Lab and field water quality taken. Starting recovery phase.**
0645	**End of packer test #2. Clay Ferguson on site to retrieve data from the Hermit.**
0700	**Dan Murphy and crew replacing Mark Devine and crew. YBI continues to prepare to move packers to the interval of (1630 to 1670) feet bls.**
0900	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/26/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**45**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,830 ft bls
DRILLER: Dan Murphy, Richard Martinez
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #3 Development 1,630 to 1,670 feet bls.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Water Quality every 20 minutes during development
TESTING: Packer Test

TIME	DESCRIPTION
0900	**Greg Young on-site. Discussed Packer Tests. Alejandra Simon off-site. YBI is preparing for Packer Test #3**
1310	**Well opened. Development begins.**
1710	**Water quality readings stabilized. Informed YBI we are ready to perform rate test.**
1900	**Problem with Hermit 3000.**
2000	**Rate test begins.**
2038	**Rate test ends. Begin 4 hour recovery phase.**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/26/05 2100 – 2/27/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**46**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,830 ft bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 1,830 ft bls
ACTIVITY: Packer Test #3 - Background, Pump and recovery phases.

SUB CONTRACTORS: Clay Ferguson (YBI Geophysical).
FORMATION SAMPLES: None.
WATER SAMPLES: Field and Lab samples during pump stage.
TESTING: Aquifer test from (1,630 - 1,670 feet bls)

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed. Currently in the background stage of packer test #3.**
2445	**Starting pump test.**
0445	**End of pump test. Lab and field water quality taken. Starting recovery phase.**
0700	**Dan Murphy and crew replacing Richard Martinez and crew. YBI continues to prepare to move packers to the interval of (1630 to 1670) feet bls.**
0845	**End of packer test #3. Clay Ferguson (YBI Geophysical on site) to retrieve data from Hermit.**
0900	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/27/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X	X	
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**47**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,830 ft bls
DRILLER: Dan Murphy, Richard Martinez
END DEPTH: 1,830 ft bls
ACTIVITY: Cementing Pilot Hole preparation

SUB CONTRACTORS: Josh Brown (YBI Cementing)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0900	**Greg Young on-site. Discussed Packer Tests. Alejandra Simon off-site. YBI is preparing for cementing the Pilot Hole.**
0930	**TOOH. Deflating Packers. Pulling Air-Line and pump.**
1400	**Cleaning Packers.**
1900	**YBI shift change. Richard Martinez and crew replacing Dan Murphy and crew.**
2015	**TIH in preparation for cementing operations Josh Brown (YBI Cementing) on-site**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/27/05 2100 – 2/28/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**48**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,830 ft bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 1,830 ft bls
ACTIVITY: Cementing 12 ¼-inch pilot hole

SUB CONTRACTORS: Josh Brown (Florida Cementing).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed. Currently preparing for cementing operations.**
2219	**First stage of cement.**
2243	**Done with first stage. 20 barrels of Neat cement used. WOC.**
0221	**Tag cement at 1,803 feet bls.**
0252	**Second stage of cement.**
0355	**Done with second stage. 200 barrels of 12% gel used. WOC.**
0700	**YBI shift change. Dan Murphy and crew replacing Richard Martinez and crew.**
0900	**Greg Young on site relieving Alejandra Simon.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/28/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain	
		X	X		
Temperature	32 – 50	50 - 70	70 - 85	> 85	
		X	X		
Wind	Still	Medium	High		
		X			
Humidity	Dry	Moderate	Humid	**Report No.**	
			X	**49**	

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,830 ft bls
DRILLER: Dan Murphy, Richard Martinez
END DEPTH: 1,830 ft bls
ACTIVITY: Cementing Pilot Hole

SUB CONTRACTORS: Josh Brown (Florida Cementing)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0900	**Greg Young on-site. Discussed Packer Tests. Alejandra Simon off-site. YBI is preparing for cementing the Pilot Hole.**
1030	**Tag at 1801 feet bls.**
1120	**Stage 3 cement pumping begins.**
1132	**Stage 3 cement pumping ends.**
1553	**Tag at 1778 feet bls.**
1555	**Stage 4 cement pumping begins.**
1610	**Stage 4 cement pumping ends.**
1820	**Tag at 1677 feet bls.**
1900	**YBI shift change. Richard Martinez and crew replacing Dan Murphy and crew.**
1915	**Stage 5 cement pumping begins.**
2008	**Stage 5 cement pumping ends.**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 2/28/05 2100 – 3/01/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**50**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,830 ft bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 1,830 ft bls
ACTIVITY: Cementing 12 ¼-inch pilot hole

SUB CONTRACTORS: Josh Brown (Florida Cementing), Eddie Mac (welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed. Currently waiting on cement to harden from stage 5.**
0643	**Cement tagged at 1231 feet bls.**
0700	**YBI shift change. Mark Devine and crew replacing Richard Martinez and crew.**
0840	**Starting cement stage 6.**
0900	**YBI Continues to cement, 50 barrels of 12% gel used so far. Greg Young on site relieving Alejandra Simon.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/1/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**51**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy, Richard Martinez
ACTIVITY: Cementing Pilot Hole

START DEPTH: 1,830 ft bls
END DEPTH: 1,830 ft bls

SUB CONTRACTORS: Josh Brown (Florida Cementing)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0900	**Greg Young on-site. Alejandra Simon off-site. Stage 6 Pilot Hole Cementing On-going.**
0940	**Stage 6 cementing complete.**
1330	**Tag at 515 feet bls.**
1400	**YBI is making preparations to begin reaming phase.**
1800	**YBI is Tripping In Bottom of Hole Assembly (BHA).**
2030	**Attaching Air-line. Tripping In Hole (TIH).**
2100	**Alejandra Simon on-site. Discussed site progress and site safety. Greg Young off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/01/05 2100 – 3/02/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 – 50	50 - 70	70 - 85	> 85
	X	X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**52**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 485 ft bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 548 ft bls
ACTIVITY: Reaming with a 38.5-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Greg Young. Safety issues discussed.**
2125	**Reaming begins. Depth is 485 feet bls drilling with 5,000 lbs on bit.**
0026	**KD at 501 feet bls. Making connection and taking deviation survey.**
0412	**Depth is 519 feet bls. Penetration rate is 12 minutes per foot with 15,000 lbs on bit.**
0600	**Depth is 531 feet bls. Penetration rate is 2-4 minutes per foot with 10,000 lbs on bit.**
0700	**YBI shift change. Mark Devine and crew replacing Richard Martinez and crew.**
0830	**Depth is 548 feet bls. Penetration rate is 2-3 minutes per foot with 5,000 to 10,000 lbs on bit.**
0900	**Hugh Klein on site. Alejandra Simon off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/2/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**53**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 548 ft bls
DRILLER: Mark Devine; Richard Martinez
END DEPTH: 735 ft bls
ACTIVITY: Reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Alejandra Simon. Site safety and general project progress discussed. AS off site.**
1030	**YBI at 573 ft bls with 10,000 pounds WOB.**
1050	**KD at 580 feet bls. A deviation survey will be run before the connection is made.**
1200	**Mark Chandler on site.**
1400	**Monthly progress meeting at Three Oaks WWTP.**
1437	**Back on site. Mark Chandler leading Lee County Utilities Staff on a site tour.**
1545	**KD at 660 feet bls. A deviation survey will be run before the connection is made.**
1808	**At 699 feet bls with 10,000 pounds WOB, and a penetration rate of approximately 2 minutes per foot. The cuttings from the reamed hole correlate well with the samples from the pilot hole. There is also a great deal of cement in the cuttings from the reamed hole..**
1900	**Richard Martinez and crew relieving Mark Devine and crew.**
1953	**At 712 feet bls with 10,000 pounds WOB. The cuttings from the reamed hole correlate well with the samples from the pilot hole. There is also a great deal of cement in the cuttings from the reamed hole..**
2100	**YBI at 735 feet bls. Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/2/05 2100 – 3/3/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**54**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 735 ft bls
DRILLER: Richard Martinez; Mark Devine
END DEPTH: 840 ft bls
ACTIVITY: Reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
2100	**Richard Walther onsite, relieving Hugh Klein. No safety issues.**
2145	**KD @ 740 ft bls. Deviation Survey performed. Making connection #9.**
0505	**KD @ 820 ft bls. Deviation Survey performed. Making connection #10.**
0700	**YBI shift change from Richard Martinez to Mark Devine. Servicing rig.**
0730	**Measured water levels in pmws.**
0845	**Depth @ 840 ft bls; 5 k lbs WOB.**
0900	**HK onsite. RAW offsite. No new safety issues.**
	Periodic lithology checks displayed correlation with pilot hole and presence of cement.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/3/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**55**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 840 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 904 ft bls
ACTIVITY: Reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: PMWs.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. Site safety discussed. RW off site.**
0945	**YBI at 847 ft bls with 10,000 pounds WOB. Starting to sample the PMWs.**
1530	**KD at 900 feet bls. The cuttings from the reamed hole correlate well with the samples from the pilot hole. There is also a great deal of cement in the cuttings from the reamed hole. A deviation survey will be run before the connection is made.**
1537	**Casing approval received from FDEP to set intermediate casing to 1,530 feet bls.**
1800	**YBI at 904 feet bls. Drilling has stopped to change the rubbers on the header and empty the slurry pit.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**
2003	**Raining hard.**
2100	**YBI at still working on the rubbers. Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/3/05 2100 – 3/4/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 – 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X	X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**56**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 904 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 949 ft bls
ACTIVITY: Reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site. Reaming pilot hole.**
2400	**Depth @ 918 ft bls, 5-8K lbs WOB, 15 minute/foot.**
0330	**Depth @ 928 ft bls, 5-8K lbs WOB, 15 minute/foot.**
0630	**Depth @ 940 ft bls, 5-8K lbs WOB, 15 minute/foot.**
0700	**YBI shift change from Dan Murphy to Mark Devine.**
0845	**Depth @ 940 ft bls, 5-8K lbs WOB, 7 minute/foot.**
0900	**Hugh Klein onsite. Richard Walther offsite. No safety issues.**

Week 5

(03-04)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/4/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**57**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 949 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 990 ft bls
ACTIVITY: Reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. Site safety discussed along with the minimal storage left in the slurry pit. RW off site.**
0908	**YBI is at 951 feet bls, and the slurry pit is very near total storage capacity.**
0948	**A tanker from YBI is on site to haul fluid from the slurry pit.**
1003	**Jimmy Lynch Trucking is on site to haul material from the slurry pit.**
1020	**YBI tanker and Jimmy Lynch Trucking off site.**
1038	**YBI at 961 feet bls with 5,000 to 15,000 pounds WOB and a penetration rate of approximately 5 minutes per foot. The cuttings from the reamed hole correlate well with the samples from the pilot hole. There is also a great deal of cement in the cuttings from the reamed hole.**
1119	**YBI tanker and Jimmy Lynch Trucking on site to haul material from the slurry pit.**
1145	**YBI tanker and Jimmy Lynch Trucking off site.**
1208	**The penetrated depth is 961 feet bls, and YBI is drilling with 5,000 to 15,000 pounds WOB. The penetration rate is approximately 5 minutes per foot. The.**
1231	**YBI tanker and Jimmy Lynch Trucking back on site to haul material from the slurry pit.**
1325	**Jimmy Lynch Trucking off site.**
1358	**YBI tanker on site to haul fluid from the slurry pit.**
1406	**YBI tanker off site.**

1459 **Another YBI tanker on site to haul fluid from the slurry pit. YBI drilling at 975 feet bls with 20,000 pounds WOB.**
1510 **Jimmy Lynch Trucking on site.**
1528 **YBI tanker and Jimmy Lynch Trucking off site.**
1608 **Jimmy Lynch Trucking back on site.**
1621 **Jimmy Lynch Trucking off site.**
1700 **KD at 982 feet bls. YBI will run a deviation survey at 980 feet bls before making the connection.**
1900 **Dan Murphy and crew relieving Mark Devine and crew. Penetrated depth is 958 feet bls.**
2016 **The penetrated depth is 988 feet bls. YBI is presently drilling with 15,000 pounds WOB.**
2100 **Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/4/05 2100 – 3/5/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**58**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 990 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,012 ft bls
ACTIVITY: Reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**
2345	**Depth @ 996 ft bls. 15 – 20 K lbs WOB. 30 – 40 min/foot penetration rate. Cement present in cuttings.**
0315	**Depth @ 1,002 ft bls. 15 – 20 K lbs WOB. 30 – 40 min/foot penetration rate. Cement present in cuttings.**
0700	**YBI shift change from Dan Murphy to Mark Devine.**
0735	**Tanker truck onsite and Jimmy Lynch trucking onsite to empty slurry pit.**
0830	**Tanker truck and Jimmy Lynch trucking offsite.**
0845	**Depth @ 1,012 ft bls.**
0900	**Hugh Klein onsite. Richard Walther offsite. No safety issues.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/5/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**59**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,012 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 1,148 ft bls
ACTIVITY: Drilling/reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Richard Walther. No safety issues to be discussed . RW off site.
0913	YBI at 1,013 feet bls with 15,000 to 20,000 pounds WOB with hard drilling conditions. Borehole cuttings correlate well with the samples from the pilot hole. The sample is predominantly cement.
0948	Jimmy Lynch Trucking on site picking up a load of material from the slurry pit.
1033	YBI at 1,035 feet bls with 10,000 to 15,000 pounds WOB and a penetration rate of 2 to 4 minutes per foot.
1057	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.
1115	Checking mill certifications on the 30-inch casing.
1222	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.
1225	KD at 1,062 feet bls. YBI will run a deviation survey at 1,060 feet bls before making the connection.
1301	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.
1418	YBI at 1,078 feet bls with 20,000 pounds WOB and a penetration rate of approximately 2 minutes per foot.
1645	YBI at 1,120 feet bls with 15,000 to 20,000 pounds WOB and a penetration rate of approximately 2 minutes per foot.

1801 KD at 1,142 feet bls. YBI will run a deviation survey at 1,140 feet bls before making the connection.

1900 Dan Murphy and crew relieving Mark Devine and crew.

2032 YBI at 1,148 feet bls in hard material. The WOB is 20,000 to 25,000 pounds and the penetration rate is approximately 50 minutes per foot. Borehole cuttings correlate well with the samples from the pilot hole.

2100 Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/5/05 2100 – 3/6/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**60**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1,148 ft bls
DRILLER: Dan Murphy; Richard Martinez
END DEPTH: 1,173 ft bls
ACTIVITY: Drilling/reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**
2305	**Depth @ 1,155 ft bls. 20K lbs WOB; 30 min/ft penetration rate. Cement present.**
0200	**Depth @ 1,161 ft bls. 20K lbs WOB; 8 min/ft penetration rate. Cement present.**
0430	**Depth @ 1,169 ft bls. 20K lbs WOB; 40 min/ft penetration rate. Cement present.**
0700	**YBI shift change from Dan Murphy to Richard Martinez. Servicing Rig. Depth @ 1,173 ft bls.**
0830	**Jimmy Lynch trucking onsite.**
0900	**Hugh Klein onsite relieving Richard Walther. No safety issues.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/6/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**61**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,173 ft bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 1,242 ft bls
ACTIVITY: Drilling/reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Richard Walther. RW off site. YBI at 1,173 feet bls, with 25,000 pounds WOB, drilling in very hard material.**
0941	**Jimmy Lynch Trucking on site picking up a load of material from the slurry pit.**
1028	**YBI at 1,174 feet bls with 25,000 pounds WOB. Borehole cuttings compare well with the samples from the pilot hole.**
1228	**Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.**
1251	**Drilling at 1,177 feet bls with 25,000 to 30,000 pounds WOB and a penetration rate of approximately 50 minutes per foot. Borehole cuttings compare well with the samples from the pilot hole.**
1453	**The penetrated depth is 1,187 feet bls. At 1,179 feet bls, YBI began drilling softer material, and the penetration rate has been about 5 minutes per foot.**
1730	**KD at 1,222 feet bls. YBI will run a deviation survey before making the connection.**
1900	**Dan Murphy and crew relieving Richard Martinez and crew.**
1929	**YBI is at 1,228 feet bls with approximately 20,000 pounds WOB. The current penetration rate is approximately 4 minutes per foot. The borehole cuttings compare well with the samples from pilot hole chip tray.**

2023 YBI is at approximately 1,242 feet bls and has stopped drilling to change the rubbers in the header.

2100 Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/6/05 2100 to 3/7/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 62**
		X		

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 1,242 ft bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 1,350 ft bls
ACTIVITY: Drilling/reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
2100	Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site. YBI at 1,242 feet bls. Weather: 62 degrees, mostly cloudy, 80% Humidity.
2200	YBI at 1,265 feet bls with 20,000 pounds WOB and penetration rate of 6 minutes per foot.
0100	YBI at 1,289 feet bls with 20,000 pounds WOB. Penetration rate is at 2 minutes per foot.
0115	YBI completes deviation survey and adds stand of drill pipe.
0140	YBI at 1,305 feet bls with 20,000 pounds WOB.
0250	YBI at 1,317 feet bls with 25,000 pounds WOB. Penetration rate is at 10 minutes per foot. The borehole cuttings compare well with the samples from pilot hole chip tray.
0330	YBI stopped drilling due to problems with fuel delivery to their generator.
0550	YBI resumes drilling/reaming for the intermediate casing. YBI is at 1,328 feet bls with 25,000 pounds WOB.
0637	Jimmy Lynch Trucking on site picking up load from slurry pit.
0700	Richard Martinez and crew on site relieving Dan Murphy and crew.
0845	YBI @ 1,350 ft. bls and 25,000 lbs WOB.
0900	Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/7/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**63**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,350 ft bls
DRILLER: Richard Martinez; Dan Murphy
END DEPTH: 1,467 ft bls
ACTIVITY: Drilling/reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Surveys.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site.
0914	Jimmy Lynch Trucking on site picking up a load of material from the slurry pit.
1028	YBI at 1,174 feet bls with 25,000 pounds WOB. Borehole cuttings compare well with the samples from the pilot hole.
0925	The penetrated depth is 1,362 feet bls. YBI is drilling with 30,000 pounds WOB, and the penetration rate is 3 to 4 minutes per foot. Cuttings from the borehole compare well with the samples from the pilot hole.
1025	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.
1115	KD at 1,381 feet bls. YBI will run a deviation survey before making the connection.
1143	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.
1158	The deviation survey at 1,380 feet bls has been completed by YBI.
1255	YBI at 1,394 feet bls.
1258	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.
1405	The penetrated depth is 1,411 feet bls with 30,000 pounds WOB, and the penetration rate is 2 to 3 minutes per foot.
1408	Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.

1522 **YBI is drilling at 1,432 feet bls with 30,000 pounds WOB, and the same penetration rate. Jamie Allen is behind the water tanks welding , and has been here since earlier today.**

1539 **Jimmy Lynch Trucking on site picking up another load of material from the slurry pit.**

1616 **All the casing to be used in the intermediate casing run has been matched with the mill certificates submitted previously by YBI.**

1701 **The penetrated depth is 1,450 feet bls. YBI is drilling with 30,000 pounds WOB, and the penetration rate is 4 to 6 minutes per foot. Cuttings from the borehole compare well with the samples from the pilot hole.**

1823 **KD at 1,461 feet bls.**

1845 **The deviation survey at 1,460 feet bls has been completed by YBI.**

1900 **Dan Murphy and crew relieving Richard Martinez and crew.**

1934 **YBI is currently drilling at 1,463 feet bls with 25,000 pounds WOB in hard material. A delivery of cement is currently being made.**

2036 **YBI at 1,466 feet bls.**

2100 **Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/7/05 2100 to 3/8/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**64**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 1,472 ft bls
DRILLER: Dan Murphy, Richard Martinez
END DEPTH: 1,535 ft bls
ACTIVITY: Drilling/reaming with a 38½-inch bit for the intermediate casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site. Weather: 68 degrees, partly cloudy, 59% Humidity.**
2200	**YBI at 1,472 feet bls with 25,000 pounds WOB. Penetration rate is at 10 minutes per foot.**
2230	**YBI at 1,477 feet bls with 20,000 pounds WOB. Penetration rate is at 10 minutes per foot.**
2300	**YBI at 1,480 feet bls with 25,000 pounds WOB. Penetration rate is at 10 minutes per foot.**
2340	**YBI at 1,484 feet bls with 25,000 pounds WOB. Penetration rate is at 10 minutes per foot.**
0100	**YBI at 1,492 feet bls with 25,000 pounds WOB. Penetration rate is at 10 minutes per foot. The borehole cuttings compare well with the samples from pilot hole chip tray.**
0215	**YBI at 1,502 feet bls with 20,000 pounds WOB. Penetration rate is at 6 minutes per foot.**
0345	**YBI at 1,514 feet bls with 20,000 pounds WOB. Penetration rate is at 10 minutes per foot.**
0515	**YBI at 1,526 feet bls with 10,000 pounds WOB. Penetration rate is at 6 minutes per foot.**
0620	**YBI reaches 1,535 feet bls.**
0700	**Richard Martinez and crew on site relieving Dan Murphy and crew.**
0715	**YBI preparing mud before running wiper trip(s).**
0811	**Jimmy Lynch Trucking on site picking up a load from slurry pit.**
0900	**Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.**

FORM NO. 01-01

Observer's Initials ZH

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/8/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 65**
		X		

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 1,535 ft bls
DRILLER: Dan Keeley Jr.; Mark Devine
END DEPTH: 1,535 ft bls
ACTIVITY: Preparing for the intermediate casing run.

SUB CONTRACTORS: YBI Geophysical Logging Division; Welders: Eddie Mac, Jamie Allen, Ron Nash, Richard Harris, Anthony Stewart, and Eddie Bankston.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. ZH off site. YBI is finishing preparing the kill for the wiper trip(s).**
0920	**YBI pulling the airline out of the borehole.**
0955	**YBI beginning to TOOH.**
1045	**Site trailer being cleaned by a cleaning service.**
1130	**YBI taking the cap off the header.**
1245	**YBI laying down the bit.**
1300	**Cement delivery being made.**
1305	**YBI Geophysical on site.**
1400	**Starting to run X - Y caliper log.**
1520	**Geophysical logging completed.**
1635	**Beginning intermediate casing run.**
1702	**Welding joint #2 to joint #1.**
1737	**Welding joint #3 to joint #2.**
1816	**Welding joint #4 to joint #3.**
1847	**Welding joint #5 to joint #4.**

1900 **Mark Devine and crew relieving Dan Keeley Jr. and crew.**
1925 **Welders are changing out.**
1936 **Welding joint #6 to joint #5.**
2007 **Welding joint #7 to joint #6.**
2037 **Welding joint #8 to joint #7.**
2100 **Zach Herrington on site relieving Hugh Klein. Safety issues discussed with particular emphasis on eye protection during welding. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/8/05 2100 to 3/9/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**66**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 1,535 ft bls
DRILLER: Mark Devine, Dan Keeley Jr.
END DEPTH: 1,535 ft bls
ACTIVITY: Intermediate casing run.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed with an emphasis on eye protection. HK off site. Weather: 62 degrees, partly cloudy, 72% Humidity.**
2114	**Finished welding joint # 9 to # 8.**
2141	**Finished welding joint # 10 to # 9.**
2210	**Finished welding joint # 11 to # 10.**
2232	**Finished welding joint # 12 to # 11.**
2300	**Finished welding joint # 13 to # 12.**
2327	**Finished welding joint # 14 to # 13.**
2355	**Finished welding joint # 15 to # 14.**
0025	**Finished welding joint # 16 to # 15.**
0057	**Finished welding joint # 17 to # 16.**
0130	**Finished welding joint # 18 to # 17.**
0207	**Finished welding joint # 19 to # 18.**
0247	**Finished welding joint # 20 to # 19.**
0308	**Finished welding joint # 21 to # 20.**
0337	**Finished welding joint # 22 to # 21.**
0405	**Finished welding joint # 23 to # 22.**

0504 **Finished welding joint # 24 to # 23.**
0505 **Heavy rain. YBI temporarily ceasing running casing. YBI is unloading mud to kill well with.**
0700 **Dan Keeley Jr. and crew relieving Mark Devine and crew.**
0740 **Finished welding joint # 25 to # 24.**
0900 **Alejandra Simon on site relieving Zach Herrington. Safety issues discussed. ZH off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/9/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**67**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,535 ft bls
DRILLER: Dan Keeley Jr.; Mark Devine
END DEPTH: 1,535 ft bls
ACTIVITY: 30-inch intermediate casing run.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Zach Herrington. ZH off site. Running of the intermediate casing was suspended due to rain.**
1900	**Mark Devine and crew relieving Dan Keeley Jr. and crew. Continues to rain.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/9/05 2100 to 3/10/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 68**
			X	

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,535 ft bls
DRILLER: Mark Devine, Dan Keeley Jr.
END DEPTH: 1,535 ft bls
ACTIVITY: Intermediate casing run.

SUB CONTRACTORS: Welders: Eddie Mac, Jamie Allen, Ron Nash, Richard Harris, Anthony Stewart, Eddie Bankston
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off site. Welding casing currently suspended due to rain.**
0700	**YBI shift change. Dan Keeley Jr. and crew on-site. Mark Devine and crew off-site. Welding operations restarted.**
0726	**Finished welding joint # 26 to # 25.**
0742	**Finished welding joint # 27 to # 26.**
0808	**Finished welding joint # 28 to # 27.**
0834	**Finished welding joint # 29 to # 28.**
0900	**Finished welding joint # 30 to # 29.**
0900	**Alejandra Simon on-site replacing Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/10/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**69**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,535 ft bls
DRILLER: Dan Keeley Jr.; Mark Devine
END DEPTH: 1,535 ft bls
ACTIVITY: 30-inch intermediate casing run and cementing.

SUB CONTRACTORS: Welders: Eddie Mac, Jamie Allen, Ron Nash, Richard Harris, Anthony Stewart, Eddie Bankston. Florida Cementing- Josh Brown.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. GY off site. Running of the intermediate casing continues.**
1300	**Welding last joint.**
1715	**Tripping in the borehole with tremie tubing.**
1830	**Pad monitoring well sampling.**
1900	**Mark Devine and crew relieving Dan Keeley Jr. and crew.**
1930	**Cementing operation started. Stage 1 : 12% gel and neat cement pressure grouted into the annulus of the 30-inch intermediate casing.**
2100	**Stage 1 continues. Greg Young replacing Alejandra Simon. AS off site.**

FORM NO. 01-01

Observer's Initials AS

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/10/05 2100 to 3/11/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**70**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,535 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 1,535 ft bls
ACTIVITY: Cementing Intermediate Casing

SUB CONTRACTORS: YBI Geophysical (Clay Ferguson)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Temperature Log

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off site. Cementing of Intermediate casing continues.**
2206	**Intermediate casing cementing – Stage I – complete.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.**
0700	**Clay Ferguson (YBI Geophysical) on-site for Temperature Log.**
0815	**Temperature Log complete. Clay Ferguson off-site.**
0900	**Alejandra Simon on-site replacing Greg Young. GY off-site.**

Week 6

(03-11)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/11/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**71**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,535 ft bls
DRILLER: Dan Murphy.; Mark Devine
END DEPTH: 1,535 ft bls
ACTIVITY: 30-inch intermediate casing cementing.

SUB CONTRACTORS: Welders: Jamie Allen. Florida Cementing- Josh Brown.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. GY off site. Preparing for second stage of cement.**
1130	**TIH with tremie tubing.**
1215	**Tanker on site, emptying slurry pit. Josh Brown- Florida Cementing on site.**
1245	**Physical tag at 838 feet bls.**
1310	**Start cementing operations.**
1456	**End stage 2 of cement. Cara Rothfuss on site briefly.**
1500	**Cement truck filling up silo.**
1900	**Mark Devine and crew replacing Dan Murphy and crew.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/11/05 2100 to 3/12/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**72**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,535 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 1,535 ft bls
ACTIVITY: Cementing Intermediate Casing

SUB CONTRACTORS: YBI Geophysical (Clay Ferguson), Florida Cementing (Josh Brown), Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Temperature Log

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off site**
2200	**Clay Ferguson (YBI Geophysical) on-site for Temperature Log.**
2235	**Temperature Log complete. CF off-site. Josh Brown (Florida Cementing) on-site.**
2355	**Stage 3 cementing begins.**
0114	**Stage 3 cementing complete.**
0135	**Josh Brown off-site.**
0700	**YBI Shift change. Dan Murphy and crew replacing Mark Devine and crew.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/12/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**73**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,535 ft bls
DRILLER: Dan Murphy.; Mark Devine
END DEPTH: 1,535 ft bls
ACTIVITY: Preparing for pilot hole drilling.

SUB CONTRACTORS: Welders: Jamie Allen.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. GY off site.**
1400	**Top of cement was physically tagged at 6.5 feet bls. YBI will make preparations to commence the drilling of a 12 ¼-inch pilot hole to approximately 3000 feet bls.**
1900	**Mark Devine and crew replacing Dan Murphy and crew.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

FORM NO. 01-01

Observer's Initials AS

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/12/05 2100 to 3/13/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**74**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,535 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 1,535 ft bls
ACTIVITY: Prep for Reverse Air Drilling

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off site**
0000	**TIH with BHA begins.**
0300	**TIH to 1520 feet bls complete.**
0400	**YBI finishes preparing Mud Pits and readys Kill.**
0700	**YBI Shift change. Dan Murphy and crew replacing Mark Devine and crew.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/13/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
x						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**75**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,525 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 1,695 ft bls
ACTIVITY: 12 ¼-inch pilot hole drilling.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. GY off site. Site safety discussed. YBI circulating and cleaning borehole before drilling.**
1030	**Drilling from 1525 feet bls- top of cement.**
1100	**Circulating at 1535 feet bls.**
1245	**Depth is 1586 feet bls. Drilling with 5,000 lbs on bit and a penetration rate of 2 minutes per foot.**
1326	**KD at 1600 feet bls. Taking deviation survey.**
1520	**Depth is 1626 feet bls. Drilling with 15,000 lbs on bit and a penetration rate of 4 minutes per foot.**
1655	**Depth is 1655 feet bls. Drilling has been constant for the last 120 feet, at an average of 4 minutes per foot. 15,000 to 20,000 lbs on bit.**
1755	**Depth is 1673 feet bls. Drilling with 15,000 lbs on bit.**
1830	**KD at 1680 feet bls. Taking deviation survey.**
1900	**YBI shift change. Dan Murphy and crew being replaced by Bob Didon and crew.**
2020	**Depth is 1691 feet bls. Drilling with 10,000 lbs on bit, 4-6 minutes per foot.**
2100	**Greg Young on site. Alejandra Simon off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/13/05 2100 to 3/14/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**76**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,695 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 1,722 ft bls
ACTIVITY: Reverse Air 12 ¼' Pilot Hole Drilling

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Survey

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off site Pilot Hole Drilling continues. Current depth 1695 feet bls.**
2127	**1703 feet bls, 10K WOB, 30 rpm, 5 min/ft**
2235	**1710 feet bls, 5K WOB, 17 rpm, 6 min/ft**
2334	**1719 feet bls, 12K WOB, 32 rpm, 7 min/ft**
0046	**1727 feet bls, 9K WOB, 36 rpm, 6 min/ft**
0204	**1743 feet bls, 10K WOB, 35 rpm, 6 min/ft**
0255	**1751 feet bls, 10K WOB, 33 rpm, 5 min/ft**
0404	**Kelly Down. Deviation survey - 0.5º**
0630	**1768 feet bls, 10K WOB, 35 rpm, 6 min/ft**
0700	**YBI Shift change. Dan Murphy and crew replacing Bob Didon and crew.**
0830	**1772 feet bls, 18K WOB, 32 rpm, 16 min/ft**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/14/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**77**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,722 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 1,880 ft bls
ACTIVITY: 12 ¼-inch pilot hole drilling.

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field samples every 40. Lab samples collected every 80 feet.
TESTING: Deviation survey and specific capacity testing.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. GY off site. Site safety discussed.**
1010	**Depth is 1781 feet bls. Drilling with 15,000 lbs on bit and a penetration rate of 6 minutes per foot.**
1430	**Penetration increased to 8- 10 minutes per foot.**
1620	**Depth is 1837 feet bls. Drilling with 5,000 to 10,000 lbs on bit and a penetration rate of 8-10 minutes per foot.**
1700	**KD at 1840 feet bls. Deviation survey and specific capacity test performed.**
1750	**Making connection**
1800	**Resume drilling from 1840 feet bls.**
1830	**Depth is 1848 feet bls. Drilling with 15,000 lbs on bit and a penetration rate of 6 minutes per foot. Cuttings: soft limestone.**
1900	**YBI shift change. Dan Murphy and crew being replaced by Bob Didon and crew.**
1935	**Depth is 1865 feet bls. Drilling with 20,000 lbs on bit and a penetration rate of 2 minutes per foot.**
2040	**Depth is 1878 feet bls. Drilling with 20,000 lbs on bit and a penetration rate of 2 to 4 minutes per foot.**
2100	**Greg Young on site. Alejandra Simon off site. Penetrated depth is 1,880 feet bls.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/14/05 2100 to 3/15/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**78**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1880 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 1964 ft bls
ACTIVITY: Reverse Air 12 ¼' Pilot Hole Drilling

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field Water Quality every 40 feet and Lab Samples every 80 feet.
TESTING: Specific Capacity, Deviation Survey

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off site Pilot Hole Drilling continues. Current depth 1878 feet bls.**
2137	**1895 feet bls, 20K WOB, 2 min/ft**
2205	**1905 feet bls, 20K WOB, 2 min/ft**
2235	**1915 feet bls, 20K WOB, 5 min/ft**
2255	**Kelly Down @ 1920 feet bls. Deviation survey - 0.4º, Specific Capacity Test performed, Field and Lab WQ**
0146	**1933 feet bls, 20K WOB, 2 min/ft**
0225	**1944 feet bls, 20K WOB, 2 min/ft**
0327	**1960 feet bls, 20K WOB, 2 min/ft, Field WQ**
0413	**1964 feet bls, 20K WOB, 10min/ft, Core Sample Ordered. YBI circulating to remove cuttings.**
0500	**TOOH begins.**
0700	**TOOH ends. YBI Shift change. Dan Murphy and crew replacing Bob Didon and crew.**
0800	**YBI preparing to add core barrel.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/15/05 0900 - 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**79**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,964 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 1,964 ft bls
ACTIVITY: Core #3 from 1964 feet bls to 1979 feet bls.

SUB CONTRACTORS: None
FORMATION SAMPLES: Core sample.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Greg Young. GY off site. Site safety discussed. YBI continues to TIH with the core barrel.**
1530	**Start coring from 1964 feet bls.**
1900	**YBI shift change. Dan Murphy and crew being replaced by Bob Didon and crew. Core depth is 1969 feet bls.**
2000	**Core depth is 1972 feet bls.**
2100	**Greg Young on site. Alejandra Simon off site.**

FORM NO. 01-01

Observer's Initials **AS**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/16/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 81**
			X	

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 1964 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 2020 ft bls
ACTIVITY: Drilling of 12 ¼ "pilot hole for final casing and preparation for Core #4

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field Water Quality (temp, pH, Specific Conductivity, TDS, Chloride), and Specific Capacity
TESTING: Deviation Survey

TIME	DESCRIPTION
0900	Zach Herrington on site relieving Greg Young. Greg Young off site.
1110	YBI at 1,997 ft bls with 15,000-20,000 lbs WOB. Penetration rate at 1-2 minutes per foot.
1126	YBI at 2,000 ft bls with 20,000 lbs WOB. Water quality sample collected.
1130	Water Quality Field Test performed.
1150	Specific Capacity Test performed.
1300	YBI completes Deviation Survey.
1340	YBI at 2,014 ft bls with 20,000 lb WOB. Penetration rate is at 2 minutes per foot.
1410	Core selected by MWH at 2,020 feet bls.
1430	YBI starts to TOOH.
1643	YBI continues TOOH.
1735	YBI starts TIH with core barrel.
1900	YBI continues TIH. Bob Didon and crew relieving Mark Devine and crew.
2030	YBI completes TIH.
2035	YBI begins to core.
2100	Hugh Klein on site relieving Zach Herrington. Zach Herrington off-site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/16/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 81**
			X	

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 1964 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 2020 ft bls
ACTIVITY: Drilling of 12 ¼ "pilot hole for final casing and preparation for Core #4

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field Water Quality (temp, pH, Specific Conductivity, TDS, Chloride), and Specific Capacity
TESTING: Deviation Survey

TIME	DESCRIPTION
0900	Zach Herrington on site relieving Greg Young. Greg Young off site.
1110	YBI at 1,997 ft bls with 15,000-20,000 lbs WOB. Penetration rate at 1-2 minutes per foot.
1126	YBI at 2,000 ft bls with 20,000 lbs WOB. Water quality sample collected.
1130	Water Quality Field Test performed.
1150	Specific Capacity Test performed.
1300	YBI completes Deviation Survey.
1340	YBI at 2,014 ft bls with 20,000 lb WOB. Penetration rate is at 2 minutes per foot.
1410	Core selected by MWH at 2,020 feet bls.
1430	YBI starts to TOOH.
1643	YBI continues TOOH.
1735	YBI starts TIH with core barrel.
1900	YBI continues TIH. Bob Didon and crew relieving Mark Devine and crew.
2030	YBI completes TIH.
2035	YBI begins to core.
2100	Hugh Klein on site relieving Zach Herrington. Zach Herrington off-site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/16/05 2100 to 3/17/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**82**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,020 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,035 ft bls
ACTIVITY: Coring and pilot hole drilling for the final casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Core sample from 2,020 to 2,036 feet bls.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. YBI is coring from 2,020 feet bls.**
2340	**YBI will core an extra foot because of the increase in the time required to drill the fourteenth foot of the core.**
2351	**Finished with core #3.**
0003	**YBI TOOH with the core barrel.**
0330	**The core barrel is out f the hole, and YBI is unloading it.**
0400	**Approximately 68% of core 4 was retrieved.**
0430	**YBI TIH with the 12-inch bit too resume pilot hole drilling.**
1900	**Mark Devine and crew relieving Bob Didon and crew.**
0725	**YBI running airline in the hole.**
0835	**YBI at 2,030 feet bls with 20,000 pounds WOB and a pen rate of 1 to 2min/ft.**
0900	**Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.**

FORM NO. 01-01

Observer's Initials HK

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/17/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
				X
Temperature	32 - 50	50 – 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**83**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 2035 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 2175 ft bls
ACTIVITY: Drilling of 12 ¼ "pilot hole for final casing

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field Water Quality (temp, pH, Specific Conductivity, TDS, Chloride), Specific Capacity, and Pad Monitor Well Water Quality
TESTING: Deviation Survey

TIME	DESCRIPTION
0900	**Zach Herrington on site relieving Hugh Klein. Hugh Klein off site.**
0927	**Field Water Quality sample collected for 2,040 feet bls.**
0935	**YBI is at 2,044 feet bls with 20,000 lbs WOB, 40 rpm, and a penetration rate of 2 minutes per foot.**
1000	**Pad Monitor Wells static water levels taken.**
1028	**YBI is at 2,065 feet bls with 20,000 lbs WOB and a penetration rate of 4 minutes per foot.**
1100	**YBI is at 2,077 feet bls with 20,000 lbs WOB and a penetration rate of 2 minutes per foot.**
1120	**Field Water Quality sample collected for 2,080 feet bls.**
1146	**Specific Capacity Test performed.**
1247	**YBI is at 2,092 feet bls with 20,000 lbs WOB and a penetration rate of ~ 2-4 minutes per foot.**
1300	**Extreme rain continues to pour on site.**
1317	**Drilling shut down due to lightning.**
1425	**Drilling resumes. YBI is at 2,106 feet bls with 15,000-20,000 lbs WOB and a penetration rate of 4 minutes per foot.**
1525	**YBI is at 2,175 feet bls with 20,000 lbs WOB and a penetration rate of 2 minutes per foot.**
1549	**Field Water Quality sample collected for 2,120 feet bls.**

RM NO. 01-01

Observer's Initials ZH

1640 **YBI is at 2,137 feet bls with 20,000 lbs WOB and a penetration rate of 4 minutes per foot.**
1755 **Field Water Quality sample collected for 2,160 feet bls.**
1840 **Specific Capacity Test performed.**
1900 **Bob Didon and crew relieving Mark Devine and crew.**
1955 **YBI is at 2,163 feet bls with 20,000 lbs WOB and a penetration rate of 4 minutes per foot. There is a large amount of bit chatter.**
2030 **YBI is at 2,171 feet bls with 10,000-15,000 lbs WOB.**
2041 **YBI is at 2,175 feet bls with 10,000-15,000 lbs WOB and a penetration rate of 2 minutes per foot.**
2100 **Hugh Klein on site relieving Zach Herrington. Zach Herrington off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/17/05 2100 to 3/18/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**84**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,175 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,251 ft bls
ACTIVITY: Pilot hole drilling for the final casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Formation samples every 10 feet.
WATER SAMPLES: Drill stem water quality analysis every 40 feet with lab samples taken every 80 feet.
TESTING: Deviation surveys.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site.**
2111	**The penetrated depth is 2,180 feet bls.**
2232	**The penetrated depth is 2,190 feet bls with 15,000 pounds WOB and the present penetration rate is approximately 1 to 2 feet per minute.**
2300	**The penetrated depth is 2,180 feet bls, and a water sample is being taken from the dissipater for field analysis.**
0000	**YBI drilling at 2,209 feet bls with 10,000 pounds WOB.**
0242	**The current penetrated depth is 2,231 feet bls with 10,000 to 15,000 pounds WOB with a penetration rate varying from approximately 1 minute per foot to 10 minutes per foot. Presently drilling in fractured rock.**
0359	**KD at 2,241 feet bls. A specific capacity test will be conducted and a deviation survey**
0454	**Specific capacity test completed and a water sample is being taken from the dissipater for field and laboratory analysis. Lab sample is 3OaksIW-2240.**
0600	**YBI drilling at 2,245 feet bls with 15,000 pounds WOB and a penetration rate of approximately 5 minutes per foot.**
0700	**Mark Devine and crew relieving Bob Didon and crew.**
0812	**Core point selected at 2,251 feet bls.**

FORM NO. 01-01

Observer's Initials HK

2100 Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.

Week 7

(03-18)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/18/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 – 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 85**
		X		

SHIFT SUMMARY

OBSERVER: Zach Herrington
DRILLER: Mark Devine, Dan Murphy
ACTIVITY: Preparation for Core #5

START DEPTH: 2,251 ft bls
END DEPTH: 2,251 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.
0930	YBI begins to TOOH.
1140	YBI adding mud to kill well before drill collars are lifted out of hole.
1145	YBI begins lifting drill collars out of hole.
1200	TOOH complete.
1223	YBI begins to TIH with core barrel.
1300	YBI continues to TIH.
1330	Sanders Laboratory Inc. on site to pick up Water Quality Samples.
1350	Evans Oil on site delivering fuel to YBI.
1400	YBI continues TIH.
1420	YBI unable to lower core barrel any further. YBI is hitting something hard at approximately 2,240 ft bls.
1430	YBI begins TOOH in order to put drill bit back on.
1605	YBI completes TOOH.
1615	YBI begins TIH with 121/4" bit.
1738	YBI continues to TIH with 5 joints remaining to be tripped in.
1817	Drill pipe in hole. YBI begins tripping in air line.

1900 **Dan Murphy and crew relieving Mark Devine and crew. YBI performing maintenance on rig.**
1930 **YBI begins drilling to break through where core barrel couldn't pass at approximately 2,240 ft bls. There is approximately 5,000-10,000 lbs WOB.**
2100 **Hugh Klein on site relieving Zach Herrington. Zach Herrington off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/18/05 2100 to 3/19/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**86**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,251 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,251 ft bls
ACTIVITY: Preparing to core (core 5: 2,251 to 2,266 ft bls).

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. YBI is redrilling the interval where the core barrel would not pass through.**
2145	**YBI is putting STD 28 back on to continue redrilling from 2,240 feet bls.**
2300	**The redrilling of the borehole is complete. YBI will short trip up into the casing and then trip to the bottom of the hole and circulate clean before TOOH.**
0245	**YBI is finished circulating the borehole clean, and will TOOH now.**
0513	**YBI completed TOOH and will change bits.**
0612	**Beginning TIH to core.**
0628	**Replacing a belt on the rig's air compressor.**
0700	**Mark Devine and crew relieving Dan Murphy and crew.**
0835	**YBI has the BHA, 27 STDs, and a 40-foot joint in the hole. Preparing to add a 10-footer.**
0900	**Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/19/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 – 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**87**

SHIFT SUMMARY

OBSERVER: Zach Herrington
DRILLER: Mark Devine, Dan Murphy
ACTIVITY: Coring Core #5

START DEPTH: 2,251 ft bls
END DEPTH: 2,251 ft bls

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: Core sample is starting at 2,251 ft bls.
WATER SAMPLES: None.

TESTING: None.

TIME	DESCRIPTION
0900	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**
0951	**YBI starts Core #5 at 2,251 ft bls.**
1051	**YBI cores to 2,252 ft bls.**
1158	**YBI cores to 2,253 ft bls.**
1257	**YBI cores to 2,254 ft bls.**
1356	**YBI cores to 2,255 ft bls.**
1526	**YBI cores to 2,256 ft bls.**
1635	**YBI cores to 2,257 ft bls.**
1820	**YBI cores to 2,258 ft bls.**
2011	**YBI cores to 2,259 ft bls.**
2100	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. Zach Herrington off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/19/05 2100 to 3/20/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**88**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,251 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,251 ft bls
ACTIVITY: Coring

SUB CONTRACTORS: None.
FORMATION SAMPLES: Core sample from 2,251 feet bls.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. YBI is coring the 9th foot of core 5.**
2110	**Core drilling has penetrated to 2,260 feet bls (9 feet of coring).**
2209	**Core drilling has penetrated to 2,261 feet bls (10 feet of coring).**
2348	**Core drilling has penetrated to 2,262 feet bls (11 feet of coring).**
0045	**Core drilling has penetrated to 2,263 feet bls (12 feet of coring).**
0151	**Core drilling has penetrated to 2,264 feet bls (13 feet of coring).**
0259	**Core drilling has penetrated to 2,265 feet bls (14 feet of coring). End of core 5.**
0325	**YBI killing the well.**
0404	**YBI starting to TOOH with the core.**
0615	**YBI finished TOOH.**
0650	**The core has been removed from the core barrel. Approximately 4.8 feet recovered (34%).**
0700	**Mark Devine and crew relieving Dan Murphy and crew.**
0800	**YBI TIH to resume pilot hole drilling.**
0900	**Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/20/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 – 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 89**
		X		

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 2,251 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,320 ft bls
ACTIVITY: Drilling with 12 ¼" bit.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Drill stem water quality analysis every 40 feet with lab samples taken every 80 feet.
TESTING: Deviation surveys.

TIME	DESCRIPTION
0900	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**
0915	**YBI continues to TIH with 12 ¼" drill bit.**
0957	**YBI completes install of new rubbers.**
1010	**YBI begins TIH with air line.**
1040	**YBI begins drilling 12 ¼" drill bit at 2,251 ft bls.**
1104	**YBI at 2,253 ft bls. 5,000-10,000 lbs WOB. Penetration rate at 12 minutes per foot.**
1210	**YBI at 2,265 ft bls. Drilling has penetrated past the point that Core #5 stopped. 20,000 lbs WOB.**
1300	**YBI at 2,268 ft bls.**
1410	**YBI at 2,276 ft bls. 20,000-25,000 lbs WOB. Bit is moving and vibrating more than previous 5 feet. It appears that the formation is changing. Penetration rate is 12 minutes per foot.**
1515	**Field Water Quality Test performed for 2,280 ft bls.**
1550	**YBI is at 2,288 ft bls with 20,000 lbs WOB. The penetration rate is 6 minutes per foot.**
1650	**YBI is at 2,299 ft bls with 20,000 lbs WOB. The penetration rate is 6 minutes per foot.**
1744	**YBI is at 2,306 ft bls with 20,000 lbs WOB. The penetration rate is 6 minutes per foot**
1810	**YBI is at 2,306 ft bls with 5,000-10,000 lbs WOB. The penetration rate has decreased the last 2 feet to 2 minutes per foot. It appears that fractured material is being encountered.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**

1912 **YBI performing wiper trip.**
2000 **YBI completes wiper trip.**
2041 **Performing Specific Capacity Test for 2,330 ft bls.**
2100 **Hugh Klein on site relieving Zach Herrington. Site safety discussed. Zach Herrington off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/20/05 2100 to 3/21/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**90**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,320 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,325 ft bls
ACTIVITY: Preparing to core (core #6).

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: Drill stem water sample for field and laboratory analysis.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. YBI is at 2,320 feet bls.**
2118	**Deviation survey performed at 2,320 feet bls.**
2128	**A water sample is being taken from the dissipater for field and laboratory analysis. Lab sample is ThreeOaksIW-2320.**
2148	**Drilling at 2,323 feet bls with smooth drilling conditions.**
2215	**The drilling conditions remain smooth. Core point selected at 2,325 feet bls for core #6.**
2245	**YBI TOOH to put core barrel on for coring.**
0245	**YBI finished TOOH.**
0320	**YBI TIH with the core barrel.**
0405	**Alerted by Dan Murphy that the tank just east of the drill pad was leaking. After making some phone calls, Jerry Johnson informed me that with all the rain the area has had lately, the plant is running low on storage room for water. He went on to note that the flow to the tank was not switched over before the tank overtopped. Mark Chandler was also informed of these events**
0610	**The rig is shut down because the belt on the alternator and the fan belt are broken. YBI is currently in the process of acquiring new belts.**
0700	**Bob Didon and crew relieving Dan Murphy and crew.**

0900 Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/21/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**91**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 2,325 ft bls
DRILLER: Dan Murphy; Bobby Didon
END DEPTH: 2,325 ft bls
ACTIVITY: Core #6 (2,325 to 2,340 ft bls).

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: Coring.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**
0925	**Offsite to deliver lab sample to Sanders.**
0950	**Back from lab.**
1100	**YBI done servicing rig, TIH for Core #6.**
1222	**Begin core#6 @ 2,325 ft bls.**
1232	**Stopped coring abruptly; power switch inadvertently hit.**
1235	**Restart coring.**
1625	**Pump hose split and leaking water.**
1635	**Pump hose changed out.**
1900	**Dan Murphy and crew relieving Bobby Didon and crew.**
2045	**Done core #6 @ 2,340 ft bls..**
2100	**Hugh Klein on site relieving Richard Walther. Safety issues discussed. RAW off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/21/05 2100 to 3/22/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**92**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,325 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,336 ft bls
ACTIVITY: Finishing core #6 activities and pilot hole drilling.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: Formation samples every 10 feet.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Richard Walther. Site safety discussed. RW off site. YBI TOOH with core 6.**
0117	**The core has been taken out of the core barrel. Approximately 7.9 feet of core was recovered, which is ~53%.**
0210	**YBI beginning to TIH for pilot hole drilling.**
0410	**The rig is down while due to problems with the belts.**
0445	**The belts have been fixed, and the rig is running again.**
0523	**The rig is down while the transmission filters are being changed.**
0700	**Bob Didon and crew relieving Dan Murphy and crew. YBI is currently running the airline in the borehole.**
0800	**YBI drilling a 12¼-inch pilot hole from 2,325 feet bls.**
0830	**The penetrated depth is 2,328 feet bls with 10,000 to 15,000 pounds WOB.**
0800	**YBI drilling at 2,335 feet bls with 10,000 to 15,000 pounds WOB in fractured rock with a penetration rate of approximately 3 minutes per foot.**
0900	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/22/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**93**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 2,336 ft bls
DRILLER: Bobby Didon; Dan Murphy
END DEPTH: 2,393 ft bls
ACTIVITY: Pilot hole drilling with 12 ¼-inch bit; TOOH for Core #7 (2,393 to 2,408 ft bls)

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: Lithology samples every 10 feet.
WATER SAMPLES: Field water quality sample.
TESTING: None.

TIME	DESCRIPTION
0900	**Richard Walther on site relieving Hugh Klein. Safety issues discussed. HK off site.**
1015	**Depth @ 2,342.5 ft bls; 15-25k WOB; penetration rate of 10min/ft. Fractured formation. Cleaning ladies onsite**
1050	**Cleaning ladies offsite.**
1120	**Depth @ 2,360 ft bls; 10-25k WOB. Field water quality sample taken.**
1400	**Depth @ 2,393 ft bls. Core depth selected. Circulating.**
1700	**TOOH with 12 ¼-inch bit.**
1900	**YBI shift change from Bob Didon and crew to Dan Murphy and crew. Servicing Rig.**
2100	**Hugh Klein on site relieving Richard Walther. Safety issues discussed. RAW off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/22/05 2100 to 3/23/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**94**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,393 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,393 ft bls
ACTIVITY: TOOH for Core #7 (2,393 to 2,408 ft bls)

SUB CONTRACTORS: None.
FORMATION SAMPLES: Core sample being taken from 2,393 ft bls.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Richard Walther. Site safety discussed. RW off site. YBI is cleaning the borehole before TOOH.**
2305	**YBI is finished cleaning the borehole and starting to TOOH to put the core barrel on for core #7.**
0340	**The 12¼-inch bit has been TOOH.**
0458	**YBI TIH with the coring tools.**
0645	**Making the last connection for the drill string to be used for coring.**
0700	**Bob Didon and crew relieving Dan Murphy and crew. YBI servicing the rig.**
0740	**Coring started at 2,393 feet bls.**
0835	**Core drilling has penetrated to 2,394 feet bls (1 foot of coring).**
0900	**Greg Young on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/23/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
		X	X	
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**95**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,393 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,393 ft bls
ACTIVITY: Core # 7

SUB CONTRACTORS: None.
FORMATION SAMPLES: Core sample from 2393 to 2408 ft bls
WATER SAMPLES: Pad Monitor Well Water Quality
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on site relieving Hugh Klein. HK off site**
	Core # 7 drilling continues.
0922	**Core drilling has penetrated to 2395 ft bls (2 feet of coring)**
0950	**Core drilling has penetrated to 2396 ft bls (3 feet of coring)**
1024	**Core drilling has penetrated to 2397 ft bls (4 feet of coring)**
1136	**Core drilling has penetrated to 2398 ft bls (5 feet of coring)**
1242	**Core drilling has penetrated to 2399 ft bls (6 feet of coring)**
1405	**Core drilling has penetrated to 2400 ft bls (7 feet of coring)**
1500	**Core drilling has penetrated to 2401 ft bls (8 feet of coring)**
1614	**Core drilling has penetrated to 2402 ft bls (9 feet of coring)**
1750	**Core drilling has penetrated to 2403 ft bls (10 feet of coring)**
1810	**Core drilling has penetrated to 2404 ft bls (11feet of coring)**
1825	**Core drilling has penetrated to 2405 ft bls (12feet of coring)**
1900	**YBI shift change. Mark Devine and crew replacing Bob Didon and crew.**
1904	**Core drilling has penetrated to 2406 ft bls (13feet of coring)**
1951	**Core drilling has penetrated to 2407 ft bls (14feet of coring)**
2156	**Core drilling has penetrated to 2408 ft bls (15feet of coring)**

RM NO. 01-01

Observer's Initials GY

2100 Alejandra Simon on-site relieving Greg Young. GY off-site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/23/05 2100 to 3/24/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**96**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,393 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,415 ft bls
ACTIVITY: Retrieve Core #7 (2,393 to 2,408 ft bls); continue pilot hole drilling.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Core sample.
WATER SAMPLES: None.
TESTING: Specific capacity, deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site. YBI is preparing to TOOH.**
2420	**Retrieving core #7.**
2450	**YBI TIH with 12 ¼-inch bit to continue drilling the pilot hole.**
0600	**Specific capacity, deviation survey, water quality testing.**
0630	**Making connection.**
0700	**Bob Didon and crew replacing Mark Devine and crew.**
0900	**Greg Young on site relieving Alejandra Simon. Safety issues discussed. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/24/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**97**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,415 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,480 ft bls
ACTIVITY: 12 ¼" Pilot Hole

SUB CONTRACTORS: None.
FORMATION SAMPLES: Cuttings every 10 feet
WATER SAMPLES: Field every 40 feet and Lab every 80 feet
TESTING: Specific Capacity at 2480 feet bls

TIME	DESCRIPTION
0900	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site Pilot Hole Drilling continues.**
0912	**Depth=2418 ft bls, WOB~15K lbs, Rate=8 min/ft**
1010	**Depth=2422 ft bls, WOB~15K lbs, Rate=12 min/ft, rpm=32**
1116	**Depth=2427 ft bls, WOB~20K lbs, Rate=12 min/ft**
1214	**Depth=2431 ft bls, WOB~10-20K lbs, Rate=14 min/ft**
1305	**Depth=2434 ft bls, WOB~15-20K lbs, Rate=11 min/ft**
1353	**Depth=2438 ft bls, WOB~10-20K lbs, Rate=13 min/ft, rpm=32**
1427	**Field Water Quality Sample taken**
1538	**Depth=2448 ft bls, WOB~15-20K lbs, Rate=8 min/ft**
1645	**Depth=2460 ft bls, WOB~15-20K lbs, Rate=6 min/ft**
1834	**Depth=2472 ft bls, WOB~15-20K lbs, Rate=4 min/ft**
1856	**KD, Depth=2480 ft bls, YBI preparing for Specific Capacity Test, Water Quality samples taken.**
1900	**YBI shift change. Mark Devine and crew replacing Bob Didon and crew.**
1905	**Wiping Borehole in prep for Specific Capacity Test**
2100	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/24/05 2100 to 3/25/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**98**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,480 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,625 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field and Lab samples.
TESTING: Specific capacity, deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site.**
2238	**Depth is 2505 feet bls, no weight on bit, voids encountered.**
2310	**Depth is 2514 feet bls. Dredging.**
2335	**Depth is 2520 feet bls. No weight on bit, rig shattering, voids encountered. Field water quality taken.**
2420	**Depth is 2536 feet bls, drilling with 15,000 to 20,000 lbs on bit, 4 minutes per foot.**
0204	**KD at 2560 feet bls. Deviation survey, specific capacity test and water quality sample taken.**
0258	**Resume drilling.**
0400	**Depth is 2600 feet bls. Dredging.**
0607	**Depth is 2617 feet bls. 14 minutes per foot with 20,000 to 25,000 lbs on bit.**
0700	**Bob Didon and crew replacing Mark Devine and crew.**
0900	**Greg Young on site relieving Alejandra Simon. Safety issues discussed. AS off site.**

Week 8

(03-25)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/25/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**99**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Bob Didon, Mark Devine
ACTIVITY: 12 ¼" Pilot Hole

START DEPTH: 2,625 ft bls
END DEPTH: 2,666 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: Cuttings every 10 feet
WATER SAMPLES: Field every 40 feet and Lab every 80 feet
TESTING: Specific Capacity at 2,640 feet bls

TIME	DESCRIPTION
0900	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site Pilot Hole Drilling continues.**
0905	**Depth=2627 ft bls, WOB~5K lbs, Rate=12 min/ft**
1016	**Specific Capacity Test Begins**
1031	**Specific Capacity Test Ends**
1055	**Deviation Survey – 0.2º**
1100	**Air Pressure Lost –making a partial TOOH**
1523	**Depth=2648 ft bls, WOB~20K lbs, Rate=10 min/ft**
1855	**Depth=2663 ft bls, WOB~10K lbs, Rate=16 min/ft**
1900	**YBI Shift Change. Mark Devine replacing Bob Didon**
1946	**Depth=2666 ft bls, WOB~15-20K lbs, Rate=6 min/ft**
2100	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/25/05 2100 to 3/26/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**100**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,666 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,720 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field and Lab samples.
TESTING: Specific capacity, deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site.**
2220	**Depth is 2680 feet bls. Penetration rate is 14 minutes per foot. Field water quality sample taken and analyzed.**
0206	**Depth is 2696 feet bls. Drilling with 20,000 lbs on bit and a penetration rate of 8 minutes per foot.**
0357	**Depth is 2703 feet bls. Dredging.**
0700	**Dan Murphy and crew replacing Mark Devine and crew.**
0722	**Depth is 2720 feet bls.**
0900	**Greg Young on site relieving Alejandra Simon. AS off site.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/26/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**101**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,720 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,760 ft bls
ACTIVITY: 12 ¼" Pilot Hole

SUB CONTRACTORS: None.
FORMATION SAMPLES: Cuttings every 10 feet
WATER SAMPLES: Field every 40 feet and Lab every 80 feet
TESTING: Specific Capacity at 2,720 feet bls

TIME	DESCRIPTION
0900	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site Pilot Hole Drilling continues.**
0939	**Specific Capacity Test Begins**
0954	**Specific Capacity Test Ends**
1002	**Field and Lab Water Quality Samples taken**
1005	**Deviation Survey – 0.2º**
1144	**Depth=2727 ft bls, WOB~15-20K lbs, Rate=22 min/ft**
1200	**Dredging Borehole**
1501	**Depth=2744 ft bls, WOB~15-25K lbs, Rate=14 min/ft**
1800	**Depth=2759 ft bls, WOB~20-25K lbs, Rate=20 min/ft**
1259	**Dredging Borehole**
1900	**YBI Shift Change. Bob Didon replacing Dan Murphy**
2100	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/26/05 2100 to 3/27/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**102**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,760 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,800 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field and Lab samples.
TESTING: Specific capacity, deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site.**
2325	**Depth is 2766.5 feet bls. Penetration rate is 26 minutes per foot with 20,000 lbs on bit.**
0154	**Depth is 2775 feet bls. Drilling with 20,000 to 25,000 lbs on bit and a penetration rate of 20 minutes per foot.**
0413	**Depth is 2784 feet bls. Drilling with 20,000 to 25,000 lbs on bit and a penetration rate of 25 minutes per foot.**
0621	**Depth is 2791 feet bls. Drilling with 20,000 to 25,000 lbs on bit and a penetration rate of 10 minutes per foot.**
0700	**Dan Murphy and crew replacing Bob Didon and crew.**
0840	**KD at 2800 feet bls. Dredging. Lab and field water quality sample taken.**
0900	**Greg Young on site relieving Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/27/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**103**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,800 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,834 ft bls
ACTIVITY: 12 ¼" Pilot Hole

SUB CONTRACTORS: None.
FORMATION SAMPLES: Cuttings every 10 feet
WATER SAMPLES: Field every 40 feet and Lab every 80 feet
TESTING: Specific Capacity at 2,800 feet bls

TIME	DESCRIPTION
0900	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site Pilot Hole Drilling continues.**
1023	**Specific Capacity Test Begins**
1038	**Specific Capacity Test Ends**
1100	**Deviation Survey – 0.2º**
1331	**Depth=2813 ft bls, WOB~10-15K lbs, Rate=12 min/ft**
1719	**Depth=2828 ft bls, WOB~20K lbs, Rate=22 min/ft**
1855	**Depth=2832 ft bls, WOB~10K lbs, Rate=16 min/ft**
1900	**YBI Shift Change. Bob Didon replacing Dan Murphy**
2100	**Depth=2834 ft bls. Dredging Borehole.**
	Alejandra Simon on-site relieving Greg Young. GY off-site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/27/05 2100 to 3/28/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**104**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,834 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,880 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field and Lab samples.
TESTING: Specific capacity, deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site.**
2205	**Depth is 2835 feet bls. Drilling with 15,000 to 20,000 lbs on bit.**
2354	**Depth is 2840 feet bls. Field water quality taken and analyzed.**
0244	**Depth is 2855 feet bls. Drilling with 20,000 lbs on bit and a penetration rate of 14 minutes per foot.**
0446	**Depth is 2865 feet bls. Drilling with 20,000 to 25,000 lbs on bit and a penetration rate of 14 minutes per foot.**
0630	**Depth is 2872 feet bls. Drilling with 20,000 lbs on bit and a penetration rate of 14 minutes per foot.**
0700	**Dan Murphy and crew replacing Bob Didon and crew.**
0900	**Greg Young on site relieving Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/28/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**105**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy, Bob Didon
ACTIVITY: 12 ¼" Pilot Hole

START DEPTH: 2,880 ft bls
END DEPTH: 2,899 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: Cuttings every 10 feet
WATER SAMPLES: Field every 40 feet and Lab every 80 feet
TESTING: Specific Capacity at 2,880 feet bls

TIME	DESCRIPTION
0900	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site YBI currently dredging borehole.**
1432	**Specific Capacity Test Begins**
1447	**Specific Capacity Test Ends**
1500	**Deviation Survey – 0.25º , Water Quality Sample Taken**
1652	**Depth=2887 ft bls, WOB~20-25K lbs, Rate=14 min/ft**
1900	**YBI Shift Change. Bob Didon replacing Dan Murphy**
1905	**Depth=2894 ft bls, WOB~15-20K lbs, Rate=18 min/ft**
2034	**Depth=2899 ft bls, WOB~15-20K lbs, Rate=16 min/ft**
2100	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/28/05 2100 to 3/29/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**106**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,899ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,936 ft bls
ACTIVITY: Drilling 12 ¼-inch pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Field and Lab samples.
TESTING: Specific capacity, deviation survey.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site.**
2206	**Depth is 2907 feet bls. Drilling with 25,000 lbs on bit and a penetration rate of 14 min/foot.**
2347	**Depth is 2913 feet bls. Drilling with 25,000 lbs on bit and a penetration rate of 12 min/foot**
0111	**Depth is 2919 feet bls. Drilling with 25,000 lbs on bit and a penetration rate of 20 min/foot**
0123	**Depth is 2920 feet bls. Field water quality sample taken and analyzed.**
0332	**Depth is 2927 feet bls. Drilling with 25,000 lbs on bit and a penetration rate of 14 min/foot**
0533	**Depth is 2933 feet bls. Drilling with 20,000 to 25,000 lbs on bit and a penetration rate of 22 min/foot.**
0647	**Depth is 2936 feet bls. Drilling with 25,000 lbs on bit and a penetration rate of 28 min/foot**
0700	**Dan Murphy and crew replacing Bob Didon and crew.**
0715	**YBI TOOH to check bit and if necessary replace it.**
0900	**Greg Young on site relieving Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/29/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**107**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,936 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,936 ft bls
ACTIVITY: 12 ¼" Pilot Hole

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on site relieving Alejandra Simon. AS off-site YBI currently TOOH to inspect drill bit.**
1150	**TOOH complete; drill bit in good condition**
1235	**TIH begins**
1520	**TIH ends. YBI dredging borehole**
1651	**Jamie Allen on-site to repair rig due to "washing out"**
1900	**YBI Shift Change. Bob Didon replacing Dan Murphy**
1920	**Partial TOOH to establish positive air pressure**
2100	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/29/05 2100 to 3/30/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**108**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Bob Didon; Dan Murphy
ACTIVITY: Drilling 12 ¼-inch pilot hole.

START DEPTH: 2,936 ft bls
END DEPTH: 2,951 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site.**
2124	**Dredging at 2780 feet bls. Borehole caved in.**
0300	**Dredging at approximately 2820 feet bls.**
0332	**Making connection. Depth is 2860 feet bls.**
0400	**Drill bit is on bottom of the pilot hole at 2936 feet bls. Begin drilling.**
0540	**Depth is 2941 feet bls. Drilling with 20,000 to 25,000 lbs on bit and a penetration rate of 18 min/foot**
0700	**Dan Murphy and crew replacing Bob Didon and crew.**
0839	**Depth is 2951 feet bls. Drilling with 25,000 lbs on bit and a penetration rate of 18 min/foot**
0900	**Hugh Klein on site relieving Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/30/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**109**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,951ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,986 ft bls
ACTIVITY: Pilot hole drilling for the final casing and injection zone.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: Formation samples every 10 feet.
WATER SAMPLES: Drill stem water quality analysis every 40 feet with lab samples taken every 80 feet.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Alejandra Simon. AS off site.**
0929	**The penetrated depth is 2,955 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 15 minutes per foot.**
1105	**KD at 2,960 feet bls. YBI will dredge before making the connection.**
1310	**Specific capacity test completed and a water sample is being taken from the dissipater for field and laboratory analysis. Lab sample is 3OaksIW-2240. Deviation survey run at 2,960 feet bls.**
1312	**JW Craft Company on site servicing the latrines.**
1400	**Sampling the PMWs.**
1415	**YBI drilling at 2,965 feet bls with 20,000 pounds WOB and a penetration rate of approximately 15 minutes per foot.**
1644	**YBI drilling at 2,975 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 15 to 20 minutes per foot.**
1900	**Bob Didon and crew relieving Dan Murphy and crew. The penetrated depth is 2,980 feet bls.**
1920	**Borehole is unstable and the hole is being dredged.**
2038	**The penetrated depth is 2,985 feet bls and YBI is drilling with 20,000 pounds WOB, and a penetration rate of 20 minutes per foot.**
2100	**Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/30/05 2100 to 3/31/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**110**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 2,986ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Pilot hole drilling for the final casing and injection zone.

SUB CONTRACTORS: None.
FORMATION SAMPLES: Formation samples every 10 feet.
WATER SAMPLES: Drill stem water quality analysis every 40 feet with lab samples taken every 80 feet.
TESTING: None.

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. HK off site.**
2138	**The penetrated depth is 2,989 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 22 minutes per foot.**
2232	**The penetrated depth is 2,991 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 20 minutes per foot.**
2320	**The penetrated depth is 2,996 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 12 minutes per foot.**
0020	**YBI reaches a depth of 3,000 ft bls.**
0120	**The penetrated depth is 3,003 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 22 minutes per foot.**
0226	**The penetrated depth is 3,007 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 18 minutes per foot.**
0340	**The penetrated depth is 3,010 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 30 minutes per foot.**
0445	**The penetrated depth is 3,013 feet bls with 20,000 to 25,000 pounds WOB and a penetration rate of approximately 20 minutes per foot.**
0514	**YBI reaches a total penetrated depth of 3,015 ft bls.**

0550 YBI begins to TOOH to bottom of intermediate casing depth.
0700 Mark Devine and crew replacing Bob Didon and crew.
0745 YBI completes TOOH to bottom of intermediate casing depth.
0807 YBI begins TIH in order to dredge the pilot hole in preparation for logging.
0900 Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/31/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**111**

SHIFT SUMMARY

OBSERVER: Hugh Klein
DRILLER: Mark Devine; Bob Didon
ACTIVITY: Preparing for geophysical logging..

START DEPTH: 3,015 ft bls
END DEPTH: 3,015 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Zach Herrington. ZH off site. YBI TIH from the base of the intermediate casing to clean the hole out.
1008	YBI at 2,840 feet bls cleaning/dredging the borehole.
1212	YBI at 2,860 feet bls cleaning/dredging the borehole with 5,000 to 10,000 pounds WOB.
1452	The interval from 2,880 feet bls to 2,960 feet bls is being dredged.
1645	Jimmy Lynch Trucking on site to haul away a load from the slurry pit.
1655	YBI dredging at 2,995 feet bls.
1750	Jimmy Lynch Trucking on site to haul away another load from the slurry pit.
1846	YBI dredging at 3,015 feet bls.
1900	Bob Didon and crew relieving Mark Devine and crew. Jimmy Lynch Trucking on site to haul away another load from the slurry pit. YBI servicing the rig.
1919	Jimmy Lynch Trucking on site to haul away another load from the slurry pit.
1938	YBI starting a short TOOH (5 STDs).
2006	Jimmy Lynch Trucking on site to haul away another load from the slurry pit.
2020	YBI TIH from 2,600 feet bls.
2040	YBI can't get past 2,840 feet bls; starting to dredge.
2100	Zach Herrington on site relieving Hugh Klein. Safety issues discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 3/31/05 2100 to 4/1/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**112**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 3,015 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Preparing for geophysical logging.

SUB CONTRACTORS: Jamie Allen(welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	Zach Herrington on site relieving Hugh Klein. Safety issues discussed HK off site.
2130	YBI dredging at 2,875 ft bls.
2240	YBI dredging between 2,875 and 2,890 ft bls.
2335	YBI dredging at approximately 2,960 ft bls.
0016	YBI dredging at 3,015 ft bls. YBI will TOOH on a short trip (5 STDS).
0125	YBI completes TOOH.
0135	YBI begins TIH from 2,600 ft bls.
0330	YBI dredging the borehole.
0515	YBI dredging the borehole at 3,015 ft bls.
0525	YBI begins to TOOH on a short trip (5 STDS).
0552	YBI begins TIH from 2,600 ft bls.
0700	Mark Devine and crew replacing Bob Didon and crew. Jamie Allen (welder) on site. YBI dredging the borehole at approximately 2,960 ft bls.
0825	YBI begins to TOOH on a short trip (4 STDS).
0900	Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.

FORM NO. 01-01

Observer's Initials ZH

Week 9

(04-01)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/1/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**113**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 3,015 ft bls
ACTIVITY: Preparing for geophysical logging.

SUB CONTRACTORS: Jamie Allen (welder); YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. ZH off site. YBI starting a short TOOH (5 STDs).**
1015	**YBI has TIH to TD and the hole is clean. YBI will TOOH to remove the bit and TIH with 19 STDs. Geophysical logging will follow.**
1445	**YBI TIH open-ended; will trip 19 STDs in.**
1527	**YBI Geophysical on site (John Cathey and Jim Goodwin).**
1555	**Starting to log the static fluid conductivity and fluid temperature.**
1645	**Running the caliper and gamma ray logs.**
1750	**Running DIL.**
1900	**Bob Didon and crew relieving Mark Devine and crew.**
2035	**Running flow calibrations.**
2100	**HK remaining on site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/01/05 2100 to 4/02/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**114**

SHIFT SUMMARY

OBSERVER: Hugh Klein; Zach Herrington
START DEPTH: 3,015 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Geophysical logging.

SUB CONTRACTORS: YBI Geophysical Logging Division; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein remaining on site from the previous shift.**
2250	**Running the dynamic flow log.**
0130	**Running the borehole video.**
0320	**Geophysical logging completed.**
0400	**Zach Herrington on site. Safety issues discussed.**
0425	**Hugh Klein off site. Zach Herrington taking over.**
0430	**YBI is currently TOOH in order to prepare for the packer test.**
0625	**YBI completes TOOH. YBI measuring top and bottom packers.**
0700	**Mark Devine and crew replacing Bob Didon and crew. Jamie Allen on site.**
0900	**Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/2/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**115**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Preparing for packer testing.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. The geophysical logs are currently being reviewed for selection of packer test depths, and YBI is preparing the equipment for packer testing.**
1600	**Packer test intervals were discussed earlier in the day with Mark Abbott, and finalized with Mark Chandler.**
1710	**Packer test intervals provided to YBI.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**
1910	**YBI TIH with the straddle packer assembly to begin packer testing.**
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/02/05 2100 to 4/03/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**116**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Packer Test # 4

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Field Water Quality Testing.
TESTING: Packer Test #4.

TIME	DESCRIPTION
2100	Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.
2130	YBI continues to TIH in preparation for Packer Test # 4.
2335	YBI completes TIH. YBI sends probe to 50 ft bls.
0016	YBI pressuring up the packers.
0028	Packers pressured up to 580 psi.
0058	YBI tripping air line into hole.
0110	YBI begins air development.
0550	YBI completes air development.
0600	YBI tripping air line out of hole.
0700	Mark Devine and crew replacing Dan Murphy and crew.
0744	Recorded readings from Hermit prior to pumping. Static water level is 164.226 ft bls.
0800	Performed water quality analysis after running pump in preparation to begin background.
0815	YBI begins background.
0900	Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/3/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**117**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Packer testing.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: Samples from the packer test collected for field and laboratory analysis.
TESTING: Packer Test #4.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. Packer test #4 in the background phase. Background began at 0815.**
1216	**Packer test 4 started.**
1247	**YBI tanker hauling fluid away from the slurry pit.**
1421	**Another YBI tanker hauling fluid away from the slurry pit.**
1611	**Collecting a sample from packer test #4 to be analyzed at the laboratory. Sample is 3OaksIWPT4(2271-2299).**
1618	**The pump has been shut off and packer test #4 is now in recovery.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**
2014	**Jim Goodwin (YBI Geophysical Logging Division) on site to download the datalogger from the packer test.**
2030	**YBI beginning to deflate the packers.**
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/03/05 2100 to 4/04/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 118**
		X		

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Packer Test # 5

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Field Water Quality Testing.
TESTING: Packer Test #5.

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**
2200	**YBI continues to pump water from pit back into hole.**
2355	**YBI completes pumping. YBI begins to pull pump out of hole in order to move packer for Packer Test #5.**
0203	**YBI begins to pressurize packers for PT #5.**
0315	**Development for PT #5 begins.**
0630	**YBI concludes air development**
0700	**Mark Devine and crew replacing Dan Murphy and crew.**
0815	**Static water levels measured.**
0855	**Flow rate established for background.**
0900	**Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/4/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 119**
	X			

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Packer testing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Samples from the packer test collected for field and laboratory analysis.
TESTING: Packer Test #5.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. The rate for packer test #5 is being established.**
0915	**The pump rate for packer test #5 has been established at 1.7 gpm. The background period is beginning now.**
1225	**Evans Oil on site delivering diesel fuel.**
1315	**The background period has been going on for 4 hours, but the well is still recovering.**
1518	**Packer test #5 started.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**
1903	**Collecting a sample from packer test #5 to be analyzed at the laboratory. Sample is 3OaksIWPT5(2072-2100).**
1921	**The pump has been shut off and packer test #5 is now in recovery.**
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/04/05 2100 to 4/05/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**120**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy, Greg Didon
END DEPTH: 3,015 ft bls
ACTIVITY: Packer Test # 6.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: Field Water Quality Testing.
TESTING: Packer Test # 6.

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**
2200	**Packer Test # 5 still in recovery.**
2315	**Jim Goodwin (YBI Geophysical Logging Division) on site to download the datalogger from the packer test.**
0010	**YBI deflating packers.**
0100	**YBI begins to move packers.**
0300	**YBI begins to pressurize packers.**
0410	**Development for Packer Test # 6 begins.**
0655	**Water quality has stabilized to the +/- 10% threshold for PT # 6.**
0700	**Bob Didon and crew replacing Dan Murphy and crew.**
0715	**YBI begins to trip out air line.**
0900	**Hugh Klein on site relieving Zach Herrington. Safety issues discussed. ZH off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/5/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**121**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 3,015 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Packer testing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Samples from the packer test collected for field and laboratory analysis.
TESTING: Packer Test #6.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Zach Herrington. Site safety discussed. ZH off site. YBI is currently waiting for the water level to recover from development before establishing a pump rate for the packer test.**
1035	**The pump rate for packer test #6 has been established at 2 gpm. The background period is beginning now.**
1240	**Cleaning staff on site to clean the trailer.**
1411	**JW Craft Co. on site servicing the latrines.**
1435	**The background period has been going on for 4 hours, but the well is still recovering.**
1628	**Packer test #6 started.**
1900	**Dan Murphy and crew relieving Bob Didon and crew.**
2010	**Collecting a sample from packer test #6 to be analyzed at the laboratory. Sample is 3OaksIWPT6(1920-1948).**
2029	**The pump has been shut off and packer test #6 is now in recovery.**
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/05/05 2100 to 4/06/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 – 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**122**

SHIFT SUMMARY

OBSERVER: Zach Herrington
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 3,015 ft bls
ACTIVITY: Packer Test # 6 / # 7.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: Field Water Quality Testing.
TESTING: Packer Test # 7.

TIME	DESCRIPTION
2100	**Zach Herrington on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**
2200	**Packer Test # 6 in recovery.**
0030	**Jim Goodwin (YBI Geophysical Logging Division) on site to download the datalogger from the packer test.**
0100	**YBI deflating packers.**
0154	**YBI begins TOOH.**
0330	**YBI begins changing the straddle on the packers.**
0400	**YBI begins to TIH.**
0630	**YBI completes TIH and begins to inflate packers.**
0700	**Bob Didon and crew replacing Dan Murphy and crew.**
0900	**Alejandra Simon on site relieving Zach Herrington. Safety issues discussed. ZH off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/6/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**123**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 3,015 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Packer testing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Field sampling every 20-30 minutes during development.
TESTING: Packer test #7 (1819-1837) feet bls.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Zach Herrington. Site safety discussed. ZH off site. YBI started development for packer test #7 at 0830 this morning. Air developing at 8 gallons per minute.**
1122	**Pad monitoring wells sampling.**
1430	**End of development.**
1622	**The pump rate for packer test #7 has been established at 5.5 gpm. Starting background.**
1900	**Dan Murphy and crew relieving Bob Didon and crew.**
2100	**Greg Young on site relieving Alejandra Simon. Site safety discussed. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/6/05 2100 to 4/7/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**124**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 3,015 ft bls
ACTIVITY: Packer testing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Field sampling every 30 minutes during Packer Test.
TESTING: Packer test #7 (1819-1837) feet bls.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site YBI currently dredging borehole.**
2230	**End of Packer Test #7 Background, Begin Packer Test. Flow set at 5.5 gpm**
0230	**Packer Test #7 complete. Begin 4 hour Recovery Phase.**
0630	**Packer Recovery Phase complete. Data downloaded from Hermit.**
0700	**YBI Shift Change. Bob Didon replacing Dan Murphy**
0730	**YBI begins TOOH.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/7/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**125**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 3,015 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Preparing to cement pilot hole.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. GY off site. YBI continues to TOOH with packers.**
1033	**Completed TOOH with packers. Memory gauge retrieved.**
1200	**Clay Ferguson (YBI Geophysical) on site to retrieve data from memory gauge.**
1549	**Spoke with Mark Chandler there will not be any more packer test in the IW. YBI will now proceed with the cementing of the pilot hole.**
1900	**Mark Devine and crew relieving Bob Didon and crew. YBI is preparing to TIH with cement basket.**
2100	**Greg Young on site relieving Alejandra Simon. Site safety discussed. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/7/05 2100 to 4/8/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X	X	
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**126**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 3,015 ft bls
ACTIVITY: Preparing for Cement Basket Installation

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. Safety and Progress discussed. AS off-site YBI currently preparing to install Cement Basket at 2430 ft bls.**
2130	**Heavy rain and thunderstorm begins. Site activities on hold.**
0330	**Rain ends.**
0630	**Cement Basket installation activities continue.**
0700	**YBI Shift Change. Bob Didon and crew replacing Mark Devine and crew. A clog in the tremie tube in hampering installation of the basket. Tremie pipe is pulled from the borehole to investigate.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

Week 10

(04-08)

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/8/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**127**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Bob Didon; Mark Devine
ACTIVITY: Cementing pilot hole.

START DEPTH: 3,015 ft bls
END DEPTH: 3,015 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. Gordon Kennedy on site. YBI TIH with cement basket.**
0930	**Greg Young and Gordon Kennedy off site.**
1230	**Cement basket placed at 2430 feet bls. Mixing cement to set cement basket.**
1235	**Pumping cement down the tremie tube.**
1242	**Chase.**
1425	**Flushing tremie tube. YBI was unable to cement in place the basket.**
1442	**TOOH with basket.**
1700	**TIH with new basket. At approximate 60 feet bls, the basket was filled with air and did not allow the lowering of the tremie tube. YBI TOOH with the basket and it ripped.**
1800	**YBI testing a new basket on the ground.**
1830	**Attempting to inflate it.**
1900	**YBI shift change. Mark Devine replacing Bob Didon.**
1920	**YBI TIH with new basket.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/8/05 2100 to 4/9/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**128**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 3,015 ft bls
ACTIVITY: Cement Basket Installation

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site.**
	YBI currently preparing to install Cement Basket at 2425 ft bls.
2330	**TIH complete.**
0100	**Cement being added to lower portion of basket.**
0320	**Cement Basket intact. Cementing activities continue.**
0400	**Cement being added to upper portion of basket. WOC**
0700	**YBI Shift Change. Bob Didon and crew replacing Mark Devine and crew.**
0800	**TOOH to clear tremie pipes.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/9/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**129**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 3,015 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Cementing pilot hole.

SUB CONTRACTORS: Florida Cementing.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Alejandra Simon on site relieving Gregory Young. Site safety discussed.
1121	Dump truck delivering gravel. Cement basket tagged at 2425 feet bls. Two barrels were pumped inside basket.
1150	Mixing barrel of cement with CaCl as additive.
1200	Pumping cement on top of cement basket. Third dump truck delivering gravel.
1205	Flushing approximately 500 gallons of water.
1232	Done cementing. WOC.
1418	Tagged cement at 2419 feet bls.
1424	Mixing barrel of cement.
1442	Pumping cement.
1505	Done cementing. WOC. Four barrels total.
1656	Tagged cement at 2412 feet bls.
1746	Jimmy Brantley (Florida Cementing) on site. Pumping preflush.
1800	Done cementing (stage I). Pumped 40 barrels of neat cement.
1815	WOC.
1900	YBI shift change. Mark Devine and crew replacing Bob Didon and crew.
2100	Greg Young replacing Alejandra Simon. Alejandra Simon off site.

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/9/05 2100 to 4/10/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X	X	
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**130**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Cementing Pilot Hole

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site.**
	YBI currently preparing to install Cement Basket at 2425 ft bls.
2330	**Tag at 2370 ft bls.**
0000	**Pumped 34 bbls neat cement. WOC.**
0400	**TOOH to attach mule shoe.**
0630	**TIH with mule shoe attached.**
0700	**YBI Shift Change. Dan Murphy and crew replacing Mark Devine and crew.**
0800	**Tag at 2240 ft bls. Preparing to gravel to ~2150 ft bls.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/10/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**131**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Cementing pilot hole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. YBI is TOOH to unclog tremie tubing that was clogged after the tag was made. GY off site.**
1145	**Finished TIH. Tube still clogged, trapped air might be obstructing. Pumping fresh water in the tremie tube to let the air out.**
1214	**Added 30 gallons of salt to the fresh water. Tubing is cleared of air. Pumping gravel down the hole.**
1605	**Tagged at 2216 feet bls after adding two loads of gravel.**
1620	**Tagged at 2183 feet bls after adding another load of gravel.**
1800	**Finished pumping the fourth load of gravel. Will let the gravel settle before tagging.**
1900	**YBI shift change. Mark Devine and crew replacing Dan Murphy and crew.**
1930	**Tag at 2146 feet bls. Cementing will continue by adding one barrel at a time of neat cement until at least a 10-foot lift has been obtained. Then cement will be added by pumping with the Florida Cementing Division's truck.**
1955	**Mixing barrel of neat cement with CaCl as additive.**
2020	**Pumping cement.**
2037	**End cementing. WOC.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/10/05 2100 to 4/11/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
			X	
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**132**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 3,015 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 3,015 ft bls
ACTIVITY: Cementing Pilot Hole

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site. Currently WOC.**
2330	**Tag at 2142 ft bls.**
0100	**Pumped 1 bbl neat cement. WOC.**
0500	**Tag at 2137 ft bls.**
0530	**Pumped 1 bbl neat cement. WOC.**
0700	**YBI Shift Change. Dan Murphy and crew replacing Mark Devine and crew.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/11/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**133**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 3,015 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 3,015 ft bls
ACTIVITY: Cementing pilot hole.

SUB CONTRACTORS: Florida Cementing; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Gregory Young. Site safety discussed. WOC.**
0952	**Tagged top of cement at 2,130 feet bls.**
0956	**Josh Brown (Florida Cementing) on site. Pumping cement**
1020	**Pumped 15 barrels of neat cement. WOC.**
1408	**Tagged top of cement at 2,060 feet bls. Preparing for cementing.**
1445	**Pumped 165 barrels of neat cement. WOC.**
1900	**YBI shift change. Mark Devine and crew replacing Dan Murphy and crew.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/11/05 2100 to 4/12/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**134**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,536 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 1,601 ft bls
ACTIVITY: Reaming for Installation of Final Casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site. Currently WOC.**
2115	**Tag at 1537 ft bls. TOOH.**
2300	**TOOH complete. Installing BHA.**
2345	**BHA installation complete and in borehole.**
0100	**Begin TIH.**
0330	**TIH complete with 19 stands. Begin Reaming at 1536 ft bls.**
0500	**Depth 1,548 ft bls, WOB 5-10K lbs, Pen. Rate ~2 min/ft.**
0645	**Depth 1,581 ft bls, WOB 10K lbs, Pen. Rate ~2 min/ft.**
0830	**Depth 1,601 ft bls, WOB 10K lbs, Pen. Rate ~2 min/ft.**
0900	**AS on-site. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/12/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**135**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,601 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 1706 ft bls
ACTIVITY: 28.5-inch ream for the final casing

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site relieving Gregory Young. Site safety discussed.**
0920	**Depth is 1610 feet bls. Penetration rate is 6 minutes per foot. Reaming with 15,000 lbs on bit**
0940	**Mark Chandler on site. Greg Young off site.**
1000	**Monthly meeting (MWH, Lee County Utilities and YBI). KD at 1616 feet bls.**
1305	**Depth is 1649 feet bls. Penetration rate is 6 minutes per foot. Reaming with 15,000 lbs on bit.**
1320	**Received final casing seat approval by FDEP at 2100 feet bls.**
1336	**Mark Chandler off site.**
1637	**Depth is 1681 feet bls. Penetration rate is 6 - 8 minutes per foot. Reaming with 15,000 lbs on bit.**
1900	**YBI shift change. Bob Didon and crew replacing Dan Murphy and crew. Penetration rate is 14 minutes per foot. KD @ 1696 feet bls.**
2000	**Depth is 1701 feet bls. Penetration rate is 10 minutes per foot. Reaming with 5,000 –10,000 lbs on bit.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/12/05 2100 to 4/13/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**136**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1,706 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 1,766 ft bls
ACTIVITY: Reaming for Installation of Final Casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site.**
2125	**Depth 1,709 ft bls, WOB 12-15K lbs, Pen. Rate 4-5 min/ft.**
2245	**Depth 1,717 ft bls, WOB 5-10K lbs, Pen. Rate 12 min/ft.**
0000	**Depth 1,725 ft bls, WOB 10-15K lbs, Pen. Rate 10 min/ft.**
0100	**Depth 1,729 ft bls, WOB 10K lbs, Pen. Rate 8 min/ft.**
0220	**Depth 1,735 ft bls, WOB 10-12K lbs, Pen. Rate ~16 min/ft.**
0330	**Depth 1,742 ft bls, WOB 12-15K lbs, Pen. Rate 8 min/ft.**
0500	**Depth 1,753 ft bls, WOB 10-15K lbs, Pen. Rate 2 min/ft.**
0640	**Depth 1,763 ft bls, WOB 15K lbs, Pen. Rate ~25 min/ft.**
0700	**YBI Shift Change. Dan Murphy and crew replacing Bob Didon and crew.**
0730	**Depth 1,764 ft bls, WOB ~15K lbs, Pen. Rate 36 min/ft.**
0845	**Depth 1,766 ft bls, WOB ~15K lbs, Pen. Rate 22 min/ft.**
0900	**Hugh Klein on site. Greg Young off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/13/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**137**

SHIFT SUMMARY

OBSERVER: Hugh Klein
DRILLER: Dan Murphy; Bob Didon
ACTIVITY: 28½-inch ream for the final casing

START DEPTH: 1,766 ft bls
END DEPTH: 1,820 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: PMW sampling.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Gregory Young. Site safety discussed. GY off site
0918	YBI drilling at 1,768 feet bls with 15,000 pounds WOB and a penetration rate of approximately 20 minutes per foot.
0932	Raining very hard.
1143	The penetrated depth is 1,773 feet bls with 15,000 to 20,000 pounds WOB and the penetration varying from 20 to 30 minutes per foot.
1240	KD at 1,776 feet bls. Deviation survey performed at 1,776 feet bls.
1259	Starting to sample the PMWs.
1742	YBI at 1,803 feet bls with 15,000 to 20,000 pounds WOB. The penetration rate has been ranging from 5 to 10 minutes per foot, but the last foot has take 20 minutes to drill.
1900	Bob Didon and crew replacing Dan Murphy and crew. The penetrated depth is 1,807 feet bls.
2048	The penetrated depth is 1,819 feet bls with 15,000 to 20,000 pounds WOB and a penetration rate of 8 to 10 minutes per foot.
2100	Aimee Fratarcangeli replacing Hugh Klein. Site safety discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/13/05 2100 to 4/14/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**138**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,820 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 1,875 ft bls
ACTIVITY: Reaming for Installation of Final Casing with Nominal 28 ½-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli on site relieving Hugh Klein. Site safety discussed. HK off-site.**
2114	**Depth 1,820 ft bls, WOB 15-20K lbs, Pen. Rate 10 min/ft. Reaming with 28 ½" bit.**
2155	**Depth 1,824 ft bls, WOB 15-18K lbs, Pen. Rate 10 min/ft.**
2242	**Depth 1,830 ft bls, WOB 15-20K lbs, Pen. Rate 8 min/ft.**
2315	**Depth 1,834 ft bls, WOB 15-20K lbs,**
0025	**Depth 1,840 ft bls, WOB 15-18K lbs, Pen. Rate ~9 min/ft.**
0230	**This stand drilled down to 1,856 ft. bls. Deviation survey at 1,856 ft of 0.5 degrees.**
0445	**The pump transferring formation fluid from the circulation pit down the well and referred to as the 'downhole pump' has malfunctioned. Possibly a rock in the impeller. This pump is currently being replaced.**
0700	**YBI Shift Change. Dan Murphy and crew replacing Bob Didon and crew.**
0730	**Service rig. Continue to change out the downhole pump.**
0752	**Resume drilling at 1866 ft bls.**
0850	**Drilling at 1,875 ft bl WOB 15–18K lbs.,Pen Rate 10 min/fts**
0900	**Hugh Klein replacing Aimee Fratarcangeli. Site safety discussed. AF off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/14/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**139**

SHIFT SUMMARY

OBSERVER: Hugh Klein
DRILLER: Dan Murphy; Bob Didon
ACTIVITY: 28½-inch ream for the final casing

START DEPTH: 1,875 ft bls
END DEPTH: 1,945 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Aimee Fratarcangeli. Site safety discussed. AF off site. The penetrated depth is 1,875 feet bls.**
0922	**The rig is down while the hydraulic unit is being worked on.**
1020	**YBI beginning to drill again.**
1140	**The penetrated depth is 1,895 feet bls with 15,000 pounds WOB and a penetration rate of approximately 5 minutes per foot.**
1247	**YBI at 1,907 feet bls, and the rig is down while the hydraulic unit is being worked on by the mechanic from YBI.**
1410	**YBI resuming drilling operations.**
1716	**The penetrated depth is 1,929 feet bls with 15,000 pounds WOB and a penetration rate of approximately 10 minutes per foot.**
1807	**Jimmy Lynch Trucking on site to haul a load from the slurry pit away.**
1835	**KD at 1,936 feet bls. Deviation survey to be performed.**
1900	**Bob Didon and crew replacing Dan Murphy and crew. YBI servicing the rig.**
1905	**Jimmy Lynch Trucking back on site to pick up another load from the slurry pit.**
2005	**Jimmy Lynch Trucking back on site to pick up another load from the slurry pit.**

2100 The penetrated depth is 1,945 feet bls with 15,000 pounds WOB and a penetration rate of approximately 8 minutes per foot. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/14/05 2100 to 4/15/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**140**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,945 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 1,988 ft bls
ACTIVITY: Reaming for Installation of Final Casing with Nominal 28 ½-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein off-site.**
2100	**Depth 1,945 ft bls, WOB 12–15k lbs, Pen. Rate 9 min/ft. Reaming with 28 ½-inch bit.**
2200	**Depth 1,950 ft bls, WOB 12–15k lbs, Pen. Rate 12 min/ft.**
2355	**Depth 1,958 ft bls, WOB 12-15K lbs, Pen. Rate 10 min/ft.**
0300	**Depth 1,965 ft bls, WOB 15 K lbs, Pen. Rate is ~40/min ft.**
0405	**Depth 1,968 ft bls, WOB 15K lbs, Pen. Rate ~13 min/ft.**
0618	**Drilling at 1,972 ft bls. Penetration rate is slow through this tight interval**
0700	**YBI shift change. Mark Devine and crew replacing Bob Didon and crew.**
0800	**Depth 1,978 ft bls**
0900	**Hugh Klein on site**

Week 11

(04-15)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/15/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**141**

SHIFT SUMMARY

OBSERVER: Hugh Klein
DRILLER: Mark Devine; Bob Didon
ACTIVITY: 28½-inch ream for the final casing

START DEPTH: 1,987 ft bls
END DEPTH: 2,073 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	**Hugh Klein on site.**
0913	**The penetrated depth is 1,988 feet bls with 15,000 pounds WOB and a penetration time of approximately 20 minutes for the last foot. Overall, the penetration rate is ranging from 5 to 10 minutes per foot.**
1140	**YBI at 2,011 feet bls with 20,000 pounds WOB and a penetration time of approximately 8 minutes per foot.**
1233	**KD at 2,016 feet bls. Deviation survey to be performed.**
1401	**YBI drilling at 2,028 feet bls with 15,000 to 20,000 pounds WOB and a penetration time of 5 minutes per foot.**
1716	**The penetrated depth is 2,070 feet bls, and YBI is repairing the wash pipe.**
1900	**The wash pipe had been repaired. Bob Didon and crew replacing Mark Devine and crew. YBI servicing the rig.**
2052	**YBI at 2,073 feet bls with 18,000 pounds WOB.**
2100	**Aimee Fratarcangeli relieving Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/15/05 2100 to 4/16/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
			X	
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**142**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,073 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,100 ft bls
ACTIVITY: Reaming for Installation of Final Casing with Nominal 28 ½-inch bit

SUB CONTRACTORS: Jamie Allen (welder); Jimmy Lynch Trucking
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Survey

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli relieves Hugh Klein. Site safety discussed. Hugh Klein off-site.**
2105	**Depth 2,073 ft bls, WOB 15–18k lbs, Pen. Rate 15 min/ft. Reaming with 28 ½-inch bit.**
2155	**Depth 2,075 ft bls, WOB 15–18k lbs, Pen. Rate 20 min/ft.**
2300	**Depth 2,181 ft bls, WOB 15-18K lbs, Pen. Rate 17 min/ft.**
2400	**Depth 2,085 ft bls, WOB 15-18K lbs, Pen. Rate is ~20/min ft.**
0200	**Depth 2,091 ft bls, WOB 15- 18K lbs, Pen. Rate ~20 min/ft.**
0335	**Circulating at 2,096 ft bls. Perform deviation survey at 2,096 ft bls of 0.50 degrees. Drilling has been slow through this relatively tight interval.**
0400	**Make connection and resume drilling at 2,096 ft bls.**
0428	**TD the 28 ½-inch reamed hole at 2,100 ft bls.**
0500	**Drill crew running a short wiper pass and is pulling eight (8) stands of drill pipe then trippng back to bottom.**
0652	**Begin wiper pass to TD depth of 2,100 ft bls.**
0700	**YBI shift change. Mark Devine and crew replacing Bob Didon and crew.**
0806	**Welder on-site (Jamie) to weld stinger on bottom joint of steel injection casing.**
0900	**Hugh Klein relieves Aimee Fratarcangeli. Site safety discussed. AF off site.**

RM NO. 01-01

Observer's Initials AF

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/16/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**143**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,100 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,104 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: Jamie Allen (welder); Jimmy Lynch Trucking.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Aimee Fratarcangeli. Site safety discussed. AF off site. YBI TOOH to change bits. YBI will then drill four feet and TOOH to change the stabilizer because it is larger in diameter than 18½-inches. The stabilizer is being left on initially to keep the 18½-inch bit centered and get the ream started on track.**
0929	**Jimmy Lynch Trucking on site to haul a load of material from the slurry pit away.**
0945	**YBI pulling the header off before puling the bit out of the borehole.**
1036	**Jimmy Lynch Trucking back on site to pick up another load from the slurry pit.**
1121	**YBI putting on the 18½-inch bit.**
1225	**YBI TIH.**
1420	**YBI beginning to drill with the 18½-inch bit using 10,000 pounds WOB and 15 rpm.**
1540	**YBI at 2,103 feet bls with 15,000 pounds WOB and 20 rpm.**
1608	**YBI at 2,104 feet bls preparing to TOOH and change the stabilizer to an 11-inch drill collar.**
1900	**Bob Didon and crew replacing Mark Devine and crew. YBI servicing the rig.**
1915	**Welding gussets on to take the stabilizer off.**
2030	**The stabilizer has been lifted out of the horehole.**
2100	**Aimee Fratarcangeli relieving Hugh Klein. Site safety discussed. HK off site.**

FORM NO. 01-01

Observer's Initials HK

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/16/05 2100 to 4/17/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
			X	
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**144**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,104 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,135 ft bls
ACTIVITY: Reaming open hole portion of the IW with 18 ½-inch bit

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli relieves Hugh Klein. Site safety discussed. Hugh Klein off-site.**
2105	**The 28 ½-inch stabilizer is hanging in the derrick. Drill crew prepares to lay it down then assemble an 18 ½ inch bit to one stand of drill collars prior to reaming the open hole portion of the injection well..**
2150	**Begin TIH with 18 ½-inch bit, one stand of drill collars and drill pipe.**
2300	**Continue TIH.**
0045	**Continue TIH.**
0105	**Begin reaming at a depth of 2,104 ft bls.**
0250	**Continue reaming at a depth of 2,110 ft bls with 18 ½-inch bit. Penetration rate is 10 min per foot. WOB is 15k-20k lbs. RPM is 20.**
0422	**Continue reaming at a depth of 2,114**
0519	**Continue reaming at a depth of 2,118 ft bls with 18 ½-inch bit. Penetration rate is 14 min per foot. WOB is 15k-20k lbs. RPM is 20.**
0700	**YBI shift change. Mark Devine and crew replacing Bob Didon and crew.**
0806	**Reaming at 2,130 feet bls. WOB is variable 10k to 20k lbs**
0900	**Hugh Klein relieves Aimee Fratarcangeli. Site safety discussed. AF off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/17/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**145**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,135 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,207 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Aimee Fratarcangeli. Site safety discussed. AF off site.
0953	YBI at 2,140 feet bls with 15,000 pounds WOB and a penetration rate of 5 minutes per foot.
1122	Drilling at 2,150 feet bls with 15,000 pounds WOB and 25 rpm.
1316	KD at 2,162 feet bls. A deviation survey will be performed before making the connection.
1522	Drilling at 2,170 feet bls with 15,000 pounds WOB and 25 rpm with a penetration rate of 10 minutes per foot.
1716	YBI drilling at 2,184 feet bls with 15,000 pounds WOB and 30 rpm. The penetration rate is 15 minutes per foot, and the formation is very fractured.
1900	Dan Murphy and crew replacing Mark Devine and crew. The penetrated depth is 2,199 feet bls.
2004	YBI servicing the rig. The penetrated depth is 2,204 feet bls.
2100	Aimee Fratarcangeli relieving Hugh Klein. Site safety discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/17/05 2100 to 4/18/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 146**
	X			

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,207 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 2,252 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
2100	Aimee Fratarcangeli relieves Hugh Klein. Site safety discussed. Hugh Klein off-site.
2203	Reaming at 2,215 ft bls with 18 ½-inch bit. WOB 15k – 18k lbs. Penetration rate is 12 min/ft. Much bit chatter through this interval.
2332	Reaming at 2,220 ft bls with D.P. stand #27. Very ratty drilling with much bit chatter. This part of the pilot hole was graveled and not grouted due to the large voids in the formation. WOB: 15k – 18k lbs. Pen. Rate: 25 min/ft. Gravel and cuttings in returns.
0116	Reaming at 2,228 ft bls, WOB is 15k – 18k lbs, Penetration rate is 10 min/ft. Much bit chatter.
0250	Reaming at 2,234 ft bls, WOB 15k – 16k lbs, Penetration rate is 12 min/ft. Less bit chatter noted.
0356	Continue reaming at a depth of 2,239 ft. bls with 18 ½-inch bit. Penetration rate is 11 min per foot. WOB is 15k-18k lbs. RPM is 20.
0421	Circulate at 2,241 ft bls, Deviation survey performed at 2,241 ft. bls reads 0.25 degrees..
0505	Continue reaming at a depth of 2,241 ft. bls with 18 ½-inch bit. Penetration rate is 11 min per foot. WOB is 15k-18k lbs. RPM is 20.
0642	Reaming at a depth of 2,249 feet bls. Decrease in bit chatter. Jamie Allen (welder) on site.
0700	YBI shift change. Mark Devine and crew replacing Dan Murphy and crew.
0754	Reaming at a depth of 2,251 feet bls. WOB is 20k lbs. Pen. Rate is 30 min per foot.

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0852 **Reaming at a depth of 2,252 feet bls. WOB is 18k lbs. Pen. Rate is 30 min per foot. Jamie Allen is preparing the bottom joint with appropriate seals.**

0900 **Hugh Klein relieves Aimee Fratarcangeli. Site safety discussed. AF off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/18/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**147**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,252 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,289 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Aimee Fratarcangeli. Site safety discussed. AF off site.
0952	Drilling at 2,254 feet bls with 15,000 pounds WOB and 40 rpm. The current penetration rate is 20 minutes per foot. The drilling conditions are very hard.
1205	YBI at 2,262 feet bls with 15,000 to 18,000 pounds WOB and a penetration rate of 10 minutes per foot.
1422	Drilling at 2,270 feet bls with 20,000 pounds WOB in very ratty conditions with 40 rpm.
1645	JW Craft Co. on site servicing the latrines.
1708	YBI drilling at 2,281 feet bls with 20,000 pounds WOB and 45 rpm. The current penetration rate is 15 minutes per foot. The drilling conditions continue to be very ratty.
1730	The rig is shut down so that a leak in the flow line can be welded shut. The penetrated depth is 2,284 feet bls.
1900	Dan Murphy and crew replacing Mark Devine and crew. YBI servicing the rig.
1920	The leak has been repaired and the rig is running again.
1958	YBI at 2,285 feet bls with 15,000 to 20,000 pounds WOB, a penetration rate of 15 minutes per foot, and 40 rpm.
2100	Aimee Fratarcangeli relieving Hugh Klein. The penetrated depth is 2,289 feet bls. Site safety discussed. HK off site.

FORM NO. 01-01

Observer's Initials HK

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/18/05 2100 to 4/19/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 148**
	X			

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,289 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 2,322 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Survey.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli relieves Hugh Klein. Site safety discussed. Hugh Klein off-site.**
2203	**Reaming at 2,292 feet bls with 18 ½-inch bit. WOB 15,000 to 18,000 pounds. Penetration rate is 20 minutes per foot. Some bit chatter through this interval.**
2305	**Reaming at 2,295 feet bls. Minimal bit chatter. RPM's vary from 20 to 30 depending on drilling conditions. RPM of 20 is applied to the intervals of more pronounced bit chatter. RPM of 30 is applied to the intervals of smoother drilling. On average the formation is drilling hard and smooth. WOB: 15,000 to 18,000 pounds. Penetration rate is 25 minutes per foot.**
0015	**Reaming at 2,298 feet bls. WOB is 15,000 to 18,000 pounds, Penetration rate is 20 minutes per foot.**
0050	**Reaming at 2,300 feet bls, WOB 15,000 to 18,000 pounds. RPM's vary from 20 to 30. Penetration rate is 30 minutes per foot.**
0207	**Continue reaming at a depth of 2,305 feet bls with 18 ½-inch bit. Penetration rate is 14 minutes per foot. WOB is 18,000 pounds. RPM is 30.**
0332	**Reaming at a depth of 2,309 feet bls. WOB is 18,000 pounds. Penetration rate for this last foot is 40 minutes per foot but has been averaging 12 minutes per foot.**
0447	**Continue reaming at a depth of 2,313 feet bls with 18 ½-inch bit. Penetration rate is 8 minutes per foot. WOB is 18,000 pounds. RPM is 30.**

0638 **Continue reaming at a depth of 2,318 feet bls with 18 ½-inch bit. Average penetration rate is 22 minutes per foot. WOB is 18,000 pounds. RPM is 30. Jamie Allen (welder) on site.**

0700 **YBI shift change. Mark Devine and crew replacing Dan Murphy and crew.**

0806 **Continue reaming at a depth of 2,322 feet bls with 18 ½-inch bit. Average penetration rate is 8 minutes per foot. WOB is 20,000 pounds. RPM is 30.**

0848 **Deviation survey collected at 2,320 feet bls recording a deviation of 0.01 degrees. Drill crew making connection. Jamie Allen is preparing the bottom joint with external casing packer and YBI positive seal packer.**

0900 **Hugh Klein relieves Aimee Fratarcangeli. Site safety discussed. AF off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/19/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**149**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,322 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,399 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Aimee Fratarcangeli. Site safety discussed. AF off site. YBI at 2,322 feet bls making a connection.**
0912	**YBI is drilling again with 15,000 to 18,000 pounds WOB and a penetration rate of 10 minutes per foot.**
1019	**The cleaning service is on site to clean the trailer.**
1033	**YBI at 2,333 feet bls with 15,000 to 18,000 pounds WOB, 45 rpm, and a penetration rate of 5 minutes per foot.**
1305	**Drilling at 2,354 feet bls with 20,000 pounds WOB and 35 rpm. The penetration rate is varying from 5 to 10 minutes per foot. The conditions are varying from hard and ratty to soft.**
1500	**YBI drilling at 2,367 feet bls with 10,000 pounds WOB and a penetration rate of 2 minutes for the last foot. The penetration rate before that was approximately 10 minutes per foot.**
1725	**Presently dredging at 2,392 feet bls. The cuttings are still showing some cement indicating that the ream is following the cemented pilot hole.**
1845	**YBI still dredging.**
1900	**Dan Murphy and crew replacing Mark Devine and crew.**
1915	**YBI servicing the rig.**

2013 **Drilling at 2,395 feet bls with 10,000 pounds WOB and 35 rpm. The penetration rate is approximately 20 minutes per foot. The conditions are somewhat ratty.**

2043 **YBI at 2,395 feet bls with 20,000 pounds WOB and a penetration rate of approximately 15 minutes per foot.**

2100 **Aimee Fratarcangeli relieving Hugh Klein. The penetrated depth is 2,399 feet bls. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/19/05 2100 to 4/20/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**150**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,399 ft bls
DRILLER: Dan Murphy, Bob Didon.
END DEPTH: 2,422 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation Survey.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli relieves Hugh Klein. Site safety discussed. Hugh Klein off-site. Reaming at 2,399 feet bls.**
2155	**Ream drill pipe stand #29 down and circulating at 2,401 feet bls. WOB 16,000 to 18,000 pounds. Penetration rate is 15 minutes per foot. Some bit chatter through this interval. Deviation survey performed at 2,401 feet and was 0.25 degrees.**
2312	**Reaming at 2,406 feet bls. Minimal bit chatter. RPM's vary from 20 to 30 depending on drilling conditions. RPM of 20 is applied to the intervals of more pronounced bit chatter. RPM of 30 is applied to the intervals of smoother drilling. On average the formation is drilling smooth. WOB: 15,000 to 18,000 pounds. Penetration rate is 10 minutes per foot.**
2350	**Reaming at 2,409 feet bls. WOB is 15,000 to 18,000 pounds, Penetration rate is 20 minutes per foot at 25 rpm.**
0132	**Reaming at 2,411 feet bls, WOB 16,000 to 18,000 pounds at 25 rpm. Penetration rate is 32 minutes per foot.**
0255	**Continue reaming at a depth of 2,414 feet bls with 18 ½-inch bit. Penetration rate is 32 minutes per foot. WOB is 16,000 to 18,000 pounds at 24 rpm.**
0410	**Reaming at a depth of 2,417 feet bls. WOB is 16,000 to 18,000 pounds. Penetration rate is 25 minutes per foot.**

0545 **Continue reaming at a depth of 2,421 feet bls with 18 ½-inch bit. Penetration rate is 32 minutes per foot. WOB is 18,000 pounds. RPM is 24.**

0610 **Continue reaming at a depth of 2,422 feet bls with 18 ½-inch bit. Average penetration rate is 32 minutes per foot. WOB is 18,000 pounds. RPM is 24.**

0700 **YBI shift change. Bob Didon and crew replacing Dan Murphy and crew. Jamie Allen (welder) on site.**

0900 **Alejandra Simon on site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/20/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**151**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,422 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,450 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0830	**Alejandra Simon on site.**
0844	**YBI reaming at 2424 feet bls with 20,000 pounds WOB and a penetration rate of 50 minutes per foot.**
0920	**Pad monitoring wells sampling.**
1044	**YBI reaming at 2,426 feet bls with 20,000 pounds WOB, and a penetration rate of 60 minutes per foot. Rig is shaking violently.**
1320	**Reaming at 2,432 feet bls with 20,000 pounds WOB and a penetration rate of 25 minutes per foot.**
1518	**YBI reaming at 2,437 feet bls with 20,000 pounds WOB and a penetration rate of 15 minutes for the last foot.**
1800	**YBI reaming at 2,443 feet bls with 20,000 pounds WOB and a penetration rate of 20 minutes for foot.**
1900	**Dan Murphy and crew replacing Bob Didon and crew. Servicing rig.**
2000	**Reaming at 2,449 feet bls with 20,000 lbs on bit and a penetration rate of 30 minutes per foot.**
2100	**Aimee Fratarcangeli relieving Alejandra Simon. The penetrated depth is 2,450 feet bls. Site safety discussed. AS off site.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/20/05 2100 to 4/21/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 152**
		X		

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,450 ft bls
DRILLER: Dan Murphy, Bob Didon.
END DEPTH: 2,484 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli relieves Alejandra Simon. Site safety discussed. Alejandra Simon off-site. Reaming at 2,452 feet bls. Penetration rate is 20 minutes per foot. Top head drive leaking.**
2151	**Reaming on drill pipe stand #30 at 2,453 feet bls. WOB 15,000 to 18,000 pounds. Penetration rate is 34 minutes per foot. Some bit chatter through this interval.**
0005	**Reaming at 2,460 feet bls. The driller is attempting to minimize the torque and bit chatter by reducing the RPM's to a constant 20. On average the formation is drilling smooth. WOB: 15,000 to 18,000 pounds. Penetration rate has momentarily decreased to 8 minutes per foot.**
0131	**Reaming at 2,464 feet bls. WOB is 15,000 to 18,000 pounds, Penetration rate is 14 minutes per foot at 20 rpm. Formation drilling very rough with much torque.**
0305	**Reaming at 2,475 feet bls, WOB 16,000 to 18,000 pounds at 20 rpm. Penetration rate is 30 minutes per foot.**
0510	**Continue reaming at a depth of 2,469 feet bls with 18 ½-inch bit. Penetration rate is 13 minutes per foot. WOB is 15,000 to 18,000 pounds at 20 rpm. Washpipe and packer in tophead drive continue to leak. Replacement parts are on site and will be installed once this stand of pipe is drilled down.**
0647	**Reaming at a depth of 2,465 feet bls. WOB is 15,000 to 18,000 pounds. Penetration rate is 32**

minutes per foot. Jamie Allen (welder) on site.

0700 **YBI shift change. Bob Didon and crew replacing Dan Murphy and crew. Crew servicing rig.**

0820 **Reaming at a depth of 2,482 feet bls. WOB is 15,000 to 18,000 pounds. Penetration rate is 8 minutes per foot.**

0900 **Alejandra Simon relieves Aimee Fratarcangeli. Site safety discussed. Aimee Fratarcangeli off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/21/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**153**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,482 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,526 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
0900	**Alejandra Simon on site replacing Aimee Fratarcangeli. AF off site.**
0904	**KD at 2,482 feet bls. Greasing wash pipe to stop the leaking. Deviation survey taken.**
1007	**Resume drilling. Stand #31.**
1307	**Dredging at 2,501 feet bls.**
1524	**Reaming at 2,516 feet bls. The penetration rate has been constant at 10 minutes per foot for the last hour and a half.**
1525	**Dredging.**
1642	**YBI reaming at 2,517 feet bls with 5,000 pounds WOB and a penetration rate of 8 minutes for foot.**
1709	**YBI reaming at 2,522 feet bls with 5,000 to 15,000 pounds WOB and a penetration rate of 6 to 8 minutes for foot.**
1900	**Dan Murphy and crew replacing Bob Didon and crew. Servicing rig. Changing rubber of wash pipe.**
2100	**Aimee Fratarcangeli relieving Alejandra Simon. The penetrated depth is 2,526 feet bls. Site safety discussed. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/21/05 2100 to 4/22/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 154**
		X		

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,526 ft bls
DRILLER: Dan Murphy, Bob Didon.
END DEPTH: 2,530 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli relieves Alejandra Simon. Site safety discussed. Alejandra Simon off-site. Drill crew continues to replace the wash pipe and packer assembly in the tophead drive.**
2145	**Wash pipe and packer replacement complete. Driller attempts to get back to bottom (2,526 feet bls) however, the hole has filled in to a depth of 2,512 ft bls (approximately 14 feet). Driller is re-reaming/dredging to bottom. WOB 5,000 to 7,000 pounds.**
2310	**Continue to re-ream/dredge back to bottom of 2,526 feet bls. Currently 11 feet above bottom.**
0210	**Continue to re-ream/dredge back to bottom of 2,526 feet bls. Currently 9 feet above bottom. Weight on bit is 5,000 to 7,000 pounds.**
0347	**Continue to dredge/re-ream borehole. The airline is not losing pressure therefore the bit is not plugging off however, when the bit is pulled up, footage is lost and must be redrilled. It is expected that larger boulders are falling in the hole. This would explain (1) why the bit is getting stuck, (2) why the bit is not plugging off, (3) the weight on bit required to re-drill the borehole, and (4) the loss of footage. Weight on bit is 15,000 to 20,000 pounds. Bit is approximately 11 feet above bottom.**
0547	**Continue to re-ream/dredge back to bottom of 2,526 feet bls. Currently 5 feet above bottom. Weight on bit is 15,000 to 18,000 pounds. Much torque on bit probably from boulders falling in around the 18 ½-inch bit.**

0700 **YBI shift change. Bob Didon and crew replacing Dan Murphy and crew. Crew servicing rig. Driller pulled the tophead drive up near the crown to service rig and lost an additional 14 feet of reamed hole.**

0820 **Reaming at a depth of 2,526 feet bls. WOB is 15,000 to 20,000 pounds. Back on bottom and resume reaming.**

0900 **Alejandra Simon relieves Aimee Fratarcangeli. Site safety discussed. Aimee Fratarcangeli off site. Reaming at a depth of 2,530 ft bls. WOB is 15,000 to 18,000 pounds. Penetration rate is 10 minutes per foot at 25 rpm.**

Week 12

(04-22)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/22/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**155**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,530ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Alejandra Simon on site replacing Aimee Fratarcangeli. AF off site.
0904	KD at 2,534 feet bls. Reaming is constant at 6 minutes per foot with 5,000 lbs on bit and 30 rpm.
1020	Dredging at 2,535 feet bls. Bottom of borehole is 2,543 feet bls.
1120	Reaming at 2,547 feet bls. 6-4 minutes per foot with 5,000 lbs on bit.
1330	Dredging at 2,522 feet bls. Borehole keeps caving in, bottom of borehole is 2,557 ft bls.
1428	Dredging at 2,517 feet bls (40 feet above bottom).
1830	Dredging with 5,000 to 10,000 lbs WOB at 2,512 feet bls.
1900	Mark Devine and crew replacing Bob Didon and crew. Servicing rig.
2030	Dredging at 2,521 feet bls.
2100	Alejandra Simon off site. No MWH personnel remaining on site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/22/05 2100 to 4/23/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**156**

SHIFT SUMMARY

OBSERVER: None.
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine, Bob Didon.
END DEPTH: 2,557 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**No MWH personnel on site.**

RM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/23/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**157**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,557 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site. YBI has made no progress, dredging continues at 2,521 feet bls.**
1115	**The flow discharge pipe into the slurry tank has a hole. Reaming operations were halted because flow through the hole was splashing outside the containment tank. Called welder to close the hole.**
1155	**Jamie Allen (welder) on site.**
1337	**Welder off site. Resume dredging.**
1504	**Dredging at 2,521 feet bls with 5,000 lbs on bit.**
1830	**Back to bottom but due to the torque the bit was lifted once more and lost 25 feet.**
1900	**Mark Devine and crew replacing Bob Didon and crew. Servicing rig.**
2030	**Dredging at 2,521 feet bls with 20,000 lbs on bit.**
2100	**Alejandra Simon off site. No MWH personnel remaining on site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/23/05 2100 to 4/24/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**158**

SHIFT SUMMARY

OBSERVER: None.
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine, Bob Didon.
END DEPTH: 2,557 ft bls
ACTIVITY: Reaming injection zone with 18 ½-inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**No MWH personnel on site.**

RM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/24/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**159**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,557 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site. YBI is TOOH to inspect bit.**
1040	**TOOH last drill pipe and bottom hole assembly (BHA).**
1100	**TOOH with the bit. The bit looks good. YBI is preparing to TIH.**
1155	**YBI continues to TIH.**
1400	**TIH completed. Resumed dredging operations.**
1800	**Circulating. Unloading fiberglass tubing.**
1900	**Mark Devine and crew replacing Bob Didon and crew. Servicing rig.**
2030	**Crew working on the rig's brakes.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/24/05 2100 to 4/25/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**160**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,557 ft bls
ACTIVITY: 18 ½ inch Injection Zone Ream

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site. YBI currently repairing the Rig Brake System.**
2255	**Dredging resumes. Current depth 2520 ft bls. Jamie Allen off-site.**
0330	**Depth = 2540 ft bls. Dredging suspended to repair leak in Drilling Fluid / Water Supply Line. Jamie Allen on-site.**
0430	**Dredging resumes at 2520 ft bls. Jamie Allen off-site.**
0700	**YBI Shift Change. Dan Murphy and crew replacing Mark Devine and crew. Current depth is 2540 ft bls.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/25/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
	X			**161**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,557 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site replacing Greg Young. No safety issues to be aware of. YBI is dredging at approximately 2,520 feet bls.**
0947	**Dump truck on site to be filled with cuttings from the slurry pit. Trucks are schedule to arrive through out the day.**
1506	**Dredging at 2,540 feet bls with 20,000 to 25,000 lbs on bit.**
1900	**No progress made. Mark Devine and crew replacing Dan Murphy and crew. Servicing rig.**
2034	**YBI continues to dredge at 2,540 feet bls with 20,000 to 25,000 lbs on bit.**
2100	**Greg Young replacing Alejandra Simon. AS off site.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/25/05 2100 to 4/26/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**162**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,557 ft bls
ACTIVITY: 18 ½ inch Injection Zone Ream

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site.**
	YBI is currently dredging at a depth of 2520 ft bls.
0330	**KD Will return to a depth of ~ 2500 ft bls to re-dredge interval to 2560 ft bls.**
0600	**Section of Drill Stem has broken off. TOOH to determine the situation with Video Log.**
0700	**YBI Shift Change. Dan Murphy and crew replacing Mark Devine and crew.**
0800	**TOOH in preparation for video log.**
0900	**Alejandra Simon on-site relieving Greg Young. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/26/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**163**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,557 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone- Fishing.

SUB CONTRACTORS: YBI Geophysical Logging Division, Jammie Allen (welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site replacing Greg Young. No safety issues to be aware of. While dredging at 2,540 feet bls this morning, some of the drill string broke off, YBI is TOOH to check how much of it was broken off.**
0943	**TOOH complete. There are a total of three drill collars (80 feet) in addition to the bit comprising the bottom hole assembly (BHA). Only recovered one drill collar (30 feet long); two of the drill collars (total of 50 feet long) should be at the bottom of the borehole. YBI will now TIH with 31 stands to run a video log.**
1220	**TIH complete. Waiting on loggers.**
1430	**Kenwin Lee (YBI Geophysical Logging Division) on site to run video.**
1543	**Visibility is poor, pumping fresh water down the borehole.**
1645	**Running video. Top of drill collar visible at 2,482 feet bls.**
1653	**YBI will use a "wall hugger" to bring the collar to the center of the borehole and then use an "overshot" that will go over the collar and lock it in. The drill collar will then be pulled out of the borehole. The "wall hugger" needs to be cut to the size of the borehole, therefore, a caliper run will be performed of the 18 ½-inch borehole.**
1715	**Pulling camera out of the hole. Preparing to run caliper log.**
1731	**TOOH with five stands to log from 2,080 feet bls.**

1800 Jammie Allen on site to work on "wall hugger".
1830 Caliper log completed. Borehole is mostly gauged from 2,100 feet bls: 18 ½-inch diameter.
1900 YBI shift change. Mark Devine and crew replacing Dan Murphy and crew. Kenwin Lee off site. Working on cutting the fishing tools and TOOH entirely.
2100 Greg Young replacing Alejandra Simon. AS off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/26/05 2100 to 4/27/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**164**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,557 ft bls
ACTIVITY: Fishing for Broken Drill Stem

SUB CONTRACTORS: YBI Geophysical Kenwin Lee
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on site relieving Alejandra Simon. AS off-site.**
	YBI is currently waiting on a second over shot device to use with Fish Tool.
2230	**YBI begins TIH with Fishing Tools.**
0230	**Heavy Rain and Thunderstorm. TIH suspended.**
0430	**TIH resumes.**
0620	**TIH complete.**
0645	**YBI Geophysical on site.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.**
0745	**Camera is in hole. Attempting to attach to Drill Stem.**
0900	**Hugh Klein on site. GY off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/27/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**165**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,557 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone – fishing for collars.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site replacing Greg Young. Site safety discussed. GY off site. YBI to TOOH in order to change the to a different size overshot tool.**
1240	**YBI has the overshot tool out of the hole.**
1310	**YBI installing/retrofitting the overshot tool. The bit is at 2,540 feet bls and YBI is fishing at 2,480 feet bls.**
1410	**YBI TIH with the overshot tool.**
1545	**Taking water levels in the PMWs.**
1748	**Starting to fish with the video.**
1900	**YBI shift change. Bob Didon and crew replacing Dan Murphy and crew, but Dan Murphy is running the brake handle and staying on.**
2030	**Adjusting the video line.**
2100	**YBI still fishing. Greg Young replacing Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/27/05 2100 to 4/28/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**166**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,557 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 2,557 ft bls
ACTIVITY: Fishing for Broken Drill Stem

SUB CONTRACTORS: YBI Geophysical Clay Ferguson, Jamie Allen (welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site relieving Hugh Klein. HK off-site. YBI is currently injecting water into the borehole to increase video camera clarity.**
2250	**YBI continues attempt to retreive drill stem.**
0130	**Attempt to retreive drill stem with present wall hook failed. YBI to TOOH and begin a new attempt to fish drill stem with an alternate wall hook. Clay Ferguson off-site.**
0530	**TOOH complete.**
0700	**YBI shift change. Dan Murphy and crew replacing Bob Didon and crew. Jamie Allen on-site.**
0900	**HK on-site. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/28/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**167**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,557 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone – fishing for collars.

SUB CONTRACTORS: YBI Geophysical Logging Division; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site. YBI modifying the overshot tool.**
1025	**Sampling the PMWs.**
1115	**YBI TIH with the new overshot tool.**
1520	**JW Craft Company on site servicing the latrines.**
1600	**YBI "fishing" for the collars.**
1650	**YBI has the overshot tool over the drill collars, but the grapple is not "biting" into the top collar and the collars can not be pulled out of the hole. YBI will TOOH and put a different grapple to "fish" the collars out.**
1730	**YBI beginning TOOH.**
1900	**YBI shift change. Bob Didon and crew replacing Dan Murphy and crew.**
1915	**As per YBI, a new tool will not be on site in the morning. No additional fishing tonight.**
2100	**YBI still TOOH. Greg Young relieving Hugh Klein. Site safety discussed. HK off site.**

FORM NO. 01-01

Observer's Initials HK

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/28/05 2100 to 4/29/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**168**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Bob Didon, Dan Murphy
ACTIVITY: Fishing for Broken Drill Stem

START DEPTH: 2,557 ft bls
END DEPTH: 2,557 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site relieving Hugh Klein. HK off-site. YBI is currently TOOH.**
2150	**TOOH complete. Bob Didon and crew off-site. YBI is waiting on arrival of overshot device being flown in from Mississippi. Kevin Greuel remaining on-site.**
0630	**Kevin Greuel off-site to pickup overshot device from Ft. Lauderdale airport.**
0700	**Dan Murphy and crew on-site.**
0900	**HK on-site. GY off-site.**

Week 13

(04-29)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/29/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**169**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,557 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone – fishing for collars.

SUB CONTRACTORS: YBI Geophysical Logging Division; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site. Kevin Greuel picking up the new grapple in Fort Lauderdale for the overshot tool.**
1315	**Kevin Greuel back on site with the new grapples for the overshot tool.**
1400	**YBI putting the new grapples in the overshot tool.**
1504	**YBI TIH with the overshot tool.**
1740	**YBI at the "fish.'' The video is being run in the hole.**
1830	**YBI "fishing" for the collars.**
1900	**Bob Didon and crew relieving Dan Murphy and crew, but Dan Murphy is running the brake handle and staying on.**
1908	**The collars are seated in the grapple.**
1925	**Dan Murphy off site.**
1950	**YBI TOOH with the collars and the bit.**
2100	**YBI still TOOH. Greg Young relieving Hugh Klein. Site safety discussed. HK off site.**

FORM NO. 01-01

Observer's Initials HK

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/29/05 2100 to 4/30/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**170**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,557 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 2,557 ft bls
ACTIVITY: Removing Broken Drill Stem from borehole

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site relieving Hugh Klein. HK off-site. YBI is currently TOOH with broken drill stem attached..**
2240	**TOOH continues. Top of broken stem at pad level. Jamie Allen on-site.**
2335	**Overshot device removed from broken drill stem. Jamie Allen off-site.**
0050	**Drill bit is removed from borehole.**
0210	**New Kelly Hose attached. Replacement collar measured with caliper to determine is there is excess wear. Replacement collar measures out well and will be used.**
0235	**TIH begins.**
0700	**YBI shift change. Dan Murphy and crew on-site. Bob Didon and crew off-site. TIH continues.**
0900	**HK on-site. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/30/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**171**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,557 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Greg Young. No new safety issues to be aware of. GY off site.
0915	YBI has resumed dredging operations, and is currently dredging at approximately 2,512 feet bls.
1102	Currently dredging at 2,520 feet bls with 10,000 to 15,000 pounds WOB.
1121	Dredging operations have stopped because the slurry pit is overflowing with some of the fluid flowing on to the ground surface.
1128	The overflow has been contained and stopped. The leak was caused by a valve that had not been opened.
1305	YBI has resumed drilling operations.
1511	Currently dredging at 2,525 feet bls with 15,000 pounds WOB and 20 rpm.
1717	Dredging at approximately 2,530 feet bls with 10,000 to 15,000 pounds WOB.
1900	Bob Didon and crew relieving Dan Murphy and crew.
1926	Dredging in the same interval. The driller is able to dredge deeper, but every time he picks up, he loses the hole he has just dredged.
2040	The dredging conditions remain the same as reported earlier. Currently using 15,000 pounds WOB and 30 rpm.
2100	Greg Young relieving Hugh Klein. Site safety discussed. HK off site.

FORM NO. 01-01

Observer's Initials HK

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 4/30/05 2100 to 5/1/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**172**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Bob Didon, Mark Devine
ACTIVITY: 18 ½ inch Injection Zone Ream

START DEPTH: 2,557 ft bls
END DEPTH: 2,557 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site relieving Hugh Klein. HK off-site.**
	YBI is currently dredging at ~ 2530 ft bls.
2300	**Depth ~ 2540 ft bls, WOB = 10 – 20K lbs.**
2340	**Bit brought back to ~ 2520 ft bls to re-dredge interval.**
0050	**Depth ~ 2525 ft bls, WOB = 10 – 20K lbs.**
0230	**Depth ~ 2540 ft bls, WOB = 15 – 20K lbs.**
0340	**Bit brought back to ~ 2530 ft bls to re-dredge interval.**
0440	**Depth ~ 2550 ft bls, WOB = 10 – 15K lbs. Re-dredging interval 2480 – 2550 ft bls.**
0700	**YBI shift change. Mark Devine and crew on-site. Bob Didon and crew off-site.**
	Depth ~ 2525 ft bls.
0800	**Depth ~ 2540 ft bls, WOB = 5 – 10K lbs.**
0900	**HK on-site. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/1/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**173**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,557 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. GY off site. YBI is continuing the dredging operations.**
0930	**YBI shutting down briefly to service the rig.**
1134	**Dredging in the interval from 2,525 to 2,535 feet bls with 15,000 pounds WOB and 25 rpm.**
1517	**YBI continues to dredge in the interval from 2,525 to 2,535 feet bls with 15,000 pounds WOB.**
1722	**Dredging from 2,540 to 2,545 feet bls with 15,000 pounds WOB and 30 rpm.**
1900	**Bob Didon and crew relieving Mark Devine and crew. YBI servicing the rig.**
2003	**YBI dredging at 2,545 with 15,000 pounds WOB.**
2100	**Greg Young relieving Hugh Klein. Site safety discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/1/05 2100 to 5/2/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**174**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Bob Didon, Mark Devine
ACTIVITY: 18 ½ inch Injection Zone Ream

START DEPTH: 2,557 ft bls
END DEPTH: 2,560 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site relieving Hugh Klein. HK off-site.**
	YBI is currently dredging at ~ 2550 ft bls.
2200	**Depth ~ 2557 ft bls, WOB = 10 – 15K lbs.**
2300	**Depth ~ 2545 ft bls, WOB = ~ 15K lbs.**
2330	**Depth ~ 2550 ft bls, WOB = 10 – 15K lbs.**
0130	**Depth ~ 2545 ft bls, WOB = 15 – 20K lbs.**
0300	**Depth ~ 2550 ft bls, WOB = ~ 20K lbs.**
0435	**Depth ~ 2560 ft bls. Raising bit to re-dredge interval 2500 – 2550 ft bls.**
0625	**KD @ 2560 ft bls.**
0700	**YBI shift change. Mark Devine and crew on-site. Bob Didon and crew off-site.**
	YBI changing swivel packer.
0900	**HK on-site. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/2/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**175**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,557 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,566 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Hugh Klein on site relieving Greg Young. No new safety issues to be aware of. GY off site. YBI changing the swivel pack.
1025	YBI starting to dredge again.
1201	Currently dredging from 2,550 to 2,560 feet bls with 15,000 pounds WOB and 25 rpm. The hole has been clean all the way to 2,550 feet bls the last few time the bit has been picked up.
1330	YBI has stopped drilling to fix the water pump on the compressor.
1345	YBI drilling again.
1544	The dredging is still being done in the same interval with the same WOB and rpm.
1741	YBI checking the hole from 2,482 to 2,560 feet bls to make sure the entire length is clean.
1900	Dan Murphy and crew relieving Mark Devine and crew. The hole has been drilled all the way down to 2,562 feet bls, and will be checked again to make sure it stays clean after the bit is picked up. YBI will service the rig first.
1955	YBI making a connection at 2,562 feet bls with a single joint (30 feet long).
2045	Drilling at 2,564 ft bls with 5,000 to 10,000 pounds WOB.
2100	Greg Young relieving Hugh Klein. Site safety discussed. HK off site.

FORM NO. 01-01

Observer's Initials HK

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/2/05 2100 to 5/3/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**176**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,566 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 2,613 ft bls
ACTIVITY: 18 ½ inch Injection Zone Ream

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site relieving Hugh Klein. HK off-site. YBI is currently reaming at 2572 ft bls.**
2325	**Reaming. Depth = 2576 ft bls, WOB = 5 – 10K lbs.**
0050	**KD. Depth = 2592 ft bls.**
0130	**YBI is removing 30' joint and attaching string #32.**
0155	**Dredging. Depth ~ 2582 ft bls, WOB = 10K lbs.**
0300	**Dredging. Depth ~ 2585 ft bls, WOB = 5-10K lbs.**
0405	**Dredging. Depth ~ 2591 ft bls, WOB = 5-10K lbs.**
0540	**Reaming. Depth = 2595 ft bls, WOB = 15K lbs, Pen. Rate = 12 min/ft.**
0700	**YBI shift change. Mark Devine and crew on-site. Dan Murphy and crew off-site. Depth = 2610 ft bls. YBI has pulled bit up to dredge the interval 2580 – 2610 ft bls.**
0830	**Reaming. Depth = 2613 ft bls, WOB = 15K lbs, Pen. Rate = 4 min/ft.**
0900	**HK on-site. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/3/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**177**

SHIFT SUMMARY

OBSERVER: Hugh Klein.
START DEPTH: 2,613 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,638 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: Pantropic Power
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. No new safety issues to be aware of. GY off site. YBI at 2,613 feet bls.**
0951	**Currently at 2,615 feet bls with 15,000 pounds WOB, a penetration rate of 25 minutes per foot, and 20 rpm.**
1115	**The cleaning service is on site to clean the trailer.**
1200	**YBI at 2,620 feet bls with 18,000 pounds WOB, a penetration rate averaging 30 minutes per foot.**
1355	**Drilling at 2,622 feet bls with 5,000 to 10,000 pounds WOB, a penetration rate of 5 to 10 minutes per foot.**
1548	**YBI has stopped drilling so Pantropic Power can switch the compressor and then fix the one that has been used. The penetrated depth is 2,630 feet bls.**
1700	**The replacement air compressor does not have a fuel tank so YBI is in the process of rigging up a fuel line.**
1840	**The fuel line is in place for the compressor. Starting to drill.**
1900	**Dan Murphy and crew relieving Mark Devine and crew.**
1910	**The current depth is 2,633 feet bls with 10,000 pounds WOB.**
2030	**YBI at 2,637 feet bls with 10,000 to 15,000 pounds WOB, 30 rpm, and a penetration rate averaging 15 minutes per foot.**

FORM NO. 01-01

Observer's Initials HK

2100 Hugh Klein off site; no MWH staff on site for the night shift

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/3/05 2100 to 5/4/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 178**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,638 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,640 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein off site. YBI at 2,638 feet bls.**
0900	**Aimee Fratarcangeli on site.**

FORM NO. 01-01

Observer's Initials HK; AF

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/4/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**179**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli.
START DEPTH: 2,640 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,667 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Aimee Fratarcangeli on site. YBI dredging at 2,640 feet bls.
0920	Currently reaming at 2,640 feet bls with 15,000 pounds WOB, a penetration rate of 25 minutes per foot, and 20 rpm.
0946	YBI has reamed to a depth of 2,644 feet bls with a WOB ranging from 10,000 to 12,000 pounds.
1105	YBI has been dredging for the past 50 minutes at approximately 3-feet above the bottom of the reamed borehole which is 2,644 feet bls. WOB 15,000 to 18,000 pounds
1145	Mark Chandler on site.
1230	YBI has stopped drilling to patch the 6-inch diameter return line. The penetrated depth is 2,630 feet bls.
1400	Progress meeting #3 with Lee County staff including Luis Molina, Jerry Johnson, James McPhillips, Kevin Greuel (YBI), Aimee Fratarcangeli (MWH), and Mark Chandler (MWH).
1610	Resume reaming at 2,630 feet bls after repairing the cuttings return line.
1700	Ream to a depth of 2,654 feet bls and begin dredging 2-feet above bottom.
1715	Purge and sample pad monitor wells for field analyses of pH, specific conductance, temperature, and chlorides. The current depth is 2,654 feet bls with 20,000 to 22,000 pounds WOB.
1840	YBI at 2,662 feet bls with 20,000 to 22,000 pounds WOB, 30 rpm, and a penetration rate

averaging 12 minutes per foot.

1900 Dan Murphy and crew relieving Mark Devine and crew.

1935 Reaming at 2,664 feet bls; WOB is 20,000 pounds; penetration rate is 20 minutes per foot.

2040 Reaming at 2,667 feet bls; WOB is 20,000 pounds; penetration rate is 20 minutes per foot.

2100 Aimee Fratarcangeli off site; no MWH staff on site for the night shift

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/4/05 2100 to 5/5/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 180**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,667 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,690 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli off site. YBI at 2,690 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/5/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**181**

SHIFT SUMMARY

OBSERVER: Alejandra simon
START DEPTH: 2,690 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,716 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: Jammie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	Alejandra Simon on site. YBI reamng at 2,690 feet bls with 15,000 to 18,000 lbs on bit.
1200	Currently reaming at 2,697 feet bls with a penetration rate of 20 minutes per foot..
1255	Dredging at 2,699 feet bls- 2 feet above bottom (2,701 ft bls), dredging with 15,000 to 20,000 lbs WOB.
1400	Reaming at 2,702 feet bls. Reaming slowly because the air is plugging off. Rocks reamed through need to be removed completely before reaming another foot.
1500	Depth is 2,703 feet bls. Reaming with 15,000 to 20,000 lbs on bit and a penetration rate of 1 foot per hour.
1655	Reaming at 2,708 feet bls with 30,000 lbs on bit and a penetration rate of 20 minutes per foot.
1832	Bottom of the borehole is 2,713 feet bls, currently dredging at 2,703 feet bls.
1900	YBI shift change. Dan Murphy replacing Bob Didon and crew.
2000	Dredging at 2,711 feet bls with 15,000 lbs on bit.
2044	Reaming at 2,714 feet bls with 10,000 lbs on bit
2100	YBI reaming at 2,716 feet bls. Alejandra Simon off site. No MWH personnel remaining on site for the night.

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/5/05 2100 to 5/6/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 182**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,716 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,744 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Alejandra Simon off site. YBI at 2,716 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

Week 14

(05-06)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/6/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**183**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,744 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,756 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. No MWH personnel on site. YBI reaming at 2,744 feet bls .**
0950	**Currently reaming at 2,750 feet bls with a penetration rate of 20 minutes per foot and 20,000 to 25,000 lbs on bit..**
1042	**Current depth is 2,754 feet bls. Making connection and repairing flow line.**
1221	**Completed repairs on flow line. Resume reaming.**
1300	**Stopped reaming to repair air line.**
1650	**Completed repairs on air line.**
1800	**Resume reaming from 2,750 feet bls.**
1900	**YBI shift change. Dan Murphy replacing Bob Didon and crew. YBI reaming at 2,756 feet bls. Alejandra Simon off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/6/05 2100 to 5/7/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 184**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,756 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,779 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Alejandra Simon off site. YBI at 2,756 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/7/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**185**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,779 ft bls
DRILLER: Bob Didon; Dan Murphy
END DEPTH: 2,803 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. No MWH personnel on site. Current depth is 2,779 feet bls . Servicing rig.**
1030	**Currently reaming at 2,785 feet bls with a penetration rate of 15 minutes per foot and 20,000 to 25,000 lbs on bit..**
1300	**Dredging at approximately 2,779 feet bls. Total depth of the borehole is 2,794 feet bls.**
1418	**Dredging at approximately 50 feet above bottom. Total depth of the borehole is 2,796 feet bls.**
1830	**Dredging at approximately 1 foot above bottom. Total depth of the borehole is 2,802 feet bls.**
1835	**KD at 2803 feet bls. Will pick up the stand and dredge borehole.**
1900	**YBI shift change. Dan Murphy replacing Bob Didon and crew. Servicing rig.**
2000	**Alejandra Simon off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/7/05 1900 to 5/8/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 186**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,803 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,803 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2000	**Alejandra Simon off site. YBI at 2,803 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/8/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**187**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,803 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,816 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Bob Didon and crew on site replacing Mark Devine and crew. Servicing rig. Bottom of the borehole is 2,803 feet bls. YBI will start repair of the air line.**
1150	**Completed air line repairs.**
1300	**Dredging at approximately 2,762 feet bls.**
1330	**Back on bottom at 2,803 feet bls.**
1600	**Dredging. Bottom of the borehole is 2,808 feet bls.**
1720	**Reaming at 2,809 feet bls.**
1800	**Reaming at 2,812 feet bls.**
1900	**YBI shift change, Mark Devine and crew replacing Bob Didon and crew. YBI reaming at 2,816 feet bls. Alejandra Simon off site. No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/8/05 1900 to 5/9/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 188**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,816 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,826 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2000	**Alejandra Simon off site. YBI at 2,816 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/9/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**189**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,826 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,842 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	Alejandra Simon on site. Bob Didon and crew on site replacing Mark Devine and crew. Servicing rig. Reaming at 2,826 feet bls.
0827	Dredging at 2,824 feet bls with 10,000 lbs on bit.
0900	Dredging at 2,823 feet bls with 10,000 lbs on bit.
1027	Dredging at 2,823 feet bls with 10,000 to 25,000 lbs on bit.
1330	Nuts and bolts falling off top drive. Stopped dredging to repair.
1500	Back on bottom of borehole at 2,826 feet bls. Reaming with 15,000 to 18,000 lbs on bit.
1640	Reaming at 2,829 feet bls with 15,000 to 18,000 lbs on bit.
1745	Reaming at 2,835 feet bls with 5,000 to 10,000 lbs on bit with a penetration rate of 10-8 minutes per foot.
1830	Reaming at 2842 feet bls with a penetration rate of 6 minutes per foot.
1900	YBI shift change, Mark Devine and crew replacing Bob Didon and crew. Alejandra Simon off site. No MWH personnel remaining on site for the night.

FORM NO. 01-01

Observer's Initials AS

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/9/05 1900 to 5/10/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 190**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,842 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,843 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2000	**Alejandra Simon off site. YBI at 2,842 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/10/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**191**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,843 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,843 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site replacing Mark Devine and crew. Servicing rig. Dredging at 2,828 feet bls**
1014	**Dredging at 2,823 feet bls with 5,000 lbs on bit.**
1800	**Dredging at 2,833 feet bls with 10,000 lbs on bit.**
1900	**Mark Devine and crew on site replacing Dan Murphy and crew. Dredging continues. Alejandra Simon off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/10/05 1900 to 5/11/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 192**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,842 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,843 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2000	**Alejandra Simon off site. YBI at 2,842 feet bls.** **No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/11/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**193**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy, Mark Devine
ACTIVITY: 18 ½ inch Injection Zone Ream

START DEPTH: 2,843 ft bls
END DEPTH: 2,832 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Pad Monitor Wells.

TIME	DESCRIPTION
0900	**Greg Young on-site.**
	YBI is currently reaming at 2843 ft bls and preparing to TOOH to inspect drill bit.
1230	**TOOH complete. The drill bit is in good shape. TIH begins.**
1230	**KD. Depth = 2592 ft bls.**
1540	**TIH complete. YBI is currently dredging at about 2603 ft bls.**
1635	**KD at 2643 ft bls. Adding string to continue dredging operations.**
1720	**Depth ~ 2650 ft bls, WOB = 10-15K lbs.**
1900	**YBI shift change. Mark Devine and crew on-site. Dan Murphy and crew off-site.**
1945	**KD at 2800 ft bls. Raising bit to 2720 ft bls to confirm that the borehole is clean.**
2100	**Richard Walther on-site. Greg Young off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/11/05 2100 to 5/12/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**194**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 2,832 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,843 ft bls
ACTIVITY: 18½-inch ream for the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young offsite. Richard Walther onsite. No new safety issues. Reaming @ 2,832 ft bls, with 5-10 K WOB; very rough drilling conditions.**
0200	**Reaming @ 2,837 ft bls, drilling conditions unchanged.**
0700	**YBI shift change; Mark Devine and crew to Dan Murphy and crew. Reaming @ 2,841 ft bls; drilling conditions unchanged.**
0900	**Greg Young onsite. Richard Walther offsite. No new safety issues.**

FORM NO. 01-01

Observer's Initials RAW

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/12/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 195**
		X		

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,842 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: 18 ½ inch Injection Zone Ream

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Richard Walther off-site. YBI is currently reaming at 2843 ft bls and preparing to TOOH to inspect drill bit.**
1000	**Dredging at 2842 ft bls.**
1220	**Depth ~ 2845 ft bls. 5-10K lbs WOB.**
1450	**Depth ~ 2850 ft bls. 5-10K lbs WOB. YBI will raise the drill bit to 2840 ft bls to clear the borehole.**
1700	**Drilling has reached TD (2860 ft bls). TOOH to 2060 to clear the interval 2060 – 2860 ft bls.**
1900	**YBI shift change. Bob Didon and crew on-site. Dan Murphy and crew off-site. Begin TIH.**
2040	**Obstruction encountered at ~2680 ft bls. Will dredge from ~2650 to 2690 ft bls.**
2100	**Richard Walther on-site. Greg Young off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/12/05 2100 to 5/13/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**196**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine/Bob Didon; Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: 18½-inch wiper trip of the injection zone.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young offsite. Richard Walther onsite. No new safety issues. Performing wiper trip of borehole to clear debris @ 2,803 ft bls.**
2350	**Cleared borehole to TD (2,860 ft bls). TOOH to 2,100 to perform 2nd wiper trip to TD.**
0700	**YBI shift change from Bob Didon/Mark Devine and crew to Dan Murphy and crew. Servicing rig.**
0715	**Continue wiper trip of borehole.**
0900	**Greg Young onsite. Richard Walther offsite. No new safety issues.**

FORM NO. 01-01

Observer's Initials RAW

Week 15

(05-13)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/13/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**197**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Wiper trips of open borehole

SUB CONTRACTORS: Jamie Allen (welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Richard Walther off-site. No safety issues. YBI is currently making a wiper trip to clear the borehole. Wiper trips are planned for the entire day.**
1300	**Jamie Allen onsite to weld minor cracks developing in the drill rig due to the chatter that has been occurring during the dredging/reaming operations.**
1420	**Jamie Allen offsite.**
1555	**Wiper trips resume.**
1900	**YBI shift change. Bob Didon and crew on-site. Dan Murphy and crew off-site.**
2100	**Richard Walther on-site. Greg Young off-site**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/13/05 2100 to 5/14/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**198**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Wiper trips of open borehole

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Richard Walther on-site. Greg Young off-site. No safety issues. Wiper trips ongoing to clear open borehole.**
2300	**Current wiper trip completed to TD. Pulling 10 stands for another wiper trip.**
0100	**Performing wiper trip.**
0645	**Current wiper trip completed to TD. Pulling 9 stands for another wiper trip.**
0700	**YBI shift change from Bob Didon and crew to Dan Murphy and crew.**
0900	**Greg Young onsite. Richard Walther offsite. No safety issues.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/14/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**199**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Wiper trips of open borehole, Rig Maintenance.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Richard Walther off-site. No safety issues. YBI is currently making a wiper trip to clear the borehole.**
1120	**Rig maintenance being performed.**
1255	**Replacing rubber gaskets on "stripper head".**
1340	**YBI beginning to TIH.**
1530	**Circulating.**
1750	**YBI beginning to TOOH.**
1900	**YBI shift change. Bob Didon and crew on-site. Dan Murphy and crew off-site. YBI begins TIH.**
2100	**Hugh Klein on-site. Project progress and site safety discussed. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/14/05 2100 to 5/15/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 200**
		X		

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Geophysical logging and final casing run.

SUB CONTRACTORS: YBI Geophysical Logging; Welders: Jamie Allen, Eddie Bankston, and Eddie Mac.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Greg Young. No new safety issues to be aware of. GY off site.**
2125	**YBI TOOH. After YBI Is out of the borehole, the hole will be logged (X-Y caliper log), and if the hole is clear to TD, the casing run will follow. If the hole is not clear, then YBI will TIH and clean the hole. The welders are on standby.**
0020	**Jim Goodwin and Clay Ferguson (YBI Geophysical) on site.**
0135	**Starting to run the X-Y caliper log.**
0300	**Finished with the X-Y caliper log. The welders will be here at 0700. YBI is mixing kill in preparation for the casing run.**
0700	**Mark Devine and crew relieving Bob Didon and crew.**
0723	**First weld of the final casing run starting. Welding joint #2 to joint #1.**
0759	**Welding joint #3 to joint #2.**
0828	**Welding joint #4 to joint #3.**
0856	**Welding joint #5 to joint #4.**
0900	**Greg Young on site relieving Hugh Klein. Safety issues discussed, particularly welding safety. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/15/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 201**
		X		

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Welding Final Casing

SUB CONTRACTORS: Eddie Mac, Jamie Allen, Eddie Bankston, Ron Bankston, Richard Harris, Anthony Stewart (welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Hugh Klein off-site. Welding safety discussed. Currently welding casing #5 to casing #4.**
1900	**YBI shift change. Bob Didon and crew on-site. Mark Devine and crew off-site. Welder shift change. Ron Bankston, Richard Harris and Anthony Stewart on-site. Eddie Mac, Jamie Allen and Eddie Bankston off-site. Finished welding casing #26 to casing #25.**
2100	**HK on-site. Project progress and site safety discussed. GY off-site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/15/05 2100 to 5/16/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 202**
		X		

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Final casing run.

SUB CONTRACTORS: Welders: Ron Bankston, Richard Harris, Anthony Stewart, Jamie Allen, Eddie Bankston, and Eddie Mac.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein on site relieving Greg Young. Welding safety discussed. GY off site.**
2108	**Welding joint #31 to joint #30.**
2240	**Welding joint #35 to joint #34.**
0049	**Welding joint #40 to joint #39.**
0315	**Welding joint #45 to joint #44.**
0519	**Welding joint #50 to joint #49.**
0650	**Jamie Allen, Eddie Bankston, and Eddie Mac relieving Ron Bankston, Richard Harris, and Anthony Stewart.**
0700	**Mark Devine and crew relieving Bob Didon and crew.**
0755	**Welding joint #54 to joint #53.**
0807	**The last joint of the final casing has been welded on. The casing will be landed, and then preparations will be made to pressure test the casing with a packer set at the bottom of the casing.**
0835	**Evans Oil on site delivering fuel.**
0900	**Greg Young on site relieving Hugh Klein. Safety issues discussed. HK off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/16/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 203**
		X		

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Preparation for Pressure Test

SUB CONTRACTORS: Eddie Mac, Jamie Allen and Eddie Bankston (Welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Hugh Klein off-site. YBI is currently welding the Pad Eyes.**
1010	**Pad Eyes continue to be welded.**
1045	**Pad Eye welding complete. Top of casing is cut off. Casing is Landed.**
1055	**Eddie Mac and Eddie Bankston off-site. YBI removing extra length of casing from rig pad.**
1140	**Begin preparations for pressure test.**
1320	**Jamie Allen off-site. YBI measuring tremie pipe.**
1530	**Installation of tremie pipe and pressure test cable begins.**
1700	**Jamie Allen on-site.**
1900	**YBI shift change. Bob Didon and crew on-site. Mark Devine and crew off-site. Jamie Allen is welding cover to the casing for the pressure test.**
2015	**Jamie Allen off-site.**
2030	**YBI is bringing pressure up on the casing.**
2100	**HK on-site. Project progress and site safety discussed. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/16/05 2100 to 5/17/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 204**
		X		

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon; Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Pressure test on the final casing and preparing to cement the casing in place.

SUB CONTRACTORS: Jamie Allen.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site. YBI is inflating the packer so that the pressure test can be run on the final casing before it is cemented in place.
2125	YBI is pressuring up the casing for the pressure test.
2143	Casing pressure test beginning at 180 psi.
2243	After 1 hour, the casing pressure is at 178.5 psi (< 1% change in pressure).
2250	YBI deflating the packer.
2330	YBI TOOH with the packer.
0128	The packer is out of the hole.
0145	YBI TIH with the tremie tubing that will be used to cement the casing in place.
0330	Finished TIH with the tremie tubing.
0340	YBI rigging up the cement lines and cementing equipment.
0700	Mark Devine and crew relieving Bob Didon and crew.
0858	YBI beginning to mix a small amount of cement for the first small shot.
0900	Greg Young on site relieving Hugh Klein. Safety issues discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/17/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 205**
		X		

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Preparation for Cementing

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site. Hugh Klein off-site. YBI is currently mixing a 55 gallon barrel for cementing.**
0950	**1 bbl on cement down borehole.**
1220	**Tag at ~ 2098 – 2099 ft bls (about 0.5 ft higher than last tag) 1 additional bbl of cement to be added.**
1500	**Tag at ~ 2098 – 2099 ft bls (no measured lift) YBI will pump 50 gallons of gravel into borehole followed by 2 bbls of cement.**
1700	**2 bbls of cement added on top of gravel.**
1900	**YBI shift change. Dan Murphy and crew on-site. Mark Devine and crew off-site**
1940	**Tag @ ~ 2098 ft bls (~ 0.5 ft higher then tags at 1220 and 1500). YBI will pump 8 bbls of cement now and anticipate standard cementing to follow.**
2040	**YBI currently mixing kill to facilitate cementing operations. Josh Brown of Florida Cementing to arrive shortly.**
2100	**HK on-site. Project progress and site safety discussed. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/17/05 2100 to 5/18/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 206**
			X	

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing the final casing in place.

SUB CONTRACTORS: Florida Cementing; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	Hugh Klein on site relieving Greg Young. No new safety issues to be aware of. GY off site.
2126	Beginning of Stage 1 of cementing.
2145	Stage 1 of cementing completed (8 BBLs).
0110	The first stage did not result in any lift, so YBI is bringing a welder out to add another joint on top of the final casing string. This is being done so that the casing can be lowered some more in order to create a better seal for the cementing.
0230	Jamie Allen on site to bevel and weld the casing.
0530	Both pieces of casing have had the end squared off and beveled, and now are being welded together.
0700	Mark Devine and crew relieving Dan Murphy and crew.
0715	The casing has been welded together and the gussets are being cut off.
0755	The gussets have been cut off, and the casing is being lowered.
0803	The casing has been lowered 6 inches and an extra 50,000 pounds has been set on the external casing packer.
0820	Welding the gussets back on the casing.
0900	Alejandra Simon on site relieving Hugh Klein. Safety issues discussed. HK off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/18/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**207**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing of final 20-inch casing.

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on-site relieving Hugh Klein. Site safety discussed. Hugh Klein off-site. YBI working on welding the gussets back on the casing.**
0957	**Pad monitoring wells being sampled.**
1226	**Cutting the top section of casing that was previously welded on in order to lower the string to create a better seal.**
1320	**Welded the header back on the casing. TIH with tremie tubing in the annulus.**
1700	**Pumped ten 5-gallon buckets of gravel.**
1820	**Tagged gravel at 2,095 feet bls**
1831	**Mixing one barrel of cement.**
1840	**Pumped barrel of cement – 14.3 lbs/gal plus added CaCl.**
1842	**730 barrels of chase.**
1857	**WOC**
1900	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.**
2095	**Tagged top of cement at 2,095 feet bls.**
2100	**Aimee Fratarcangeli on site. Alejandra Simon off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/18/05 2100 to 5/19/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 208**
		X		

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy; Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing the 20-inch steel final casing string.

SUB CONTRACTORS: Florida Cementing
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli on site relieving Alejandra Simon. Site safety discussed. Alejandra Simon off site.**
2105	**Tag gravel +neat cement bridge stage #A at 2,095 feet bpl. This was a loose tag because of the gravel. Drill crew is mixing neat cement with calcium for bridge stage #B. The cement is mixed to a weight of 14.3 pounds per gallon.**
2114	**Begin pumping bridge stage #B**
2116	**Bridge stage #B complete. Pumped 1.3 BBL of neat cement with calcium.**
2305	**Tag bridge stage #B at 2,092 feet bpl. Three feet of fill which is close to theoretical fill.**
2342	**Pump bridge stage #C.**
2347	**End pumping at 1.3 BBLs of neat cement with calcium. Cement weight was 14.3 pounds per gallon. Wait on cement.**
0240	**Tag bridge stage #C at 2088.5. This equates to 3.5 feet of fill whch is very close to theoretical fill.**
0316	**Begin pumping bridge stage #D.**
0318	**Bridge stage #D complete at 1.3 BBL of neat cement with calcium. Weight of cement is 14.3 pounds per gallon.**
0640	**Tag bridge stage #D at 2,079 feet bpl. There is now approximately 20 feet of combined fill above**

the external packer. Kevin Greuel will now pump a larger lift of Neat cement.
0722 Begin pumping Neat cement
0742 Cementing complete with 75 barrels pumped and an expected theoretical tag of 1,940 feet.
0800 Wait on cement
0900 Alejandra Simon on site relieving Aimee Fratarcangeli. Safety issues discussed. AF off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/19/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X	X	
Humidity	Dry	Moderate	Humid	**Report No. 209**
		X		

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing of final 20-inch casing.

SUB CONTRACTORS: YBI Geophysical Logging
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on-site relieving Aimee Fratarcangeli. Site safety discussed. ABF off-site. WOC.**
1030	**Clay Ferguson (YBI Geophysical Logging) on site to conduct temperature log.**
1100	**Running temperature log.**
1127	**Temperature log completed. Estimated cement top is 1,940 feet bls.**
1204	**Tagged top of cement at 1,930 feet bls.**
1220	**Jimmy Brantley (Florida Cementing) on site to run Stage 3 of cementing.**
1231	**Begin Stage 3 of cementing.**
1315	**Completed Stage 3 with 77 barrels of neat cement. WOC.**
1550	**Running temperature log.**
1605	**Temperature log completed. Estimated cement top is 1,798 feet bls.**
1620	**Clay Ferguson off site.**
1650	**Tagged top of cement at 1,781 feet bls.**
1817	**Josh Brown (Florida Cementing) on site to run Stage 4 of cementing.**
1830	**Begin Stage 4 of cementing.**
1900	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.**
1932	**Completed Stage 4 with 168 barrels of 12% gel – 12.6 lbs/gal. WOC.**

2100 Aimee Fratarcangeli on site. AS off site.

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/19/05 2100 to 5/20/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 210**
		X		

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing the 20-inch steel final casing string.

SUB CONTRACTORS: Florida Cementing; Youngquist Geophysical Logging
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	Aimee Fratarcangeli on site relieving Alejandra Simon. Site safety discussed. Alejandra Simon off site.
2200	No activity on site. Waiting on cement to cure. Estimated time to run the temperature log is 0230. Driller Dan Murphy has two helpers tonight.
0000	Waiting on cement.
0145	Clay Ferguson and helper Jim on site to run temperature log of previous stage of cement
0239	Geophysical logger Clay Ferguson estimates top of cement lift at approximately 1,498 feet which is inside the 30-inch casing.
0305	Clay Ferguson and helper off site
0310	Josh Brown with Florida Cementing on site.
0335	Cement sample in cup is still soft therefore Kevin Greuel wants continue allowing cement to cure. Wait on cement.
0500	The sample of 12% from the previous cement lift is still soft. Continue waiting on cement to cure.
0630	Driller prepares to tag cement.
0700	Tag cement lift at 1471 feet. Shift change. Bob Didon and crew replace Dan Murphy and crew.
0730	Bulk cement truck on site loading silo. A dry bulk sample was collected.

0837 Begin Stage #5 cementing with 132 barrels of Neat cement with 12% bentonite additive.
0900 Alejandra Simon on site relieving Aimee Fratarcangeli. Safety issues discussed. AF off site.

Week 16

(05-20)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/20/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**211**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing of final 20-inch casing.

SUB CONTRACTORS: YBI Geophysical Logging, Florida Cementing
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on-site relieving Aimee Fratarcangeli. Site safety discussed. WOC.**
0930	**ABF off site.**
1510	**Clay Ferguson (YBI Geophysical Logging) on site to run temperature log.**
1519	**Running temperature log. Logger's estimate of cement top is 1,187 feet bls.**
1535	**TOOH with logging tool.**
1700	**Tagged top of cement at 1,156 feet bls for a total lift of 315 feet.**
1645	**Josh Brown (Florida Cementing) on site to run Stage 6 of cementing.**
1804	**Begin Stage 6.**
1836	**Completed Stage 6 with 132 barrels of 12% gel-12.6 lbs/gal.**
1900	**YBI shift change. Dan Murphy and crew replacing Bob Didon and crew.**
2100	**Aimee Fratarcangeli on site. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/20/05 2100 to 5/21/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**212**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing the 20-inch steel final casing string.

SUB CONTRACTORS: Florida Cementing; Youngquist Geophysical Logging
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli on site relieving Alejandra Simon. Site safety discussed. Alejandra Simon off site.**
2200	**No activity on site. Waiting on cement to cure. Estimated time to run the temperature log is 0400.**
0000	**Waiting on cement.**
0200	**Waiting on cement.**
0335	**Jim Goodwin and John Kathey on site to run temperature log of previous stage of cement**
0415	**Geophysical logger John Kathey estimates top of cement lift at approximately 857 feet bpl.**
0702	**Tag cement lift at 850 feet. Shift change. Bob Didon and crew replace Dan Murphy and crew.**
0730	**Kevin Greuel pulls tremie to count.**
0335	**Cement sample in cup is still soft therefore Kevin Greuel wants continue allowing cement to cure. Wait on cement.**
0500	**The sample of 12% from the previous cement lift is still soft. Continue waiting on cement to cure.**
0630	**Driller prepares to tag cement.**
0700	**Shift change. Bob Didon and crew replace Dan Murphy and crew.**
0730	

FORM NO. 01-01

Observer's Initials AF

0837
0900 Alejandra Simon on site relieving Aimee Fratarcangeli. Safety issues discussed. AF off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/21/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**213**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing of final 20-inch casing.

SUB CONTRACTORS: YBI Geophysical Logging, Florida Cementing
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on-site relieving Aimee Fratarcangeli. Site safety discussed. Stage 7 of cementing in progress..**
0928	**Completed stage 7 with 151 barrels of 12% gel- 12.6 lbs/gal. WOC.**
1053	**Cement delivery, collected dry sample.**
1600	**John Cathey (YBI Geophysical Logging) on site to run temperature log.**
1630	**Jim Goodwin (YBI Geophysical Logging) on site.**
1650	**End of temperature log. Logger's estimate of cement top is 546 feet bls.**
1803	**Tagged top of cement at 539 feet bls. Josh Brown (Florida Cementing) on site to run Stage 8 of cementing.**
1822	**Begin Stage 8.**
1922	**Completed Stage 8 with 151 barrels of 12% gel-12.6 lbs/gal.**
1900	**YBI shift change. Dan Murphy and crew replacing Bob Didon and crew.**
2100	**Aimee Fratarcangeli on site. AS off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/21/05 2100 to 5/22/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 214**
		X		

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy; Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing the 20-inch steel final casing string.

SUB CONTRACTORS: Youngquist Geophysical Logging
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli on site relieving Alejandra Simon. Site safety discussed. Alejandra Simon off site.**
2200	**No activity on site. Waiting on cement to cure. Estimated time to run the temperature log is 0700 am.**
0000	**Waiting on cement.**
0400	**Waiting on cement.**
0635	**John Kathey on site to run temperature log of previous stage of cement (Stage #8).**
0700	**Shift change. Bob Didon and crew replace Dan Murphy and crew.**
0727	**Geophysical logger John Kathey estimates top of cement lift at approximately 150 feet bpl.**
0800	**Driller prepares to tag cement.**
0900	**Alejandra Simon on site relieving Aimee Fratarcangeli. Safety issues discussed. AF off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/22/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**215**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing of final 20-inch casing.

SUB CONTRACTORS: YBI Geophysical Logging
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on-site relieving Aimee Fratarcangeli. Site safety discussed.**
0925	**Tagged stage 8 at 196 feet bls. TOOH with tremie tubing.**
1144	**Well is alive. Adding salt to the borehole.**
1500	**Monitoring water level inside borehole.**
1800	**Clay Ferguson (YBI Geophysical Logging Division) on site to conduct Cement Bond Log (CBL).**
1900	**Running CBL. Amiee Fratarcangeli on site to witness CBL.** **YBI shift change. Mark Devine and crew replacing Bob Didon and crew.**
2100	**Alejandra Simon off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/22/05 2100 to 5/23/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**216**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Run CBL, Cementing the 20-inch steel final casing string.

SUB CONTRACTORS: Youngquist Geophysical Logging; Jamie Allen (welder); Florida Cementing Inc.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli on site to witness Cement Bond Log run. Cement Bond tool already calibrated and downhole upon arrival. CBL logging initiated at 2,095 feet bpl (just above YBI packer). Tool calibrated at 32 milliVolts at 170 feet bpl (just above top of cement). Tool running up hole approximately 20 feet per minute.**
2035	**CBL run stopped just above cement at 170 feet (free pipe) to confirm the 32 milliVolts calibration value. A second pass will be run to confirm cement bond log.**
2045	**Begin second pass with cement bond tool.**
2211	**Second pass complete and ran uphole at approximately 30 feet per minute.**
2310	**Driller tags lift #8 at 186 and rigging up for lift #9.**
2333	**Clay Ferguson delivers 20 copies of CBL.**
0026	**Josh Brown (Florida Cement Inc.) on site.**
0038	**Begin lift #9 pumping 35 barrels of Neat + 12% bentonite. This lift will bring cement to 107 feet bpl.**
0051	**Stop pumping and wait on cement. Drill crew prepares to remove the annular plate from the wellhead.**
0500	**Cement too soft to tag. Wait on cement.**
0630	**Cement still too soft to tag. Continue waiting on cement.**

0700 Shift change. Bob Didon and crew replace Mark Devine and crew.
0900 Alejandra Simon on site relieving Aimee Fratarcangeli. Safety issues discussed. AF off site.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/23/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**217**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing of final 20-inch casing.

SUB CONTRACTORS: YBI Geophysical Logging
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on-site relieving Aimee Fratarcangeli. Site safety discussed.**
0945	**Crew getting ready to TIH with 18 stands to circulate and cool casing. Cement from stage 9 is still soft.**
1225	**Cutting top of 20-inch casing.**
1330	**TIH with 18 stands. Per Kevin Greuel topping of the cement from stage 9 to surface will be done after the pressure test of the cemented 20-inch casing is performed.**
1400	**TIH complete. Circulating.**
1600	**Continue to circulate.**
1845	**Completed TIH with 7 more stands.**
1900	**YBI shift change. Mark Devine and crew replacing Bob Didon and crew. Will service rig and continue to circulate.**
2100	**Aimee Fratarcangeli on site relieving Alejandra Simon, AS off site.**

MWH

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/23/05 2100 to 5/24/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No. 218**
		X		

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine; Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Prepare 20-inch casing for pressure test.

SUB CONTRACTORS: Jamie Allen (welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Aimee Fratarcangeli on site to relieve Alejandra Simon. Site safety discussed..**
2130	**YBI has been circulating fluid through the drill pipe at a depth of 1400 feet and 2000 fee bpl for approximately 7.5 hours. They are preparing to trip out of the casing.**
2320	**All drill pipe is out of the hole.**
0035	**Begin tripping in hole with 11-inch diameter single point packer to a depth of 2,050 feet bpl for pressure test of the 20-inch steel casing.**
0515	**Packer is suspended in the casing.**
0700	**Shift change. Bob Didon and crew replace Mark Devine and crew.**
0800	**Alejandra Simon on site relieving Aimee Fratarcangeli. Safety issues discussed. AF off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/24/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**219**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon, Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Pressure test and video log of 20-inch final steel casing.

SUB CONTRACTORS: YBI Geophysical Logging, Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0800	**Alejandra Simon on-site relieving Aimee Fratarcangeli. Site safety discussed. YBI preparing to run pressure test.**
0850	**FDEP confirms not attending pressure test**
0900	**Welder working on wellhead.**
0930	**Lowering packer to 2,050 feet bls.**
0935	**Inflating packer.**
1000	**Packer inflated to 500 psi.**
1025	**Received calibration certification for pressure gauges from YBI.**
1027	**Start pressure test with initial pressure of 175 psi.**
1127	**End of pressure test with a 1.5-psi drop in 60 minutes.**
1208	**Deflated packer. TOOH with tremie tubing.**
1430	**TOOH completed. Packer out of the borehole.**
1500	**Preparing casing for video logging tool.**
1540	**Pumping fresh water down the borehole at 100 gpm.**
1640	**John Cathey (YBI Geophysical Logging Division) on site to run video log of 20-inch casing.**
1712	**Start video. In order to not scratch the packer with the tool's centralizers, the video will only be run to 2095 feet bls. The open borehole will be logged with the FRP.**

1739 **Stopped video due to lack of clarity.**
1810 **Continue video from 780 feet bls.**
1900 **Mark Devine and crew replacing Bob Didon and crew. Pumping fresh water at 55 gpm down the borehole.**
2050 **End of video.**
2100 **Alejandra Simon off site. No MWH personnel remaining on site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/24/05 2100 to 5/25/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 220**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine; Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Preparing for the FRP installation.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Alejandra Simon off site. YBI beginning to prepare for the FRP installation. No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/25/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**221**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Cementing to surface and preparing for the FRP installation.

SUB CONTRACTORS: Future Pipe Industries; Florida Cementing; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site. No MWH staff on site last night. YBI preparing for FRP installation.**
0915	**YBI laying down drill pipe.**
1315	**Tanker from YBI on site to haul material from the slurry pit.**
1400	**All the drill pipe has been laid down. The casing is being cut in preparation for the FRP run and the final well head.**
1529	**Frac tank being delivered. The tank will be used for mixing Barracor.**
1821	**Starting the final stage of cement for the final casing.**
1836	**Final stage completed (47 BBLs).**
1900	**Mark Devine and crew replacing Dan Murphy and crew. Preparations continue for the FRP run to start in the morning.**
2100	**Greg Young on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/25/05 2100 to 5/26/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**222**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Preparation for FRP installation

SUB CONTRACTORS: Future Pipe Industries, Eddie Mac (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: PMW
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site. Hugh Klein off-site. Site safety and project progress discussed. YBI currently preparing for FRP installation.**
0645	**Future Pipe Industries crew on-site.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.**
0710	**Eddie Mac on-site.**
0720	**Cutting top of final casing.**
0815	**Removing cut section of final casing.**
0830	**Setting Packer into sleeve.**
0900	**HK on-site. Site safety discussed**
0905	**Setting FRP #1 onto platform.**
0920	**GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/26/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**223**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Installation for the FRP.

SUB CONTRACTORS: Future Pipe Industries; Eddie Mac (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed.**
0905	**Jay from Future Pipe Industries (FPI) holding a safety meeting before starting the FRP run.**
0920	**GY off site.**
0925	**The first joint of FRP has been threaded on to the packer.**
1130	**Phil Waller, Mark Chandler, and Richard Walther on site.**
1240	**JW Craft Co. on site servicing latrines. Phil Waller, Mark Chandler, and Richard Walther off site.**
1241	**YBI and FPI crews breaking for lunch.**
1500	**One of the FRP joints is being removed from the run due to threading problems.**
1845	**Finished running FRP for the day (32 joints run for a total of 942 feet of FRP and the packer).**
1900	**Mark Devine and crew replacing Dan Murphy and crew.**
1948	**YBI has brought in a replacement joint for the joint removed due to threading problems.**
2100	**Greg Young on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/26/05 2100 to 5/27/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**224**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Mark Devine, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: FRP installation

SUB CONTRACTORS: Future Pipe Industries
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site. Hugh Klein off-site. Site safety and project progress discussed. YBI currently preparing Baracor annular fluid.**
2300	**Circulating Baracor annular fluid.**
0645	**Future Pipe Industries crew on-site.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.**
0719	**Joint 33 threaded on.**
0729	**Joint 34 threaded on.**
0738	**Joint 35 threaded on.**
0747	**Joint 36 threaded on.**
0756	**Joint 37 threaded on.**
0806	**Joint 38 threaded on.**
0815	**Joint 39 threaded on.**
0824	**Joint 40 threaded on.**
0832	**Joint 41 threaded on.**
0841	**Joint 42 threaded on.**
0850	**Joint 43 threaded on.**
0858	**Joint 44 threaded on.**
0900	**HK on-site. Site Safety and Project Progress discussed. GY off-site.**

FORM NO. 01-01

Observer's Initials GY

Week 17

(05-27)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/27/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**225**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Installation for the FRP.

SUB CONTRACTORS: Future Pipe Industries; Eddie Mac (welder); YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site. The FRP run is in progress.**
0907	**FRP joint #45 threaded on.**
1243	**FRP joint #70 has been threaded on. This is the last joint of FRP. The final joint (stainless steel) will be run after lunch the break.**
1320	**YBI & FPI rigging down the equipment from the FRP tun.**
1400	**The stainless steel joint has been threaded on.**
1510	**Starting to run the video.**
1622	**The water is not clear enough to video the FRP or to set the FRP packer into the seal at the bottom of the final casing, so water will be pumped into the well to improve the view.**
1845	**Bob Didon and crew replacing Dan Murphy and crew.**
1907	**Stopping the video at 1,050 feet bls to let clarity improve.**
1933	**Starting to video again.**
1948	**Stopping the video at 1,640 feet bls to let clarity improve.**
2015	**Starting to video again. The well is flowing due to all the fresh water pumped in for the video (there is 25 to 30 feet of head on the well).**

2041 **The FRP packer is about one half inch above the packer. YBI is pulling the camera out and preparing to pump Baracor into the annulus.**

2100 **Greg Young on site relieving Hugh Klein. Site safety discussed. Hugh Klein off site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/27/05 2100 to 5/28/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**226**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon, Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Baracor Pumped into Annulus

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Greg Young on-site. Hugh Klein off-site. Site safety and project progress discussed. YBI currently preparing Baracor annular fluid.**
2120	**Begin pumping Baracor annular fluid. Beginning Totalizer reading = 310100.**
2140	**Totalizer reading = 312400**
2200	**Totalizer reading = 313800**
2225	**Totalizer reading = 315300**
2315	**Totalizer reading = 317600**
2400	**Totalizer reading = 319400**
0005	**Finished pumping. Lowering FRP into borehole. Final Totalizer reading = 320018.**
0011	**Pressure released. No Baracor released. Packer is sealed.**
0140	**Top of stainless steel section of FRP tubing cut off.**
0700	**YBI shift change. Dan Murphy and crew replacing Bob Didon and crew.**
0900	**HK on-site. Site Safety and Project Progress discussed. GY off-site.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/28/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**227**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Finishing the wellhead.

SUB CONTRACTORS: Richard Harris (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site relieving Greg Young. Site safety discussed. GY off site. Construction of the wellhead is being completed.**
1235	**The wellhead has been completed, and YBI's crew is off site.**
1900	**Bob Didon on site for rig watch during the night.**
2100	**Hugh Klein off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/28/05 2100 to 5/29/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 228**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon; James Hyre
END DEPTH: 2,860 ft bls
ACTIVITY: Rig watch and preparations for the pressure test and mobilization to the DZMW site.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/29/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**229**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: James Hyre, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Rig watch.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site. The site is shut down until Tuesday. James Hyre is the only YBI staff on site.**
1900	**Bob Didon relieving James Hyre on rig watch.**
2100	**Hugh Klein off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/29/05 2100 to 5/30/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 230**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon; Bosit Gulomov
END DEPTH: 2,860 ft bls
ACTIVITY: Rig watch and preparations for the pressure test and mobilization to the DZMW site.

SUB CONTRACTORS: None
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/30/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**231**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Bosit Gulomov, Bob Didon
END DEPTH: 2,860 ft bls
ACTIVITY: Rig watch.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1000	**Hugh Klein on site. The site is shut down until Tuesday. Bosit Gulomov is the only YBI staff on site.**
1900	**Bob Didon relieving Bosit Gulomov on rig watch.**
2000	**Hugh Klein off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/30/05 2100 to 5/31/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**232**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Bob Didon; Mark Devine & Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Preparation for the annular pressure test and mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0800	**Hugh Klein on site.**
0830	**There is heavy rain with thunder and lightning. The work has stopped due to the weather.**
0900	**Hugh Klein remaining on site.**

FORM NO. 01-01

Observer's Initials AF

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/31/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**233**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy & Mark Devine
END DEPTH: 2,860 ft bls
ACTIVITY: Annular pressure test and mobilization to the DZMW site.

SUB CONTRACTORS: YBI Geophysical Logging Division; Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Hugh Klein on site from the last shift. No work is being conducted due to the weather.**
0930	**Lightning has passed. YBI returning to work.**
1052	**Jack Myers of FDEP on site for the annular pressure test. The calibration certificate for the pressure gauge was given to Jack Myers.**
1101	**Starting the annular pressure test at 175 psi.**
1201	**End of the annular pressure test at 175 psi (0% change).**
1210	**Jack Myers off site.**
1500	**YBI Geophysical on site (John Cathey and Jim Goodwin) to video the injection zone.**
1535	**Starting to video the open hole.**
1645	**Finished with the video.**
1730	**YBI crew off site.**
1910	**Hugh Klein off site. No MWH personnel remaining on site for the night.**

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 5/31/05 2100 to 6/01/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**234**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Rig watch and mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
2100	**Hugh Klein off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
2105	**YBI is only watching the rig during the night shift.**
0900	**Alejandra Simon and Aimee Fratarcangeli on site.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/01/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**235**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Aimee Fratarcangeli and Alejandra Simon on site.**
0930	**Mark Chandler on site.**
1000	**Monthly progress meeting in session with Tom Mamott, Luis Molina, Jerry Johnson, Ben Right, Kevin Greuel, Alejandra Simon and Mark Chandler.**
1055	**Meeting adjourned.**
1300	**Mark Chandler off site.**
1417	**YBI pumping fluid from circulation pit into tanker truck.**
1500	**YBI shut down for the night.**
1930	**Aimee Fratarcangeli and Alejandra Simon off site.**
	No MWH personnel remaining on site for the night.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/01/05 2100 to 6/02/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**236**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: Eddie Mac, Jamie Allen (welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0700	**Alejandra Simon on site. No activities due to rain. Eddie Mac and Jamie Allen (welders) on site.**
0800	**Pad monitoring well sampling.**
0830	**Emptying fluid from circulation pit into a tanker truck.**
0900	**Alejandra Simon remaining on site.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/02/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**237**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac (welders).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site from previous shift.**
	YBI continues to rig down to mobilize to the DZMW's location.
1600	**Crew lowering top portion of rig.**
1645	**Cement delivery.**
1700	**YBI shut down for the night. Welders off site.**
1900	**Alejandra Simon off site.**
	No MWH personnel remaining on site for the night.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/02/05 2100 to 6/03/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**238**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: Eddie Mac, Jamie Allen (welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0700	**Alejandra Simon on site. Eddie Mac and Jamie Allen (welders) on site.**
0820	**Crew rigging down the mast. Welders cutting down the 2-foot containment pad enclosing the rig.**
0900	**Alejandra Simon remaining on site.**

FORM NO. 01-01

Observer's Initials _____

Week 18

(06-03)

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/03/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**239**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac (welders).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site from previous shift.**
	YBI continues to rig down to mobilize to the DZMW's location.
0930	**Heavy rain.**
1040	**Work suspended because of rain.**
1100	**YBI crew off site.**
1900	**Alejandra Simon off site.**
	No MWH personnel remaining on site for the night.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/03/05 2100 to 6/04/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X		
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**240**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0700	**Alejandra Simon on site.**
0900	**Alejandra Simon remaining on site.**

FORM NO. 01-01

Observer's Initials _____

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/04/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**241**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 2,860 ft bls
DRILLER: Dan Murphy
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Alejandra Simon on site from previous shift.**
0900	**YBI rigged down as much as possible. On Monday, a crane will arrive to lift the floor onto the DZMW location. Then, the containment pad will be moved as well and rigging up will commence. Meanwhile, miscellaneous work will be done around the site this weekend, i.e. washing equipment and painting rig.**
0930	**Moving diesel truck from inside the pad.**
1040	**Pressure washing equipment.**
1500	**YBI crew off site.**
1900	**Alejandra Simon off site.**
	No MWH personnel remaining on site for the night.

IW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/04/05 2100 to 6/05/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**242**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 2,860 ft bls
DRILLER: None
END DEPTH: 2,860 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0700	**Aimee Fratarcangeli on site.**
0900	**Aimee Fratarcangeli remaining on site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/05/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**243**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 0 ft bls
DRILLER: Dan Murphy
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Aimee Fratarcangeli on site from previous shift.**
1000	**YBI continues to rig down.**
1200	**Pressure washing equipment**
1305	**Heavy rain/ thunderstorms.**
1350	**YBI crew off site.**
1800	**Aimee Fratarcangeli off site.**
	No MWH personnel remaining on site for the night.

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/05/05 2100 to 6/06/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**244**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0700	**Aimee Fratarcangeli on site.**
0900	**Aimee Fratarcangeli remaining on site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/06/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**245**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 0 ft bls
DRILLER: Dan Murphy and Mark Devine
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac, Jimmy Lynch Trucking, Mullins Cranes
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Aimee Fratarcangeli on site from previous shift.**
1000	**Youngquist Brothers continue to prepare surface for placement of steel containment pad around Dual Zone Monitoring Well.**
1015	**Location of DZMW 1 is Latitude N 26^0 28.300' Longitude W 081^0 47.608' +/- 21 feet.**
1015	**Location of Injection Well 1 is Latitude N 26^0 28.278' Longitude W 081^0 47.598' +/- 13 feet.**
1200	**Jimmy Lynch trucking on site removing cuttings from circulation pit.**
1415	**Steel containment pad is in position around DZMW and welders are welding seams.**
1520	**Mullins Crane breaking down equipment. Welders continue to weld pad.**
1700	**Continue to weld steel containment pad.**
1900	**Aimee Fratarcangeli off site.**
	No MWH personnel remaining on site for the night. No Youngquist crews scheduled for night shift.

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/06/05 2100 to 6/07/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**246**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli off site. YBI only working days until drilling of the DZMW starts. No MWH personnel remaining on site for the night.**
0700	**Aimee Fratarcangeli on site.**
0900	**Aimee Fratarcangeli remaining on site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/07/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**247**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 0 ft bls
DRILLER: Dan Murphy and Mark Devine
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac, Ron Bankston (welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Aimee Fratarcangeli on site from previous shift. Two full drilling crews on site to prepare DZMW location. Three welders on site.**
1000	**Welders continue welding steel containment pad and miscellaneous pipes at circulation (mud) pit.**
1225	**Position rig over DZMW location.**
1410	**Position 8,000-gallon hydraulic oil tanker on steel containment pad.**
1630	**Continue positioning and welding pipe at mud pit and continue welding steel containment pad.**
1700	**Youngquist crew off site.**
1900	**Aimee Fratarcangeli off site.**
	No MWH personnel remaining on site for the night. No Youngquist crew on site tonight.

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/07/05 2100 to 6/08/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**248**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
	No MWH personnel on-site.

Observer's Initials _____

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/08/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**249**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 0 ft bls
DRILLER: Dan Murphy and Mark Devine
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac, Ron Bankston (welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on site. Two full drilling crews on site to prepare DZMW location. Three welders on site. Derrick positioned onto pad between 0700 and 0900.**
1015	**Welders continue welding steel containment pad and miscellaneous pipes at circulation (mud) pit.**
1200	**PMW depth measurement and sampling begins.**
1300	**PMW depth measurement and sampling ends.**
1430	**Pipe to mud pit ~ ½ complete (~ 50 ft complete). Containment pad needs one additional weld at SE corner.**
1530	**Heavy rain.**
1700	**YBI off-site (Mark Devine and crew and Dan Murphy and crew.) Welders off-site.**
2100	**Greg Young off-site.**
	No MWH personnel remaining on site for the night. Kevin Greuel remains on-site.

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/8/05 2100 to 6/9/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**250**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: Jamie Allen, Eddie Mac, Ron Bankston (Welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
	No MWH personnel on-site over night.
0700	**Greg Young on-site. Dan Murphy and crew on-site. Mark Devine and crew on-site. Welders on-site.**
0900	**Greg Young remaining on-site. Hugh Klein on-site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/09/05 0900 to 2100
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**251**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 0 ft bls
DRILLER: Dan Murphy and Mark Devine
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac, Ron Bankston (welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on-site from previous shift. Hugh Klein on-site.**
1000	**Welders continue welding steel containment pad and lines from circulation (mud) pit.**
1100	**Positioning 6" line in place from mud pit to rig.**
1300	**Heavy rain begins.**
1400	**Rain ends.**
1645	**Last section of 12" line from mud pit to rig being positioned for welding.**
1700	**YBI off-site (Mark Devine and crew and Dan Murphy and crew.) Welders off-site.**
1900	**Greg Young off-site. Hugh Klein off site.**
	No MWH personnel remaining on site for the night. Kevin Greuel remains on-site.

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/9/05 2100 to 6/10/05 0900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**252**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to DZMW location.

SUB CONTRACTORS: Jamie Allen, Eddie Mac, Ron Bankston (Welders)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
	No MWH personnel on-site over night.
0700	**Greg Young on-site. Dan Murphy and crew on-site. Mark Devine and crew on-site. Welders on-site. Heavy rain. YBI making final preparations for DZMW drilling.**
0800	**Hugh Klein on-site.**
0900	**Greg Young remaining on-site. Hugh Klein on-site.**

Observer's Initials GY

Week 19

(06-10)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/10/05 0900 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X	X	
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**253**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 0 ft bls
DRILLER: Dan Murphy and Mark Devine
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Eddie Mac (welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0900	**Greg Young on site from previous shift. YBI continuing to mix drilling mud for Monday.**
0930	**A drill bit is being delivered from the YBI yard.**
1030	**Hugh Klein on site.**
1130	**Testing the pump in the mud pit.**
1415	**YBI continuing to mix mud.**
1700	**YBI crews and Eddie Mac off site.**
1730	**Greg Young off site. Hugh Klein remaining on site.**
1900	**Hugh Klein off site. The site is shut down for the night. No MWH personnel remaining on site for the night.**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/10/05 1900 to 6/11/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No. 254**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None.
END DEPTH: 0 ft bls
ACTIVITY: None.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**The site is shut down for the night. No MWH personnel on site for the night.**

Observer's Initials _____

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/11/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**255**

SHIFT SUMMARY

OBSERVER: Hugh Klein
START DEPTH: 0 ft bls
DRILLER: Dan Murphy and Mark Devine
END DEPTH: 0 ft bls
ACTIVITY: Mobilization to the DZMW site.

SUB CONTRACTORS: Jamie Allen, Eddie Mac (welders).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Hugh Klein on site. No MWH personnel on site from the previous shift because the site was shut down for the night. Due to the rain in the last few days, there is a great deal of standing water. YBI is completing the mobilization to the DZMW. The welding of the lines for the circulation system are being completed.**
0915	**YBI is assembling the bit and BHA for pilot hole drilling.**
1055	**The welding of the lines in the circulation system has been completed. The system has been tested and found to be in working order. YBI crews off site until Monday at 0700.**
1800	**Hugh Klein off site. The site is shut down until Monday at 0700. No MWH personnel remaining on site.**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/11/05 1900 to 6/12/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 256**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None.
END DEPTH: 0 ft bls
ACTIVITY: None.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**The site is shut down for the night. No MWH personnel on site for the night.**

Observer's Initials _____

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/12/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 257**

SHIFT SUMMARY

OBSERVER: No MWH staff on site.
START DEPTH: 0 ft bls
DRILLER: None.
END DEPTH: 0 ft bls
ACTIVITY: None.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**The site is shut down for the day. No MWH personnel on site.**

Observer's Initials _____

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/12/05 1900 to 6/13/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
Wind	Still	Medium	High	
Humidity	Dry	Moderate	Humid	**Report No. 258**

SHIFT SUMMARY

OBSERVER: No MWH staff on site for the evening.
START DEPTH: 0 ft bls
DRILLER: None.
END DEPTH: 0 ft bls
ACTIVITY: None.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**The site is shut down for the night. No MWH personnel on site for the night.**

Observer's Initials _____

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/13/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**259**

SHIFT SUMMARY

OBSERVER: Greg Young.
START DEPTH: 0 ft bls
DRILLER: Dan Murphy
END DEPTH: 320 ft bls
ACTIVITY: 12 ¼" Pilot Hole Drilling

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: Formation samples every 10 feet.
WATER SAMPLES: None.
TESTING: Deviation surveys every 80 feet.

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site.**
0730	**Drilling DZMW begins.**
0800	**Depth = 15 feet bls. WOB = 0-5K lbs.**
0815	**Jamie Allen on site.**
0935	**KD @ 80 feet bls.**
1055	**Jamie Allen off site**
1135	**Depth = 122 feet bls. WOB = 0-5K lbs. Pen Rate < 1 min/ft.**
1500	**Depth = 205 feet bls. WOB = 0-5K lbs. Pen Rate = 2 min/ft.**
1540	**KD @ 240 feet bls.**
1830	**KD @ 320 feet bls.**
1900	**Hugh Klein on site. Mark Devine and crew on site. Greg Young off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/13/05 1900 to 6/14/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**260**

SHIFT SUMMARY

OBSERVER: Hugh Klein.
START DEPTH: 320 ft bls
DRILLER: Mark Devine.
END DEPTH: 505 ft bls
ACTIVITY: Pilot hole drilling (12¼-inch diameter bit) for the surface casing.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: Formation samples every 10 feet.
WATER SAMPLES: None.
TESTING: Deviation surveys every 80 feet.

TIME	DESCRIPTION
1900	**Hugh Klein relieving Greg Young. Site safety discussed. GY off site. YBI is at 320 feet bls.**
1906	**YBI is at 323 feet bls with 10,000 to 15,000 pounds WOB. The mud has a density of 9.1 pounds per gallon and a Marsh funnel viscosity of 61 seconds.**
1959	**At 328 feet bls with 10,000 to 15,000 pounds WOB and a penetration rate of 10 minutes per foot.**
2046	**KD at 362 feet bls.**
2203	**KD at 402 feet bls. A deviation survey will be conducted at 400 feet bls.**
2304	**Drilling at 420 feet bls. The penetration rate has been <1 minute per foot, but YBI is in a spot taking significantly longer. The mud has a density of 9.2 pounds per gallon and a Marsh funnel viscosity of 63 seconds.**
0001	**The penetrated depth is at 437 feet bls with 10,000 to 15,000 pounds WOB. The penetration rate is <1 minute per foot. The mud has a density of 9.2 pounds per gallon and a Marsh funnel viscosity of 63 seconds.**
0012	**KD at 442 feet bls.**
0045	**Drilling again with a mud density of 9.2 pounds per gallon and a Marsh funnel viscosity of 63 seconds.**
0136	**KD at 482 feet bls. A deviation survey will be conducted at 480 feet bls.**

Observer's Initials HK

0223 **Drilling at 493 feet bls. The penetration rate is <1 minute per foot. The mud has a density of 9.2 pounds per gallon and a Marsh funnel viscosity of 59 seconds.**

0255 **TD at 505 feet bls. The last four feet were much harder and took longer to drill. YBI will circulate on bottom, then run a wiper trip, and TOOH.**

0515 **YBI circulating on bottom, and will TOOH at 0600. The logger is scheduled to be here at 0700.**

0600 **YBI TOOH.**

0645 **YBI is out of the hole and the geophysical loggers (John Cathey and Jim Goodwin) are on site.**

0700 **Greg Young relieving Hugh Klein. Site safety discussed. HK off site.**

Observer's Initials **HK**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/14/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**261**

SHIFT SUMMARY

OBSERVER: Greg Young.
START DEPTH: 0 ft bls
DRILLER: Dan Keeley II
END DEPTH: 80 ft bls
ACTIVITY: 32 ½" Ream for Surface Casing

SUB CONTRACTORS: YBI Geophysical, Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	Greg Young on site. Dan Keeley II and crew on site. Site safety and project progress discussed. Hugh Klein off site.
0720	Geophysical logging begins.
0830	Caliper and Gamma Ray logs complete. Begin Dual Induction log.
0910	Dual Induction log complete Jamie Allen on site.
1030	Begin reaming operations. YBI Geophysical (John Cathey and Jim Goodwin) off site.
1155	Depth = 12 feet bls. WOB = 0-10K lbs. Pen Rate = 6 min/ft.
1200	Mud density = 9.1 pounds per gallon. Marsh funnel viscosity = 55 seconds.
1350	Depth = 23 feet bls. WOB = 0-10K lbs. Pen Rate = 4 min/ft.
1500	Depth = 35 feet bls. WOB = 0-10K lbs. Pen Rate = 10 min/ft. Mud density = 9.0 pounds per gallon. Marsh funnel viscosity = 58 seconds.
1735	Mud density = 9.2 pounds per gallon. Marsh funnel viscosity = 65 seconds.
1740	Depth = 55 feet bls.
1835	Depth = 79 feet bls. WOB = 5K lbs. Pen Rate = 3 min/ft. 15 RPM.
1840	Mark Devine and crew on site.
1900	HK on site. GY off site.

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/14/05 1900 to 6/15/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**262**

SHIFT SUMMARY

OBSERVER: Hugh Klein.
START DEPTH: 80 ft bls
DRILLER: Mark Devine.
END DEPTH: 277 ft bls
ACTIVITY: Reaming (32½-inch diameter bit) for surface casing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation surveys every 80 feet starting at 115 feet bls.

TIME	DESCRIPTION
1900	**Hugh Klein relieving Greg Young. Site safety discussed. GY off site. YBI is at 80 feet bls.**
1905	**YBI is working on the circulation system and servicing the rig.**
2100	**Starting to drill again.**
2111	**Drilling at 114 feet bls with 5,000 pounds WOB and a penetration rate of 1 minute per foot. The mud has a density of 9.5 pounds per gallon and a Marsh funnel viscosity of 52 seconds. Cuttings from the reamed hole correlate well with the chip tray from the pilot hole.**
2117	**KD at 117 feet bls. A deviation survey will be conducted at 115 feet bls.**
2327	**YBI is drilling at 165 feet bls with 10,000 to 15,000 pounds WOB. The penetration is <1 minute per foot. The mud has a density of 9.3 pounds per gallon and a Marsh funnel viscosity of 56 seconds. Cuttings from the reamed hole correlate well with the chip tray from the pilot hole.**
0054	**Drilling at 176 feet bls with 20,000 to 25,000 pounds WOB, and have been drilling this foot for over 20 minutes. The driller thinks the bit may be getting plugged with clay.**
0200	**KD at 197 feet bls, but the driller will check the hole and ream it again as necessary.**
0256	**The hole is clean. A deviation survey will be conducted and then the connection will be made.**
0351	**Drilling at 220 feet bls with 10,000 pounds WOB and a penetration rate of <1 minute per foot. The mud has a density of 9.3 pounds per gallon and a Marsh funnel viscosity of 67 seconds. Cuttings from the reamed hole correlate well with the chip tray from the pilot hole.**

Observer's Initials HK

0543 KD at 277 feet bls. The connection will not be made on this shift because the mud needs to be conditioned (the density is 9.5 pounds per gallon and a Marsh funnel viscosity of 75 seconds).
0700 Alejandra Simon relieving Hugh Klein. Site safety discussed. HK off site.

Observer's Initials HK

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/15/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**263**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 277 ft bls
DRILLER: Dan Murphy
END DEPTH: 356 ft bls
ACTIVITY: 32 ½" Ream for Surface Casing

SUB CONTRACTORS: Josh Brown (Florida Cementing), Jamie Allen (Welder)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
0700	**Alejandra Simon on site relieving Hugh Klein. Site safety discussed. YBI crew on site servicing rig.**
0740	**Circulating- conditioning mud. Waiting on tanker to empty slurry pit in order to have room to continue drilling. Current depth is 277 feet bls.**
0800	**Tanker on site.**
0830	**Reaming.**
0920	**Tanker on site to be filled with slurry.**
0948	**Depth is 306 fet bls. Penetration rate is 2 minutes per foot.**
1000	**Sampling pad monitoring wells.**
1054	**Tanker on site to be filled with slurry.**
1146	**Depth is 319 feet bls. Reaming with 10,000 to 15,000 lbs on bit, 30 rpm. Mud properties: 9.3 lbs/gallon, Marsh Funnel viscosity is 65 seconds.**
1151	**Lost hydraulics. Stopped reaming.**
1358	**Depth is 325 feet bls. Penetration rate is 20 minutes/foot. Reaming with 15,000 to 20,000 lbs on bit. Mud properties: 9.0 lbs/gallon, Marsh Funnel viscosity is 62 seconds.**
1556	**Depth is 337 feet bls. Penetration rate is 14 minutes per foot. Reaming with 10,000 to 15,000 lbs on bit. Mud properties: 9.1 lbs/gallon, Marsh Funnel viscosity is 67 seconds.**

Observer's Initials AS

1650 **Depth is 350 feet bls. Penetration rate is 2 minutes per foot. Reaming with 15,000 to 20,000 lbs on bit. Mud properties: 9.1 lbs/gallon, Marsh Funnel viscosity is 57 seconds.**

1735 **KD at 356 feet bls.**

1900 **Greg Young on site. Alejandra Simon off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/15/05 1900 to 6/16/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**264**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 356 ft bls
DRILLER: Mark Devine
END DEPTH: 440 ft bls
ACTIVITY: Reaming (32½-inch diameter bit) for surface casing.

SUB CONTRACTORS: YBI Electrical
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation survey @ 435 ft bls

TIME	DESCRIPTION
1900	**Greg Young on site relieving Alejandra Simon. Site safety and project progress discussed. AS off site. YBI crew is currently attempting to repair a generator hit by lightening.**
2200	**YBI Electrician on site to repair generator.**
2300	**YBI Electrician off site. TOOH to check bit before reaming resumes.**
0045	**Reaming resumes.**
0130	**Depth = 360 ft bls, Pen. Rate = 2 min/ft, WOB = 15K lbs. Mud: Density = 9.2 lbs/gallon, Viscosity = 69 sec (Marsh Funnel). Cuttings at shaker match cuttings from pilot hole at this depth.**
0300	**Depth = 392 ft bls, Pen. Rate = 2 min/ft, WOB = 20K lbs.**
0400	**Depth = 411 ft bls, Pen. Rate = 2 min/ft, WOB = 15-20K lbs.**
0530	**KD @ 435 ft bls. Deviation survey taken.**
0630	**Depth = 440 ft bls, Pen. Rate = 2 min/ft, WOB = 10-15K lbs.**
0700	**AS on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/16/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**265**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 440 ft bls
DRILLER: Dan Murphy
END DEPTH: 497 ft bls
ACTIVITY: 32 ½" Ream for Surface Casing

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site relieving Greg Young. Site safety discussed. YBI crew on site servicing rig.**
0900	**Depth is 455 feet bls. Reaming with 15,000 to 20,000 lbs on bit and a penetration rate of 8 min/foot.**
0934	**Depth is 463 feet bls. Penetration rate is 4-6 min/foot. Mud properties: 9.4 lbs/gallon, Marsh Funnel viscosity of 65 seconds.**
1140	**KD @ 477 feet bls.**
1430	**TD @ 497 feet bls. Circulating.**
1530	**Wiper trip.**
1800	**TIH to bottom of borehole.**
1900	**Circulating at bottom.**
	Greg Young on site. Alejandra Simon off site.

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/16/05 1900 to 6/17/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**266**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Mark Devine
ACTIVITY: Preparing to run surface casing.

START DEPTH: 497 ft bls
END DEPTH: 497 ft bls

SUB CONTRACTORS: YBI Geophysical
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site relieving Alejandra Simon. Site safety and project progress discussed. AS off site. YBI crew is currently circulating.**
2030	**Cement being loaded into silo.**
2100	**Begin TOOH.**
2220	**TOOH ends. Bit OK. TIH begins.**
2300	**TIH ends. Circulating.**
0030	**Begin TOOH in preparation for caliper log.**
0300	**TOOH ends.**
0320	**YBI Geophysical (John Cathey & Jim Goodwin) on site.**
0345	**Caliper log begins.**
0430	**Caliper log complete.**
0500	**YBI Geophysical off site.**
0700	**AS on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/17/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**267**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 497 ft bls
DRILLER: Dan Murphy
END DEPTH: 497 ft bls
ACTIVITY: Running and cementing 24-inch steel surface casing.

SUB CONTRACTORS: Florida Cementing; Eddie Banstone, Eddie Mac, Mike Boston (Welders).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site relieving Greg Young. Site safety discussed. Welders on site. First joint of the 24-inch steel casing hanging on rig.**
0715	**Welding joint #2 onto joint #1.**
1050	**End casing run.**
1300	**TIH with tremie tube. Jimmy Brantley (Florida Cementing) on site.**
1355	**Start cementing 24-inch casing in place.**
1504	**Done with cementing. 151 bbls of 12% gel and 161 bbls of Neat cement were used.**
1514	**Florida Cementing off site.**
1700	**Removed mud drilling equipment. Greg Young on site.**
1800	**Alejandra Simon off site. Greg Young remaining on site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/17/05 1900 to 6/18/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**268**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Mark Devine
ACTIVITY: Waiting on cement

START DEPTH: 497 ft bls
END DEPTH: 497 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site from last shift.**
	Mark Devine and crew on site. YBI crew is currently removing mud operations equipment.
2200	**Pulling Tremie tubing from hole.**
2300	**Mark Devine and crew off site. Ron Roberts remaining on site to watch yard.**
	GY off site. No MWH personnel on site until 0700 Monday morning.

Observer's Initials GY

Week 20

(06-17)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/17/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**267**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 497 ft bls
DRILLER: Dan Murphy
END DEPTH: 497 ft bls
ACTIVITY: Running and cementing 24-inch steel surface casing.

SUB CONTRACTORS: Florida Cementing; Eddie Banstone, Eddie Mac, Mike Boston (Welders).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site relieving Greg Young. Site safety discussed. Welders on site. First joint of the 24-inch steel casing hanging on rig.**
0715	**Welding joint #2 onto joint #1.**
1050	**End casing run.**
1300	**TIH with tremie tube. Jimmy Brantley (Florida Cementing) on site.**
1355	**Start cementing 24-inch casing in place.**
1504	**Done with cementing. 151 bbls of 12% gel and 161 bbls of Neat cement were used.**
1514	**Florida Cementing off site.**
1700	**Removed mud drilling equipment. Greg Young on site.**
1800	**Alejandra Simon off site. Greg Young remaining on site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/17/05 1900 to 6/18/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**268**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Mark Devine
ACTIVITY: Waiting on cement

START DEPTH: 497 ft bls
END DEPTH: 497 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site from last shift.**
	Mark Devine and crew on site. YBI crew is currently removing mud operations equipment.
2200	**Pulling Tremie tubing from hole.**
2300	**Mark Devine and crew off site. Ron Roberts remaining on site to watch yard.**
	GY off site. No MWH personnel on site until 0700 Monday morning.

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/20/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**269**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 503 ft bls
DRILLER: Dan Murphy
END DEPTH: 503 ft bls
ACTIVITY: Rigging up for reverse air drilling

SUB CONTRACTORS: Eddie Banstone, Eddie Mac, Mike Boston (Welders).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Three (3) welders on site including Eddie Mac, Eddie Banstone, and Mike Boston. Dan Murphy's crew on site working day shift. Mark Devine and crew are working night shift for duration of the project.**
0800	**Tanker truck loading slurry from the mud pit.**
0815	**Raining.**
0930	**Welders and crew are welding 6-inch flow line from 'football' located over circulation pit to the dual zone monitor well wellhead.**
1110	**Tanker truck loads slurry from mud pit.**
1200	**Welders also working on wellhead and preparing for reverse air drilling by welding steel plate on 24-inch casing.**
1205	**Tanker truck on site pumping liquids from mud pit to convert to circulation pit for reverse air drilling. Stopped raining.**
1251	**Tanker truck on site to remove liquids from mud pit.**
1400	**Tanker on site taking another load of liquids pumped from the mud pit.**
1505	**Air compressor delivered to site.**
1520	**Raining. Tanker truck continues to pump liquids from pit.**
1800	**Air compressor is hooked up and operational.**

Observer's Initials **ABF**

1900 Alejandra Simon relieves Aimee Fratarcangeli.

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/20/05 1900 to 6/21/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**270**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 497 ft bls
DRILLER: Mark Devine
END DEPTH: 497 ft bls
ACTIVITY: Rigging up for reverse air drilling.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Aimee Fratarcangeli off site. Mark Devine and crew on site. YBI crew continues to rig up for reverse air drilling.**
1951	**Making up 80-foot drill pipe stands.**
2350	**Completed TIH with air line. Will proceed TIH with drill pipe.**
0300	**Drill pipe sitting at 450 feet bls. Rigged up sump pump and mixed kill. Will circulate before drilling.**
0545	**Continue to circulate.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew. Continue to circulate. Alejandra Simon off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/21/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**271**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 505 ft bls
DRILLER: Dan Murphy
END DEPTH: 526 ft bls
ACTIVITY: Drilling pilot hole using reverse circulation air drilling and 12 ¼-inch button bit

SUB CONTRACTORS: Eddie Banstone, Eddie Mac(Welders).
FORMATION SAMPLES: Collected every 10 feet.
WATER SAMPLES: Collected every 40 feet.
TESTING: Specific capacity testing to be collected every 80 feet.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Two (2) welders on site. including Eddie Mac and Eddie Banstone. Dan Murphy's crew is on site relieving Mark Devine and crew.**
0805	**Drill bit on bottom circulating at 481 feet bpl.**
0835	**Bit plugging off.**
0940	**Bit unplugged. Tag top of cement plug inside casing at 481 feet bpl. The pilot hole was drilled to 505 feet bpl and the reamed hole was drilled to 505 feet bpl. Currently drilling out cement plug.**
1050	**Driller repairs airline which was detached from top head drive.**
1205	**Continue to drill out cement plug. Crew also replacing flange on IW-1.**
1332	**Begin drilling open hole with 12 ¼-inch button bit at 505 feet bpl**
1430	**Installing flange on IW-1. Plan to begin development tomorrow.**
1456	**Drilling at 523 feet bpl. Penetration Rate is 3 minutes per foot. Weight on Bit is 5-10,000 pounds.**
1523	**Airline leak. Driller prepares to repair airline control at drillers control station.**
1730	**Driller continues to repair air valve control.**
1900	**Alejandra Simon relieves Aimee Fratarcangeli.**

Observer's Initials ABF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/21/05 1900 to 6/22/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**272**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Mark Devine
ACTIVITY: 12 ¼-inch pilot hole

START DEPTH: 526 ft bls
END DEPTH: 721 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet field sample, every 80 feet lab sample.
TESTING: Specific capacity; Deviation surveys

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Aimee Fratarcangeli off site. Site safety discussed. Mark Devine and crew on site. Servicing rig.**
2036	**Depth is 550 feet bls. Penetration rate is 1 minute per foot.**
2059	**KD at 560 feet bls.**
2103	**Cleaning borehole.**
2124	**Specific capacity test, field and lab water quality sample and deviation survey taken.**
2330	**Depth is 594 feet bls. Drilling with 5,000 lbs on bit and a penetration rate of 1 minute/foot.**
2340	**Depth is 600 feet bls. Field water quality sample taken.**
0130	**KD at 640 feet bls. Drilling with 15,000 lbs on bit, penetration rate is <1 minute/foot. Circulating and cleaning borehole.**
0150	**Specific capacity test, field and lab water quality sample and deviation survey taken.**
0300	**Depth is 643 feet bls. Having problems with the air line.**
0425	**Depth is 653 feet bls. Air line getting plugged.**
0520	**Depth is 680 feet bls. Drilling with a penetration rate of < 1 minute per foot and 15,000 lbs on bit. Field water quality sample taken.**
0526	**Depth is 694 feet bls.**
0612	**KD at 721 feet bls. Circulating and cleaning borehole.**

Observer's Initials AS

0640 Specific capacity test, field and lab water quality sample and deviation survey taken.
0700 YBI shift change. Dan Murphy and crew replacing Mark Devine and crew.
Aimee Fratarcangeli on site. Alejandra Simon off site. Site safety discussed regarding wearing ear plugs for hearing protection.

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/22/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**273**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 721 ft bls
DRILLER: Dan Murphy
END DEPTH: 721 ft bls
ACTIVITY: Drilling pilot hole using reverse circulation air drilling and 12 ¼-inch button bit

SUB CONTRACTORS: Mike Boston (Welder); Jimmy Lynch Trucking, Inc.
FORMATION SAMPLES: Collected every 10 feet.
WATER SAMPLES: Lab samples collected every 80 feet and field samples collected every 40 feet.
TESTING: Specific capacity testing performed every 80 feet.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy's crew is on site relieving Mark Devine and crew.**
0730	**Drill bit on bottom circulating at 721 feet bpl. Raining.**
0830	**Tanker truck on site for containment of development fluid from injection well. Injection well is being air developed.**
0845	**Begin air developing injection well. There is 90 feet of air line in the well. The tanker truck has a capacity of 7,200 gallons. Filling approximately 6,000 gallons**
0950	**Stopped pumping. Pumped 6,000 gallons into 7,200 gallon tanker truck.**
1000	**Have not started drilling yet. Air pressure not high enough. Working on compressor.**
1055	**Tanker truck (#2) on site for injection well development.**
1155	**Tanker truck #2 off site with approximately 6,000-gallons of development fluid from injection well.**
1430	**Tanker truck #3 off site with approximately 6,000-gallons of development fluid from injection well.**
1700	**Tanker truck #4 off site with approximately 6,000-gallons of development fluid from injection well.**
1800	**Driller has been dredging the pilot hole all day and has not been able to drill additional hole.**
1900	**Alejandra Simon relieves Aimee Fratarcangeli.**

Observer's Initials **ABF**

MWH

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/22/05 1900 to 6/23/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**274**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Mark Devine
ACTIVITY: 12 ¼-inch pilot hole

START DEPTH: 721 ft bls
END DEPTH: 774 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet field sample, every 80 feet lab sample.
TESTING: Specific capacity; Deviation surveys

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Aimee Fratarcangeli off site. Site safety discussed. Mark Devine and crew on site. Servicing rig.**
1930	**Dump truck on site to empty slurry pit. Driller on bottom cleaning borehole.**
2030	**Dredging.**
0100	**Drilling. Cleaning borehole after each foot drilled.**
0340	**Drilling steady at 4 minutes/foot.**
0420	**KD at 761 feet bls. Cleaning borehole.**
0445	**Field water quality sample taken.**
0542	**Drilling at 766 feet bls. Air pressure 90 psi. Continue to circulate. Trying to maintain 180 psi on bottom.**
0646	**Drilling at 774 feet bls.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew. Aimee Fratarcangeli on site. Alejandra Simon off site. Site safety discussed.**

Observer's Initials AS

MWH

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/23/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**275**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 774 ft bls
DRILLER: Dan Murphy
END DEPTH: 881 ft bls
ACTIVITY: Drilling pilot hole using reverse circulation air drilling and 12 ¼-inch button bit

SUB CONTRACTORS: Mike Boston (Welder); Jimmy Lynch Trucking, Inc.
FORMATION SAMPLES: Collected every 10 feet.
WATER SAMPLES: Lab samples collected every 80 feet and field samples collected every 40 feet.
TESTING: Specific capacity testing performed every 80 feet.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy's crew is on site relieving Mark Devine and crew.**
0720	**Tanker #5 on site for air developed injection well formation fluid.**
0730	**Drill bit approximately 10 feet from bottom circulating/dredging to bottom of pilot hole on bottom circulating at 774 feet bpl. Raining.**
0940	**Tanker truck #6 on site for containment of development fluid from injection well. Injection well is being air developed.**
1000	**Continue dredging and plugging off the air line with volume of cuttings and dredge material.**
1155	**Tanker truck (#7) on site for injection well development.**
1250	**Back on bottom drilling pilot hole at 774 feet**
1315	**Drilling at 796 feet in soft limestone formation**
1354	**Tanker truck (#8) on site for injection well development.**
1410	**Perform specific capacity test on dual zone monitor well at 800 feet bpl. Heavy rain.**
1605	**Drilling at 805 feet with string weight of 38,000 pounds; bit weight of 3,000 – 5,000 pounds and a penetration rate of 1 to 2 minutes per foot when the bit is not plugging off.**
1615	**Tanker truck #9 on site for injection well development.**
1706	**Collect formation fluid sample water quality sample (field analyzed)at 840 feet bpl.**
1800	**Drilling at 875 feet with string weight of 38,000 pounds; bit weight of 10,000 – 15,000 pounds and**

Observer's Initials ABF

a penetration rate of 1 to 2 minutes per foot. Formation is soft and easily drilling off.
1820 Jimmy Lynch Trucking on site removing cuttings from the slurry.
1830 Drill to 881 feet bpl circulate prior to performing the specific capacity test at 880 feet
1900 Alejandra Simon relieves Aimee Fratarcangeli.

Observer's Initials ABF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/23/05 1900 to 6/24/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**276**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Mark Devine
ACTIVITY: 12 ¼-inch pilot hole

START DEPTH: 881 ft bls
END DEPTH: 982 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet field sample, every 80 feet lab sample.
TESTING: Specific capacity; Deviation surveys

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Aimee Fratarcangeli off site. Site safety discussed. Mark Devine and crew on site. Servicing rig.**
1930	**Specific capacity, deviation survey and field and laboratory water quality sample taken.**
1950	**Dump truck on site to empty slurry pit.**
2125	**KD @ 921 feet bls. Field water quality sample taken.**
2333	**Drilling @ 955 feet bls with 10,000 to 15,000 lbs on bit and a penetration rate of 10 minutes per foot. Last 5 feet have averaged 10 minutes per foot. Air pressure steady at 180 psi.**
2430	**Drilling @ 958 feet bls with 20,000 to 25,000 lbs on bit and a penetration rate of 20 minutes per foot.**
0135	**KD @ 961 feet bls.**
0204	**Specific capacity, deviation survey and field and lab water quality samples taken.**
0620	**Drilling @ 980 with 20,000 to 25,000 lbs on bit and a penetration rate of 10 minutes per foot.**
0700	**YBI shift change. Dan Murphy and crew replacing Mark Devine and crew. Depth is 982 feet bls. Aimee Fratarcangeli on site. Alejandra Simon off site. Site safety discussed.**

Observer's Initials AS

Week 21

(06-24)

MWH

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/24/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**277**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 982 ft bls
DRILLER: Dan Murphy
END DEPTH: 1,104 ft bls
ACTIVITY: Drilling pilot hole using reverse circulation air drilling and 12 ¼-inch button bit

SUB CONTRACTORS: Mike Boston (Welder)
FORMATION SAMPLES: Collected every 10 feet.
WATER SAMPLES: Lab samples collected every 80 feet and field samples collected every 40 feet.
TESTING: Specific capacity testing performed every 80 feet.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy's crew is on site relieving Mark Devine and crew.**
0720	**Resume drilling pilot hole at 982 feet bpl.**
0730	**Drill bit approximately 10 feet from bottom circulating/dredging to bottom of pilot hole on bottom circulating at 774 feet bpl. Raining.**
0825	**Drilling at 985 feet with 12 ¼-inch button bit. Weight on bit is 15,000 to 18,000 pounds; penetration rate is 10 to 20 minutes per foot**
0900	**Tanker truck #10 on site for containment of development fluid from injection well. Injection well is being air developed.**
1100	**Drilling 989 feet; weight on bit is 15,000 to 18,000 pounds. Penetration rate is 30 minutes per foot.**
1115	**Tanker truck (#11) on site for injection well development.**
1335	**Tanker truck (#12) on site for injection well development.**
1420	**Drilling at 1,001 feet bpl. Collect water sample for field analyses**
1540	**Tanker truck (#13) on site for injection well development.**
1620	**Perform specific capacity test on dual zone monitor well at 1,040 feet bpl. Collect water sample and collect deviation survey.**
1800	**Tanker truck #14 on site for injection well development.**

Observer's Initials **ABF**

1810 Collect water sample at 1,080 feet bpl for field analyses.
1820 Drilling at 1,089 feet bpl. Weight on bit is 5,000 to 10,000 pounds. Soft formation.
1900 Alejandra Simon relieves Aimee Fratarcangeli.

Observer's Initials ABF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/24/05 1900 to 6/25/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**278**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1,120 ft bls
DRILLER: Mark Devine
END DEPTH: 1,144 ft bls
ACTIVITY: 12 ¼-inch pilot hole

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet field sample, every 80 feet lab sample.
TESTING: Specific capacity; Deviation surveys

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Aimee Fratarcangeli off site. Site safety discussed. Mark Devine and crew on site. Servicing rig.**
1920	**Heavy rain. Tanker #14 off site. KD @ 1121 feet bls.**
2000	**Specific capacity test, deviation survey, lab and field water quality samples taken.**
2100	**Making connection. Resume drilling.**
2136	**Drilling @ 1,140 feet bls with 5,000 to 10,000 lbs on bit, 1-2 minutes per foot.**
2220	**Stopped drilling at a depth of 1,144 feet bls. Circulating and killing well. Will TOOH and shut down for the weekend. Work will resume on Monday, June 26, 2005 at 7:00 am.**
2300	**Alejandra Simon off site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/27/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**279**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy
ACTIVITY: Drilling DZMW 12 ¼' Pilot Hole

START DEPTH: 1144 ft bls
END DEPTH: 1186 ft bls

SUB CONTRACTORS: YBI Geophysical, Sanders Lab, Mike Boston (Welder)
FORMATION SAMPLES: Every 10 ft
WATER SAMPLES: Every 40 feet
TESTING: IW Water Quality

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Mike Boston on site.**
0850	**YBI tanker on site to develop IW before water quality samples retrieved.**
0905	**YBI Geophysical on site. (John Cathey and Jim Goodwin)**
0950	**YBI tanker off site.**
1050	**Sanders Lab on site.**
1100	**2nd YBI tanker on site to finish developing IW prior to water samples.**
1150	**YBI tanker off site.**
1215	**Drilling DZMW begins.**
1235	**Begin 1st trip into IW to retrieve water sample.**
1245	**Water sample retrieved. Begin 2nd trip into IW for additional sample.**
1330	**2nd water sample retrieved.**
1515	**Depth = 1174 ft bls, Pen. Rate = 14 min/ft, WOB = 15-20K lbs.**
1630	**YBI Geophysical off site, Sanders Lab off site.**
1730	**Depth = 1182 ft bls, Pen. Rate = 22 min/ft, WOB = 25K lbs.**
1800	**Mike Boston off site.**
1845	**Mark Devine and crew on site. Dan Murphy and crew off site.**
1900	**Aimee Fratarcangeli on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/27/05 1900 to 6/28/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**280**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,186 ft bls
DRILLER: Mark Devine
END DEPTH: 1,332 ft bls
ACTIVITY: 12 ¼-inch pilot hole using reverse circulation air drilling

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet field sample, every 80 feet lab sample.
TESTING: Specific capacity; Deviation surveys

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Greg Young off site. Site safety discussed. Mark Devine and crew on site. Servicing rig.**
2020	**Drilling at 1,186 feet bpl.**
2045	**Drill to 1,201 feet bpl. Perform specific capacity test. Collect water sample at 1,201 feet bpl and deviation survey.**
2319	**Collect field water quality sample at 1,240 feet bpl.**
0005	**Circulate on bottom at 1,281 feet bpl. Weight on bit is 5,000 to 10,000 pounds. Penetration rate is <1 minute per foot.**
0100	**Dredging borehole.**
0230	**Driller able to get bit back on bottom of borehole. Circulating at 1,281 feet bpl.**
0243	**Perform specific capacity test, collect field and laboratory water samples and deviation survey.**
0325	**Making connection. Resume drilling.**
0425	**Drilling at 1,320 feet bpl with bit weight of 5,000 to 10,000 pounds. Soft formation. Penetration rate is less than 1 minute per foot.**
0541	**Delay in drilling at a depth of 1,332 feet bls. The tophead drive is in need of repair.**
0700	**Greg Young relieves Aimee Fratarcangeli. Site safety discussed. Dan Murphy and crew replace Mark Devine and crew.**

Observer's Initials **ABF**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/28/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**281**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy
ACTIVITY: Drilling DZMW 12 ¼' Pilot Hole

START DEPTH: 1332 ft bls
END DEPTH: 1472 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 ft
WATER SAMPLES: Every 40 feet
TESTING: Specific Capacity, Deviation

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Amiee Fratarcangeli off site. YBI currently repairing Top Head Drive.**
0805	**Drilling Resumes.**
0930	**Depth = 1348 ft bls, Pen. Rate = 3 min/ft, WOB = 10K lbs.**
1030	**Depth = 1361 ft bls. Specific Capacity Test and Deviation Survey.**
1345	**Depth = 1405 ft bls, Pen. Rate = 4 min/ft, WOB = 5K lbs.**
1555	**Depth = 1440 ft bls, Pen. Rate = 2 min/ft, WOB = 10K lbs.**
1600	**Depth = 1441 ft bls. Specific Capacity Test and Deviation Survey.**
1825	**Depth = 1468 ft bls, Pen. Rate = 5 min/ft, WOB = 15K lbs.**
1845	**Mark Devine and crew on site.**
1900	**AF on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/28/05 1900 to 6/29/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**282**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,472 ft bls
DRILLER: Mark Devine
END DEPTH: 1,610 ft bls
ACTIVITY: 12 ¼-inch pilot hole using reverse circulation air drilling

SUB CONTRACTORS: None
FORMATION SAMPLES: Every 10 feet.
WATER SAMPLES: Every 40 feet field sample, every 80 feet lab sample.
TESTING: Specific capacity; Deviation surveys

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Greg Young off site. Site safety discussed. Mark Devine and crew on site replacing Dan Murphy and crew. Servicing rig.**
1925	**Resume drilling at 1,472 feet bpl. There is a leak in the top side of the airline at the rubber seat in the tophead drive. Because of this we are drilling with only 150 psi air pressure instead of the typical 180 psi.**
2020	**Collect field water quality sample at 1,480 feet bpl.**
2040	**Drilling at 1,482 feet bpl. The weight on bit is 15,000 pounds. Penetration rate is 3 to 4 minutes per foot.**
2115	**Raining.**
2130	**Drilling at 1,495 feet bpl. The weight on bit is 10,000 to 15,000 pounds. Penetration rate is 3 minutes per foot.**
2317	**Drill to 1,520 feet bpl. Perform specific capacity test. Collect water sample at 1,520 feet bpl and deviation survey.**
0030	**Drilling at 1,538 feet bpl. The weight on bit is 10,000 to 15,000 pounds. Penetration rate is 1 minute per foot. String weight is 63,000 pounds.**
0100	**Drilling at 1,550 feet.**
0118	**Collect field water quality sample of circulation fluid at 1,560 feet bpl.**

Observer's Initials **ABF**

0250 **Drill to 1,600 feet bpl. Perform specific capacity test. Collect water (circulation fluid) sample at 1,600 feet bpl for field and laboratory analyses. Also collect deviation survey.**
0300 **The drill crew has temporarily repaired the air leak.**
0330 **Driller will drill 10 feet of rat hole.**
0420 **Resume drilling at 1,600 feet bpl.**
0432 **Drill to 1,610 feet bpl which is the total depth of the pilot hole.**
0610 **Stop circulating.**
0700 **Greg Young relieves Aimee Fratarcangeli. Site safety discussed. Dan Murphy and crew replace Mark Devine and crew.**

Observer's Initials **ABF**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/29/05 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain	
		X			
Temperature	32 - 50	50 - 70	70 - 85	> 85	
			X		
Wind	Still	Medium	High		
		X			
Humidity	Dry	Moderate	Humid	**Report No.**	
		X	X	**283**	

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: DZMW 12 ¼' Pilot Hole

SUB CONTRACTORS: YBI Geophysical
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Pad Monitor Wells

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Amiee Fratarcangeli off site. YBI currently preparing mud to kill the well.**
0800	**Tankers begin arriving to empty slurry pit.**
1110	**Wiper trip begins.**
1130	**Sample Pad Monitor Wells.**
1440	**YBI Geophysical on site (John Cathey and Jim Goodwin) Solid waste being unloaded from slurry pit.**
1600	**Geophysical Logging begins.**
1845	**Mark Devine and crew on site.**
1900	**AF on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/29/05 1900 to 6/30/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**284**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,610 ft bls
DRILLER: Mark Devine
END DEPTH: 1,610 ft bls
ACTIVITY: Geophysical logging of the open hole section from 490 feet to 1,610 feet bpl.

SUB CONTRACTORS: YBI Geophysical Logging Division.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Greg Young off site. Site safety discussed. Mark Devine and crew on site replacing Dan Murphy and crew. Servicing rig.**
1925	**YBI geophysical logging division (John Cathey and Jim Goodwin) logging open hole.**
1945	**Sonic, VDL and log derived TDS are completed. Loggers prepare to run TeleViewer log.**
2040	**Continuing to run TeleViewer log at a rate of 5 to 6 feet per minute in the open hole (490 feet to 1610 feet bpl). This log takes approximately 3.6 hours to complete.**
0010	**TeleViewer completed.**
0100	**Run static flowmeter. Flowmeter stopped spinning at 1,575 feet bpl. This most likely from 'fines' accumulating in the bottom of the well.**
0205	**Bring well alive at rate of 440 gallons per minute and run dynamic flowmeter. Dynamic flowmeter also stopped spinning at 1,575 feet bpl.**
0230	**Prepare to run dynamic temperature and fliud conductivity log.**
0305	**Logging complete. Raining.**
0330	**Received 20 copies of all logs but the TeleViewer.**
0500	**Drill crew waiting on straddle packer intervals. Still raining.**
0700	**Greg Young relieves Aimee Fratarcangeli. Site safety discussed. Dan Murphy and crew replace Mark Devine and crew.**

Observer's Initials ABF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/30/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**285**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: DZMW 12 ¼' Pilot Hole

SUB CONTRACTORS: Jamie Allen (Welder)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Jamie Allen on site. Amiee Fratarcangeli off site. YBI currently servicing rig. No activities planned. Geophysical Logs being reviewed to determine Packer intervals.**
1700	**Jamie Allen off site.**
1800	**Upper Packer interval will be 1150-1200 ft bls per Hugh Klein.**
1845	**Mark Devine and crew on site.**
1900	**AF on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 6/30/05 1900 to 7/01/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**286**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,610 ft bls
DRILLER: Mark Devine
END DEPTH: 1,610 ft bls
ACTIVITY: Straddle packer testing for upper monitor zone (1,149 feet to 1,200 feet)

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	Aimee Fratarcangeli on site. Greg Young off site. Site safety discussed. Mark Devine and crew on site replacing Dan Murphy and crew. Servicing rig.
1930	Packer test Number 1 will be seated from 1,149 feet to 1,200 feet bpl. Mark Devine and crew begin making up packer assembly and lower to prescribed depth.
2100	Continuing to trip packer assembly into hole.
2345	Continue to lower packer assembly.
0135	Packer assembly is seated and inflated to 440 psi. Packer assembly took a total of 9,000 pounds of weight during inflation (3,000 pounds was bled off three times).
0214	Prepare to air develop three pipe volumes equaling 5,175 gallons.
0234	Start air development.
0252	Stop air development. Pumped 7,400 gallons of fluid in 18 minutes equaling 412 gpm.
0339	Air line has been removed and 5 horsepower pump installed at 180.77 feet below pad. Drill pipe probe is at 178 feet below pad. Annulus probe is at 50 feet below pad level. Also a memory gauge is positioned below the bottom packer.
0408	Increase packer inflation to 460 psi. Adjust pump flow rate to 'wide open' the pump pulls 107 gpm with 476 feet of water above probe (296 feet of water above land surface).
0416	Start background with 485 feet of water above probe (305 feet of water above land surface).

Observer's Initials ABF

0515 The Hermit datalogger records 485 feet of water above the probe in the drill pipe
0615 The Hermit datalogger records 485 feet of water above the probe in the drill pipe
0700 The Hermit datalogger records 485 feet of water above the probe in the drill pipe
0700 Greg Young relieves Aimee Fratarcangeli. Site safety discussed. Dan Murphy and crew replace Mark Devine and crew.

Observer's Initials ABF

Week 22

(07-01)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/01/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**287**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Straddle packer test #1 (1,149 – 1,200 feet bpl)

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: With Packer Test.
TESTING: Packer Test.

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Amiee Fratarcangeli off site. Packer Test #1 currently in background phase.**
0820	**Test phase begins. Flow at 110 gpm. Packer pressure @ 445 psi. Flow meter @ 330,600 gallons.**
0830	**Water quality (WQ) and Water Level (WL) readings taken every ½ hour to 1225.**
1225	**Test phase complete. Recovery phase begins. Flow meter @ 357,500 gal. 26,900 gallons produced. WL readings ~ every 5 min. to 1445.**
1500	**Packer Test to be repeated due to no data recorded in Hermit with 1 hr Background, 3 hour Test and 1 hour Recovery.**
1514	**Background begins. WL readings every 10-15 min.**
1615	**Test phase begins. Flow = 110 gpm. Flow meter @ 357500 gallons. Packer pressure = 440 psi. WQ and water level readings every 20-30 min.**
1900	**Mark Devine and crew replacing Dan Murphy and crew. GY remaining on site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/01/2005 1900 to 7/02/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**288**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Straddle packer test #1 (1,149 – 1,200 feet bpl)

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: With Packer Test.
TESTING: Packer Test.

TIME	DESCRIPTION
1900	**Greg Young on site from previous shift. Mark Devine and crew on site Packer Test #1 being repeated. Currently in Test phase.**
1915	**Water quality and water level recorded. Test phase complete. 19,100 gallons produced. Begin Recovery.**
1940	**Water quality (WQ) and Water Level (WL) readings taken every 10 min.**
2015	**Recovery complete.**
2040	**YBI to pump water back into borehole, deflate packers and TOOH. Site closed until 7-5-05 @ 0700. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/05/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**289**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Aquifer testing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Aquifer performance test # 2 (1,460 – 1,510 feet bls)

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site. Site was shut down for the holiday weekend. YBI currently preparing to TIH with straddle packers to a depth of 1,460 feet bls.**
1340	**Trying to inflate packers unsuccessfully. TIH with airline.**
1400	**TIH with airline complete. Waiting on packers to stabilize.**
1440	**Bleeding off packers. Will lower them approximately 2 feet to try and inflate them again.**
1600	**Inflation of packers was unsuccessful. Bleeding them off and TOOH to check for leaks.**
1750	**Checking hose for leaks.**
1800	**TOOH with drill pipe.**
1840	**TOOH with packer.**
1900	**Mark Devine and crew replacing Dan Murphy and crew. Greg Young on site. AS off site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/05/2005 1900 to 7/06/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**290**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Straddle packer test #2 (1,460 – 1,510 feet bls)

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: With Packer Test.
TESTING: Packer Test.

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Site safety and project progress discussed. AS off site. YBI currently inspecting packers for leaks.**
2100	**Both packers check out OK. TIH with packers to be set at 1460 and 1510 ft bls.**
2145	**TIH complete.**
2210	**Inflating packers. Packers holding pressure.**
2250	**Packer pressure set at 450 psi. Water level in slurry pit = 123”**
2315	**Producing ~ 12 gpm. Adding two air lines to increase water production.**
2345	**Producing ~ 30 gpm. 3 well volumes = 9” in pit. Will go to 12 “ (111” measured in pit)**
2350	**WQ measured ~20-30 minutes for Development.**
0400	**WQ stabilized. 12” of water added to pit, therefore more than 3 well volumes.**
0520	**Setting pump rate. Probe is set @ 176.3 ft bls, Pump is set @ 176.3 ft bls.**
0545	**Currently pumping 10 gpm. WL decreased from 157 ft to 38.5 ft and drawdown rate is decreasing.**
0550	**Pump rate set at 9 gpm.**
0615	**Background begins.**
0700	**AS on site. Dan Murphy and crew on site. GY off site.**

Observer’s Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/06/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**291**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Dan Murphy
ACTIVITY: Aquifer testing.

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: Field samples every 30 min during test. Lab sample at end of test.
TESTING: Aquifer performance test # 2 (1,460 – 1,510 feet bls)

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site. Site safety discussed. Greg Young off site. Packer #2 background phase in progress.**
0800	**PMWs sampling.**
0915	**Mark Chandler on site for client meeting.**
1045	**Tom Mamott on site**
1130	**Meeting adjourned.**
1140	**Begin packer test #2.** **Collecting data and water quality samples every 30 minutes. Flow rate is 14 gpm.**
1200	**Mark Chandler and Tom Mamott off site.**
1310	**Flow rate is stable at 11 gpm, packer pressure stable at 500 psi. Drawdown stabilizing at ~ 124 feet bls.**
1540	**End of test. Collected field and lab samples plus filled required 5-gallon bucket. Shutting down pump. Recovery phase begins.**
1900	**Mark Devine and crew relieving Dan Murphy and crew. Greg Young relieving Alejandra Simon. AS off site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/06/2005 1900 to 7/07/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**292**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Packer test #2 (1,460 – 1,510 feet bls) & Packer test #3 (1,510 – TD/1610 ft bls)

SUB CONTRACTORS: YBI Geophysical (Jim Goodwin)
FORMATION SAMPLES: None
WATER SAMPLES: With Packer Test.
TESTING: Packer Test.

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Site safety and project progress discussed. AS off site. Currently finishing Packer #2 Recovery Phase.**
1935	**Jim Goodwin on site.**
2000	**Data downloaded from Hermit and received on floppy disk. YBI prep. To TOOH and set for Single Packer Test @ 1500 ft bls.**
2025	**Per conversation with Mark Chandler, Packer location being adjusted to 1510 ft bls.**
2030	**Communicated new Packer depth (1510 ft bls) to Mark Devine.**
2145	**TOOH begins.**
2330	**Bringing second (lower) packer out of borehole.**
0030	**TIH begins.**
0205	**TIH complete. Setting top seal.**
0240	**Pressuring up Packer.**
0325	**Packer pressure set at 460 psi**
0450	**Development begins. Producing ~35 gpm.**
0505	**Begin WQ measurements ~ every 30 min.**
0700	**AS on site. Dan Murphy and crew on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/07/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**293**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Aquifer testing.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: Field samples every 30 min during development and test. Lab sample at end of test and development.
TESTING: Aquifer performance test # 3 (1,510 – 1,610 feet bls)

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site. Site safety discussed. Greg Young off site. Packer #3 development phase in progress.**
0710	**Collecting water samples every 30 minutes.**
0910	**End of development.**
1039	**Selecting pump rate.**
1110	**Stepping test. Rate established at 36 gpm.**
1112	**Pump shut down. Begin background phase.**
1540	**Stepping test. Packer test #2 begins. Flow rate is 38 gpm. Totalizer reads 380,200 gallons. Water quality collected every ~30 minutes.**
1900	**Mark Devine and crew relieving Dan Murphy and crew. Greg Young relieving Alejandra Simon. AS off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/06/2005 1900 to 7/07/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X	X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
		X	X	
Wind	Still	Medium	High	
	X	X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**294**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Packer test #3 (1,510 – TD/1610 ft bls)

SUB CONTRACTORS: YBI Geophysical (John Cathey)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Packer Test.

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Site safety and project progress discussed. AS off site. Currently finishing Packer #3 Pump Phase.**
1932	**Pump phase complete. Recovery phase begins.**
2240	**John Cathey on site.**
2315	**Packer Test #3 complete.**
2335	**Hermit Data downloaded and received. John Cathey off site. YBI begins TOOH to retrieve memory gauge.**
0700	**AS on site. Dan Murphy and crew on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/08/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**295**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Securing site for hurricane.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site. Site safety discussed. Greg Young off site. YBI TOOH with packers.**
0920	**Saunders Laboratory on site to pick up last water sample. YBI TIH with drill pipe.**
1130	**YBI crew off site. No YBI or MWH shift scheduled for tonight. Site is shut down for the weekend. Operations will resume Monday, July 11, 2005.**

Observer's Initials AS

Week 23

(07-08)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/08/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**295**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Securing site for hurricane.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site. Site safety discussed. Greg Young off site. YBI TOOH with packers.**
0920	**Saunders Laboratory on site to pick up last water sample. YBI TIH with drill pipe.**
1130	**YBI crew off site. No YBI or MWH shift scheduled for tonight. Site is shut down for the weekend. Operations will resume Monday, July 11, 2005.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/11/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**296**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Waiting on Monitor Zone Confirmation from FDEP

SUB CONTRACTORS: Mike Boston (welder).
FORMATION SAMPLES: None
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy and crew on site. Drill crew services rig while waiting on FDEP confirmation of monitoring zone locations.**
1000	**Drill crew mixes kill mud and kills well then trips pipe out of the hole.**
1500	**Crew services rig.**
1900	**Alejandra Simon relieves Aimee Fratarcangeli. Mark Devine and crew replaces Dan Murphy and crew.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/11/2005 1900 to 7/12/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**297**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Monitoring zone confirmation

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Site safety and project progress discussed. ABF off site.**
1930	**Crew strapping tremie tube and mixing kil.**
2330	**Two YBI crew personnel remaining on site. No activities taking place.**
0700	**Aimee Fratarcangeli replacing Alejandra Simon. Dan Murphy and crew replacing Mark Devine and crew. AS off site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/12/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**298**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Waiting on Monitor Zone Confirmation from FDEP.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy and crew on site. Drill crew services rig while waiting on FDEP confirmation of monitoring zone locations.**
1115	**Deliver geophysical logs to FDEP-South District.**
1600	**Crew services rig.**
1900	**Alejandra Simon relieves Aimee Fratarcangeli. Mark Devine and crew replaces Dan Murphy and crew.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/12/2005 1900 to 7/13/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**299**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Mark Devine
ACTIVITY: Monitoring zone confirmation

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Site safety and project progress discussed. ABF off site.**
2200	**YBI crew off site.**
0700	**Aimee Fratarcangeli replacing Alejandra Simon. Dan Murphy and crew on site. AS off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/13/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**300**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Waiting on Monitor Zone Confirmation from FDEP.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy and crew on site. Drill crew services rig while waiting on FDEP confirmation of monitoring zone locations.**
1600	**Crew services rig.**
1700	**Discussions with FDEP regarding monitoring zones continued throughout the day. FDEP is requiring an additional packer test from 1,320 feet to 1,380 feet bpl. Youngquist Brothers, Inc. is preparing the packers for packer test #4 in the dual zone monitor well.**
1900	**Alejandra Simon relieves Aimee Fratarcangeli. Mark Devine and crew replaces Dan Murphy and crew.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/13/2005 1900 to 7/14/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**301**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Mark Devine
ACTIVITY: Aquifer testing

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: Field samples every hour to 30 minutes.
TESTING: Aquifer test #4 (1320 feet bls to 1380 feet bls)

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Site safety and project progress discussed. ABF off site. YBI preparing to TIH with packers. Only two hands and driller on site, progress is slow.**
0100	**Packers in place.**
0115	**TIH with air line.**
0124	**TIH with air line completed.**
0140	**Started development of aquifer.**
0147	**Flow rate is 2 gpm.**
0157	**TIH with all air line tremie tube.**
0230	**Flow rate is 5 gpm.**
0610	**Change in water level since start of test is 2 inches, a total of 1466 gallons have been evacuated from the well so far.**
0700	**Aimee Fratarcangeli replacing Alejandra Simon. Dan Murphy and crew on site. AS off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/14/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**302**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Straddle Packer Test #4 (1,320 feet to 1,380 feet)

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Alejandra Simon off site. Dan Murphy and crew on site replacing Mark Devine and crew.**
0720	**Continue development of straddle packer test #4. There is much kill mud in the discharge stream.**
0740	**Water level in pit is 8 ft 7 ½ inches below the measuring point. There is approximately 420 feet of airline in the drill pipe. Measuring volume of discharge with a 5 gallon bucket.**
0920	**Flow rate is 5 gallons per minute. One drill pipe volume has been developed.**
1115	**Total volume purged is 2700 gallons. Continue to air develop the interval.**
1300	**Total volume purged is 3225 gallons (1.6 drill pipe volumes).**
1500	**Total volume purged is 3750 gallons (1.8 drill pipe volumes). The TDS is 5,071 mg/L.**
1700	**Total volume purged is 4185 gallons (2.04 drill pipe volumes).**
1900	**Total volume purged is 4785 gallons (2.33 drill pipe volumes). Development will continue through the night. Alejandra Simon on site. Aimee Fratarcangeli off-site. Site safety and progress discussed. Mark Devine and crew relieves Dan Murphy and crew.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/14/2005 1900 to 7/15/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**303**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Mark Devine
ACTIVITY: Aquifer testing

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: Field samples every two hours.
TESTING: Aquifer test #4 (1320 feet bls to 1380 feet bls)

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Site safety and project progress discussed. ABF off site. Development phase of packer test #4 continues.**
2100	**Collecting field water sample. 5,385 gallons have been purged from the well so far.**
2300	**Water quality is stabilizing : 4,945 mg/L TDS and 7,380 uS/cm. 2.92 drill pipe volumes (5,985 gallons) have been purged so far.**
0300	**Water quality stable. 3.5 drill pipe volumes (7,185 gallons) have been purged from the well.**
0500	**Water quality stable. 3.8 drill pipe volumes (7,785 gallons) have been purged from the well.**
0700	**Aimee Fratarcangeli replacing Alejandra Simon. Dan Murphy and crew on site. AS off site.**

Observer's Initials AS

Week 24

(07-15)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/15/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**304**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Straddle Packer Test #4 (1,320 feet to 1,380 feet)

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: 1 sample - Packer Test #4 (1320 feet to 1380 feet)
TESTING: Packer Test #4 (1320 feet to 1380 feet)

TIME	DESCRIPTION
0700	Aimee Fratarcangeli on site. Alejandra Simon off site. Dan Murphy and crew on site replacing Mark Devine and crew.
0731	Stop development of straddle packer test #4. Set up for background stage of test.
0835	Submersible pump and probes are set in well.
1030	The packer test has been cancelled per conversations between Mark Chandler and Joe Haberfeld.
1300	Crew begins tripping packer assembly out of the hole.
1700	Packer assembly out of the hole. Drill crew tallies the tremie pipe that will be used for cementing and graveling the pilot hole up to the intermediate casing.
1800	Tripping in the hole with tremie pipe.
1900	Alejandra Simon on site. Aimee Fratarcangeli off site. Mark Devine and crew replaces Dan Murphy and crew.

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/15/2005 1900 to 7/16/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**305**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Cementing 12 ¼-inch pilot hole

SUB CONTRACTORS: Florida Cementing (Josh Brown).
FORMATION SAMPLES: None
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Site safety and project progress discussed. ABF off site. YBI TIH with tremie tube to start cementing operations.**
1922	**Rubber can was not placed in the borehole, TOOH with all tremie tubing to place rubber can in order to be able to seal the well for cementing.**
2030	**Placed rubber can in place. Preparing to TIH with tremie tubing.**
2045	**TIH with tremie tubing.**
2200	**Josh Brown, Florida Cementing on site.**
2224	**Begin cementing.**
2245	**End cementing with 13 barrels of Neat cement.**
2400	**Alejandra Simon off site. Site will be shut down for the weekend. Operations will resume on Monday July 18, 2005.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/18/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**306**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy
ACTIVITY: Cementing Pilot Hole

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site.**
	Currently preparing to tag 1st cementing stage.
0905	**Tag at 1534 ft bls.**
1300	**30 gallons of water pumped into borehole to flush out mud and allow gravel to infiltrate.**
1400	**Water did not break up mud/bentonite. TIH planned to break up mud and flush it out.**
1645	**TIH complete. Circulating.**
1900	**Circulation continues.**
	Mark Devine and crew replacing Dan Murphy and crew.
	AF on site. GY off site.

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/18/2005 1900 to 7/19/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**307**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
DRILLER: Mark Devine
ACTIVITY: Cementing/Graveling 12 ¼-inch pilot hole

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	Aimee Fratarcangeli on site. Mark Devine and crew on site. Greg Young off site.
2000	The steel containment pad around the well is at capacity. Driller pumping this fluid into slurry pit. The well is alive and must be killed prior to tripping drill pipe out of hole. Drill pipe is at 1,535 feet bpl.
2140	Crew mixes mud to kill well.
2245	Trip out of hole with drill pipe.
0000	Delay in tripping out of hole because must mix more 'kill' mud to kill drill pipe and well head while tripping out of the hole.
0230	Trip in the hole with tremie pipe that will be used for graveling and cementing.
0330	Delay in tripping in the hole to mix more mud to kill well.
0440	Tremie is set at 1,491 feet bpl. Crew measures gravel in 5-gallon buckets.
0520	The lower monitor zone requires a theoretical volume 14 barrels equivalent to 120 5-gallon buckets of gravel to bring gravel up to 1,460 feet. Sixty buckets have been measured and placement of gravel begins.
0630	Continue pumping first half of gravel.
0700	Greg Young on site replacing Aimee Fratarcangeli. Dan Murphy and crew replace Mark Devine and crew. Aimee Fratarcangeli off site.

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/19/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X	X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**308**

SHIFT SUMMARY

OBSERVER: Greg Young
DRILLER: Dan Murphy
ACTIVITY: Cementing Pilot Hole

START DEPTH: 1610 ft bls
END DEPTH: 1610 ft bls

SUB CONTRACTORS: Florida Cementing (Josh Brown)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Aimee Fratarcangeli off site. YBI Currently pumping gravel into the Lower Monitor Zone.**
0900	**Gravel tagged at 1453 ft bls. Josh Brown on site.**
0945	**5 bbls pre-flush.**
0950	**3 bbls "hot" neat cement for cement plug.**
161005	**6 ¼ bbls chase.**
1150	**Tagged cement plug at 1440 ft bls.**
1212	**5 bbls pre-flush**
1214	**Cementing between LMZ and UMZ begins.**
1231	**Cementing complete with 60 bbls 12% CaCl used**
1630	**Tag at 1203 ft bls.**
1800	**Prep for gravel installation.**
1900	**AF on site. Mark Devine and crew on site. Dan Murphy and crew off site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/19/2005 1900 to 7/20/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**309**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1610 ft bls
DRILLER: Mark Devine
END DEPTH: 1610 ft bls
ACTIVITY: Cementing/Graveling 12 ¼-inch pilot hole

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Mark Devine and crew on site. Dan Murphy and crew off site. Discuss site safety and project progress with Greg Young. Greg Young off site.**
2015	**Pumped 100 5-gallon buckets of gravel into Upper Monitor Zone.**
2100	**Pump an additional 100 5-gallon buckets of gravel into Upper Monitor Zone**
2230	**Tag gravel at 1120 feet bpl. Prepare to pump hot neat cement.**
2338	**Pump 5 barrels Neat + calcium carbonate.**
2350	**Wait on cement.**
0620	**Tag cement at 1100 feet. Prepare to pump to 500 feet bpl.**
0700	**Greg Young on site replacing Aimee Fratarcangeli. Dan Murphy and crew replace Mark Devine and crew. Aimee Fratarcangeli off site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/20/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X	X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**310**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Cementing Pilot Hole

SUB CONTRACTORS: Florida Cementing (Josh Brown), Mike Boston (Welder)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Aimee Fratarcangeli off site. YBI currently prep for cementing.**
0800	**Josh Brown on site.**
0810	**Cementing begins with 5 bbls pre-flush.**
0932	**Cementing complete. 261 bbls cement with 12% CaCl used.**
1330	**Tag at 499 ft bls. Mike Boston on site.**
1800	**TIH for reaming ops begins.**
1812	**Placing 22 ½" bit.**
1900	**AF on site. Mark Devine and crew on site. Dan Murphy and crew off site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/20/2005 1900 to 7/21/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**311**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
DRILLER: Mark Devine
ACTIVITY: Reaming with 22 ½ -inch bit

START DEPTH: 490 ft bls
END DEPTH: 660 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Mark Devine and crew on site. Dan Murphy and crew off site. Discuss site safety and project progress with Greg Young. Greg Young off site.**
2030	**Continue tripping in hole with 22 ½ – inch bit.**
2230	**Begin reaming with 22 ½ - inch bit**
0050	**Reaming at 515 feet bpl and make connection.**
0135	**Resume reaming at 515 feet bpl.**
0300	**Circulating at 530 feet. Penetration rate is < 1 minute per foot. Weight on bit is <5,000 pounds.**
0440	**Reaming at 595 feet. Perform deviation survey.**
0510	**Resume reaming. The formation is not holding the weight of the bit and continues to drill off. Driller having a difficult time keeping more than 5,000 pounds on the bit.**
0635	**Reaming at 639 feet. Penetration rate is <1 minute per foot. Weight on bit is <5,000 pounds.**
0700	**Greg Young on site replacing Aimee Fratarcangeli. Dan Murphy and crew replace Mark Devine and crew. Aimee Fratarcangeli off site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/21/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**312**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1610 ft bls
DRILLER: Dan Murphy
END DEPTH: 1610 ft bls
ACTIVITY: Reaming 22 ½" borehole

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation Surveys

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Aimee Fratarcangeli off site. YBI currently reaming borehole at 669 ft bls.**
0843	**Depth = 697 ft bls, Pen. Rate ~ 1 min/ft, WOB = 0-5K lbs.**
1032	**Depth = 697 ft bls, Pen. Rate ~ 1 min/ft, WOB = 0-5K lbs.**
1238	**KD @ 755 ft bls. Performing deviation survey. Circulating.**
1422	**Depth = 780 ft bls, Pen. Rate ~ 1 min/ft, WOB = 0-5K lbs.**
1600	**Depth = 810 ft bls, Pen. Rate ~ 2 min/ft, WOB = 0-5K lbs.**
1712	**Depth = 837 ft bls, Pen. Rate ~ 2 min/ft, WOB = 10K lbs.**
1900	**AF on site. Mark Devine and crew on site. Dan Murphy and crew off site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/21/2005 1900 to 7/22/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**313**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 869 ft bls
DRILLER: Mark Devine
END DEPTH: 992 ft bls
ACTIVITY: Reaming with 22 ½ -inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation surveys

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Mark Devine and crew on site. Dan Murphy and crew off site. Discuss site safety and project progress with Greg Young. Greg Young off site.**
1905	**Reaming with 22 ½-inch bit at 869 feet bpl. Penetration rate is <1 foot per minute and weight on bit is <5,000 pounds.**
2100	**Reaming at 898 feet bpl. Weight on bit is <5,000 pounds. Penetration rate is 2-3 minutes per foot.**
2155	**Circulating at 995 feet bpl.**
0110	**Reaming at 952 feet. Weight on bit is 15,000 pounds.Penetration rate is 12 minutes per foot.**
0300	**Reaming at 960 feet. The formation is holding the weight of the bit at 18,000 to 20,000 pounds. Penetration rate has slowed to 14 minutes per foot.**
0412	**Reaming at 970 feet. Weight on bit is 18,000 to 20,000 pounds. Penetration rate is 10 minutes per foot.**
0600	**Reaming at 981 feet.**
0700	**Greg Young on site replacing Aimee Fratarcangeli. Dan Murphy and crew replace Mark Devine and crew. Aimee Fratarcangeli off site.**

Observer's Initials AF

Week 25

(07-22)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/22/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**314**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 992 ft bls
DRILLER: Dan Murphy
END DEPTH: 1075 ft bls
ACTIVITY: Reaming with 22 ½" bit

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation surveys.

TIME	DESCRIPTION
0700	**Greg Young on site. Dan Murphy and crew on site. Aimee Fratarcangeli off site.**
0830	**Circulating @ 988 ft bls.**
1000	**Depth = 995 ft bls, Pen. Rate ~ 18 min/ft, WOB = 15-20 K lbs.**
1220	**Depth = 1027 ft bls, Pen. Rate ~ 4 min/ft, WOB = 5-10 K lbs.**
1408	**Depth = 1058 ft bls, Pen. Rate ~ 4 min/ft, WOB = 5-10 K lbs.**
1445	**Depth = 1065 ft bls, Pen. Rate ~ 4 min/ft, WOB = 5-10 K lbs.**
1550	**KD. Circulating. Deviation Survey performed.**
1708	**Depth = 1076 ft bls, Pen. Rate ~ 3 min/ft, WOB = 10-15 K lbs.**
1900	**AF on site. Mark Devine and crew on site. Dan Murphy and crew off site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/22/2005 1900 to 7/23/2005 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**315**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1,075 ft bls
DRILLER: Mark Devine
END DEPTH: 1,155 ft bls
ACTIVITY: Reaming with 22 ½ -inch bit

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: Deviation survey.

TIME	DESCRIPTION
1900	**Aimee Fratarcangeli on site. Mark Devine and crew on site. Dan Murphy and crew off site. Discuss site safety and project progress with Greg Young. Greg Young off site.**
1944	**Reaming at 1119 feet bpl. Weight on bit is 10,000 pounds. Penetration rate is 3 minutes per foot.**
2120	**Reaming at 1144 feet bpl. Weight on bit is 10,000 to 15,000 pounds. Penetration rate is 2 minutes per foot.**
2150	**Reaming at 1145 feet bpl. Weight on bit is 20,000 pounds. Penetration rate is 20 minutes per foot.**
2245	**Reaming at 1151 feet bpl. Weight on bit is 20,000 pounds. Penetration rate is 15 to 20 minutes per foot.**
0130	**Drill to total depth of 22 ½- inch hole at 1,155 feet bpl and circulate.**
0245	**Kill the well**
0350	**Pull airline out of hole.**
0430	**Trip up into casing with 22 ½-inch bit.**
0630	**Shift shuts down for the weekend. No work at sight until Monday morning July 25th at 0700.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/25/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X		X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X	X	**316**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1155 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1155 ft bls
ACTIVITY: Cleaning borehole for intermediate casing run.

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Daniel Keeley II and crew on site.**
0850	**Mixing.**
0900	**TIH to bottom in order to circulate and condition borehole.**
1030	**Continue to TIH. Strapping 16-inch casing.**
1140	**Continue to circulate/clear borehole of debri.**
1200	**Shutting off for two hours and then will circulate for an hour and repeat this process until the borehole is clean.**
1900	**GY on site. Mark Devine and crew on site. Dan Keeley II and crew off site. AS off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/25/05 1900 to 7/26/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**317**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1155 ft bls
DRILLER: Mark Devine
END DEPTH: 1155 ft bls
ACTIVITY: Geophysical Caliper Logging

SUB CONTRACTORS: YBI Geophysical (Clay Ferguson)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Alejandra Simon off site.**
2300	**TOOH with tremie pipe.**
2345	**TOOH with drill pipe.**
0200	**YBI Geophysical on site.**
0220	**Begin Caliper Log.**
0330	**Caliper Log complete. Begin setting up for casing run.**
0345	**YBI Geophysical off site.**
0700	**AS on site. Dan Keeley II and crew on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/26/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**318**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1155 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1155 ft bls
ACTIVITY: 16-inch intermediate casing run.

SUB CONTRACTORS: Jammie Allen, Eddie Bankstone, Mike Boston, Eddie Mac. (Welders)
Josh Brown (Florida Cementing)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Daniel Keeley II and crew on site. Welders on site. Site safety discussed GY off site.**
0710	**Welding joint #2 onto joint #1.**
1640	**Done with casing run. Welders working on wellhead.**
1800	**Welders off site. YBI preparing to cement casing in place at 1,150 feet bls.**
1900	**GY on site. Mark Devine and crew on site. Dan Keeley II and crew off site. AS off site.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/26/05 1900 to 7/27/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**319**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1155 ft bls
DRILLER: Mark Devine
END DEPTH: 1155 ft bls
ACTIVITY: Geophysical Caliper Logging

SUB CONTRACTORS: Florida Cementing (Josh Brown)
YBI Geophysical (John Cathey and Jim Goodwin)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Alejandra Simon off site.**
2133	**Josh Brown on site.**
2142	**Cementing 16" casing begins with 12% gel.**
2144	**9 bbls gone. 5 bbls/min. 12.6 lbs/gal.**
2154	**50 bbls gone.**
2201	**75 bbls gone.**
2208	**100 bbls gone.**
2209	**112 bbls gone. Switching to neat.**
2216	**140 bbls gone. 6 bbls/min. 15.6 lbs/gal.**
2226	**196 bbls gone. Going to Chase (5.5 bbls)**
0400	**TOOH in prep for Temp Log.**
0520	**TOOH complete.**
0630	**YBI Geophysical on site.**
0700	**AS on site. Dan Keeley II and crew on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/27/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**320**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1155 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1155 ft bls
ACTIVITY: 16-inch intermediate casing cementing.

SUB CONTRACTORS: Josh Brown (Florida Cementing)
Jim Goodwin (YBI Geophysical logging)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Daniel Keeley II and crew on site. Site safety discussed GY off site. Received temperature log from John Cathey. Estimated top of cement is 972 feet bls.**
0801	**TIH with tremie tubing in the annulus.**
0920	**Physical tag at 885 feet bls.**
0956	**Start cementing.**
1048	**Done cementing with 166 bbls of 12% gels.**
1212	**YBI hooking up a flow meter to pump fresh water into the injection zone requirement for the radioactive tracer test. Totalizer reads 390,586 gallons, will pump 3 casing volumes (55,290 gallons).**
	Pad monitoring well sampling.
1730	**Jim Goodwin (YBI Geophysical logging) on site to conduct temperature log. Estimated top of cement is 678 feet bls. YBI preparing to tag.**
1845	**Physical tag at 666 feet bls.**
1900	**GY on site. Mark Devine and crew on site. Dan Keeley II and crew off site. AS off site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/27/05 1900 to 7/28/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X	X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**321**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1155 ft bls
DRILLER: Mark Devine
END DEPTH: 1155 ft bls
ACTIVITY: Cementing 16" pilot hole

SUB CONTRACTORS: Florida Cementing (Josh Brown)
YBI Geophysical (John Cathey and Jim Goodwin)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Alejandra Simon off site.**
1915	**Josh Brown on site.**
1931	**Cementing 16" casing begins with 12% gel and 175 psi casing pressure.**
1937	**22 bbls gone. 2.5-4 bbls/min. (obstruction on cement hose) 12.6 lbs/gal.**
1947	**55 bbls gone.**
1950	**60 bbls gone. Obstruction causing problems. Switching to chase.**
2000	**TOOH in prep for temp log.**
0545	**YBI Geophysical on site.**
0700	**AS on site. Dan Keeley II and crew on site. GY off site.**

Observer's Initials GY

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/28/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**322**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1155 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1155 ft bls
ACTIVITY: 16-inch intermediate casing cementing.

SUB CONTRACTORS: Josh Brown (Florida Cementing)
Jim Goodwin and John Cathey (YBI Geophysical logging)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Daniel Keeley II and crew on site. Site safety discussed GY off site. Tagged top of cement at 555 feet bls. Josh Brown (Florida Cementing) on site.**
0726	**Start cementing- Stage 4.**
0735	**End Stage 4 with 33 barrels of 12% gel.**
0800	**Pumping fresh water into the injection well resumes (it was shut down during the night shift).**
1500	**YBI Geophysical Loggers on site to run temperature log.**
1513	**TIH with log tool.**
1530	**Done with log. Estimated top of cement is 440 feet bls. Pumping fresh water into the injection well is complete. Totalizer reads 497,049 gallons, a total of 106,463 gallons of potable water were pumped (3.9 casing volumes).**
1540	**Tagged at 465 feet bls.**
1627	**Start cementing- Stage 5**
1702	**End Stage 5 with 132 barrels of 12% gel. Cement visible on surface. WOC.**
1900	**GY on site. Mark Devine and crew on site. Dan Keeley II and crew off site. AS off site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/28/05 1900 to 7/29/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X	X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**323**

SHIFT SUMMARY

OBSERVER: Greg Young
START DEPTH: 1155 ft bls
DRILLER: Mark Devine
END DEPTH: 1155 ft bls
ACTIVITY: Cementing 16" pilot hole

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
1900	**Greg Young on site. Mark Devine and crew on site. Alejandra Simon off site. WOC**
0700	**AS on site. Dan Keeley II and crew on site. GY off site.**

Observer's Initials GY

Week 26

(07-29)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 7/29/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
	X			
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**324**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1155 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1155 ft bls
ACTIVITY: Reaming 14 ¾-inch borehole.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: None

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Daniel Keeley II and crew on site. Site safety discussed. GY off site.**
0800	**Preparing to TIH with 14 ¾-inch bit.**
1100	**TIH with drill collars and one drill pipe stand. Air compressor is not working.**
1200	**Electrician on site working on compressor. The mechanic will arrive later on today between 13:00 and 16:00.**
1300	**Electrician off site.**
1315	**Mechanic on site.**
1500	**No parts available for repairs. Mechanic will be on site tomorrow Saturday for repairs. Drilling activities will be shut down until Monday, August 1, 2005.**
	AS off site.

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/01/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**325**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1155 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1174 ft bls
ACTIVITY: Radioactive Tracer Survey (IW-1) and Reaming with 14 ¾ -inch bit (DZMW-1)

SUB CONTRACTORS: Jim Goodwin and John Cathey (YBI Geophysical Logging Division)
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Radioactive Tracer Survey

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Daniel Keeley II and crew on site. Jim Goodwin and John Cathey (YBI Geophysical Logging Division) on site.**
0715	**Loggers run the high resolution temperature log.**
0745	**Logger runs the background gamma.**
0815	**Logger delivers flowmeter calibration sheets. Flowmeter serial # is 4739630 and is 2-inch diameter. Flowmeter reading is 01580920 gallons.**
0915	**Background gamma log and casing collar locator complete.**
0930	**Load tool with 6 mCi of Iodine 131. Assay sheet provided by logger. Flow rate is 45 gpm.**
0940	**Ejector is located at 2095 feet which is 5-feet above the bottom of the steel casing.**
0945	**Eject 1 mCi of Iodine 131 and log in place.**
1045	**Log out of position to 200 feet above ejection point.**
1045	**Flush well for 15 minutes at a rate of 140 gpm.**
1112	**Eject 1 mCi of Iodine 131 and log in place.**
1215	**Log out of position to 200 feet above ejection point.**
1230	**Dumping remainder of Iodine-131 (4 mCi) at 2,130 feet.**
1305	**Begin post survey gamma log bottom of well at 2,853 feet.**
1412	**Post survey gamma log complete.**
1515	**The drill crew begins tripping in the DZMW hole with 14 ¾-inch bit. The rig has been repaired.**

Observer's Initials AF

1700 Begin reaming with the 14 ¾-inch bit.
1800 Reaming with the 14 ¾-inch bit at 1,171 feet bpl.
1900 Alejandra Simon on site. Mark Devine and crew on site. Dan Keeley II and crew off site. Aimee Fratarcangeli off site.

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/01/05 1900 to 8/02/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X	X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**326**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1174 ft bls
DRILLER: Mark Devine
END DEPTH: 1400 ft bls
ACTIVITY: Reaming 14 ¾ inch borehole

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation survey.

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Aimee Fratarcangeli off site. Site safety discussed.**
2220	**Reaming at 1,223 feet bls with a penetration rate of 4 to 6 minutes per foot and 5,000 lbs on bit.**
2430	**KD at 1,280 feet bls. Taking deviation survey and making connection.**
0136	**Reaming at 1,293 feet bls with a penetration rate of 2 minutes per foot and 3,000 to 4,000 lbs on bit.**
0300	**Reaming at 1,323 feet bls with a penetration rate of 2 minutes per foot.**
0450	**KD at 1,360 feet bls. Taking deviation survey and making connection.**
0646	**Reaming at 1,397 feet bls with a penetration rate of 1 to 2 minutes per foot and 5,000 to 10,000 lbs on bit.**
0700	**Reaming at 1,400 feet bls. ABF on site. AS off site. Dan Keeley II and crew on site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/02/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**327**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1400 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1455 ft bls
ACTIVITY: Reaming with 14 ¾ -inch bit (DZMW-1)

SUB CONTRACTORS: Jamie Allan (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Daniel Keeley II and crew on site replacing Mark Devine and crew. Alejandra Simon off site.**
0750	**Resume reaming at 1,411 feet bpl.**
0900	**Reaming at 1,426 feet. Penetration rate is 3 to 5 minutes per foot.**
1000	**Circulate at 1,440 feet bpl. Deviation survey performed.**
1305	**Resume reaming after deviation survey at 1432 feet.**
1400	**Ream to total depth of 14 ¾ inch borehole at 1455 feet bpl and circulate.**
1525	**Trip out of hole to replace 14 ¾ inch bit with 12 ¼ inch bit.**
1650	**Jamie Allen (welder) on site to repair hole in the flow line.**
1800	**Dan Keely tested the packer assembly for tomorrow's pressure test of 16 inch steel casing and packer tested satisfactory.**
1815	**Resume tripping out of the hole.**
1900	**Alejandra Simon on site. Mark Devine and crew on site. Dan Keeley II and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/02/05 1900 to 8/03/05 0700
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X	X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
			X	
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
		X		**328**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1455 ft bls
DRILLER: Mark Devine
END DEPTH: 1535 ft bls
ACTIVITY: Reaming 12 ¼ inch borehole

SUB CONTRACTORS: None
FORMATION SAMPLES: None
WATER SAMPLES: None
TESTING: Deviation survey.

TIME	DESCRIPTION
1900	**Alejandra Simon on site. Mark Devine and crew on site. Aimee Fratarcangeli off site. Site safety discussed. Preparing to TIH and mixing kill- well is alive.**
2400	**Completed TIH with 18 stands. Start reaming with 12 ¼-inch bit.**
2420	**Reaming at 1,458 feet bls with 15,000 lbs on bit. Reaming slow with low rpms. Penetration rate is 6 minutes per foot.**
0333	**Reaming at 1,520 feet bls with 5,000 to 10,000 lbs on bit and a penetration rate of 2 minutes per foot.**
0335	**KD at 1,521 feet bls. Cleaning borehole.**
0348	**Deviation survey and making connection with a single drill pipe.**
0455	**TD @ 1,535 feet bls.**
0523	**Begin TOOH with 81-foot BHA, 18 stands plus single.**
0700	**ABF on site. AS off site. Dan Keeley II and crew on site.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/03/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**329**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Geophysical logging and Pressure Test 16-inch diameter steel casing set to 1,150 feet bpl

SUB CONTRACTORS: Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Daniel Keeley II and crew on site replacing Mark Devine and crew. Alejandra Simon off site.**
0710	**Continue tripping out of the hole with 12 ¼ inch bit.**
0750	**Out of hole with bottom hole assembly. Waiting on loggers.**
0800	**Logger (Jim Goodwin) on site rigging up for caliper and gamma logs.**
0930	**Logging complete**
1035	**Progress Meeting with Lee County Utilities. Mark Chandler, John Kaufman and Aimee Fratarcangeli attending from MWH.**
1100	**Trip in the hole with packer assembly for pressure test of 16-inch steel casing. Packer set at 1137.87.**
1655	**Begin pressure test at 150 psi.**
1755	**Pressure test complete at 154 psi. Change in pressure of 2.6%.**
1800	**Welder cuts well head to prepare for installing FRP tubing.**
1900	**Mark Devine and crew on site. Dan Keeley II and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/04/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
				X
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**330**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Prepare well to install FRP tubing.

SUB CONTRACTORS: Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Daniel Keeley II and crew on site replacing Mark Devine and crew.**
0710	**Drill pipe has been laid down**
0900	**Youngquist dump truck on site to remove cuttings**
1100	**Welder prepares wellhead.**
1500	**Welder continues to prepare wellhead.**
1600	**Youngquist dump truck on site to remove cuttings.**
1800	**Drill crew organizing equipment and supplies.**
1900	**Mark Devine and crew on site. Dan Keeley II and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials AF

MWH

SHALLOW PAD MONITORING WELLS
WEEKLY SAMPLING

THE THREE OAKS DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/05/05 12:00
(International Time)

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County Utilities

WELL	TOC ELEVATION (NGVD)	DEPTH TO WATER (feet)	WATER LEVEL (NGVD)	TEMPERATURE (°C)	pH	CONDUCTIVITY (µmhos/cm)	CHLORIDE (mg/L)
NW	21.34	4.87	16.47	24.5	7.61	459	33
NE	22.97	6.44	16.53	26.4	7.57	432	29
CW	21.87	5.55	16.32	25.7	7.65	503	39
CE	23.35	6.80	16.55	26.8	7.59	523	29
SW	21.68	5.26	16.42	26.3	7.64	582	36
SE	21.87	5.39	16.48	26.5	7.61	553	37

Comments:

Sampled By: **Aimee Fratarcangeli**

FORM NO. 07-01

Observer's Initials: AF

August 5, 2005

Mr. Jack Myers, P.G.
Florida Department of Environmental Protection
2295 Victoria Avenue, Suite 364
Fort Myers, Florida 33901

SUBJECT: Three Oaks Wastewater Treatment Facility
IW-1 Class I Injection Well
Weekly Summary Report No. 26
UIC Permit 38436 – 178 – UC

Dear Mr. Myers:

MWH Americas, Inc. (MWH) is pleased to submit the following Weekly Summary Report on behalf of Lee County. This report is the **twenty-sixth** Weekly Summary Report for the Three Oaks Wastewater Treatment Facility IW-1 Class I Injection Well Project. The summary report covers the period from July 29, 2005 at 0000 hours through August 4, 2005 at 2400 hours. The daily shift reports for this period are included with this submittal.

INJECTION WELL (IW-1)

The Radioactive Tracer Test was performed Monday, August 1, 2005. Initially a high resolution temperature log and background gamma ray log were performed. The first portion of the radioactive tracer survey consisted of the dynamic or pumping portion of the survey. A velocity of 5 to 6 feet per minute was established in the well at a flow rate of 45 gallons per minute. One (1) millliCurie of Iodine 131 was ejected and then logged in-position and logged out-of-position. The well was flushed at a rate of 140 gallons per minute and the dynamic portion was repeated a second time. No apparent anomalies appeared that indicated a lack of mechanical integrity in the injection well.

MONITOR WELL (DZMW-1)

During the reporting period, Reaming for the installation of the 6 5/8-inch fiberglass reinforced plastic casing was completed on August 3, 2005 to the total depth of 1,535 feet below land surface (bls). The bore hole was initially reamed with a 14 ¾-inch bit to a depth of 1,455 feet bpl then cleaned out with a 12 ¼-inch bit to 1,535 feet bpl. The borehole was then cleaned of debris and a caliper log and gamma ray log were run on August 3, 2005.

A pressure test was successfully conducted on the 16-inch steel casing. After installing a single packer to a depth of 1,137 feet bpl, the casing was pressurized to 150 pounds per square inch and

monitored for one hour. At the end of the test the pressure was observed to be 154 pounds per square inch resulting in a change of 2.6%.

SHALLOW PAD MONITOR WELLS

The shallow pad monitor wells (PMWs) were sampled on August 4, 2005. An analysis of the water quality parameters was made in the field by MWH. The field analysis results from August 4, 2005 are included in the table below, along with the field analysis results from July 27, 2005.

Monitor Well Number	Water Level Elevation (NGVD)		Chloride Concentration (mg/L)		pH		Specific Conductance (umhos/cm)		Temperature (^{o}C)	
Date:	7/27	8/4	7/27	8/4	7/27	8/4	7/27	8/4	7/27	8/4
NW	16.32	16.47	31	33	7.50	7.61	444	459	23.5	24.5
NE	16.39	16.53	30	29	7.60	7.57	446	432	27.4	26.4
CW	16.27	16.32	36	39	7.82	7.65	493	503	26.8	25.7
CE	16.37	16.55	27	29	7.54	7.59	511	523	27.5	26.8
SW	16.33	16.42	39	36	7.61	7.64	597	582	26.0	26.3
SE	16.36	16.48	39	37	7.55	7.61	560	553	26.7	26.5

A summary of all pad monitor well water quality data and water levels is provided in an attachment.

PROPOSED FUTURE ACTIVITIES FOR NEXT REPORTING PERIOD

Preparations will be made for the completion of the following tasks:

Injection Well (IW-1)

The injection test will be planned in the near future.

Monitor Well (DZMW-1)

During the next reporting period, the 6 ⅝-inch Fiberglass Reinforced Pipe (FRP) will be installed to the top of the Lower Monitor Zone. The FRP will be cemented in place by placing a California packer at the top of the Lower Monitor Zone (1,460 ft bls). The 6 5/8-inch FRP tubing will be cemented from 1,460 feet up to 1,200 feet. Temperature logging will be performed during the cementing operations. Once the FRP has been cemented then the upper and lower monitoring zones will be developed, sampled, and analyzed by a certified laboratory.

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DRILLING OBSERVATION AND TESTING

Drilling observation, testing, and sampling was conducted by Aimee Fratarcangeli, P.G. and Alejandra Simon.

CONTRACTOR

Youngquist Brothers, Inc.
Drilling Superintendent: Kevin Greuel

SUBCONTRACTORS

Mike Boston and Jamie Allan. (Welders)
YBI Geophysical Logging Division

If you should have any questions, please do not hesitate to contact me at (813) 221-1981. Address and telephone numbers for MWH are supplied on the attached distribution list.

Sincerely,

MWH Americas, Inc.

Mark Chandler
Senior Engineer

Attachments: Distribution List
Daily Shift Reports
Pad monitor wells weekly water quality data

Week 27

(08-05)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/05/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**331**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535ft bls
DRILLER: Dan Murphy
END DEPTH: 1535 ft bls
ACTIVITY: Prepare well to install FRP tubing.

SUB CONTRACTORS: Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy and crew on site replacing Mark Devine and crew.**
0900	**Youngquist dump truck on site to remove cuttings**
0930	**Welder prepares stainless steel final joint.**
1100	**Youngquist dump truck on site to remove cuttings. Crew cleans up rig and location.**
1600	**Youngquist dump truck on site to remove cuttings.**
1800	**Drill crew organizing equipment and supplies.**
1900	**Dan Murphy and crew off site. Aimee Fratarcangeli off site. Only two man crew on site for night shift.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/06/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
						X

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**332**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535ft bls
DRILLER: Dan Murphy / Mark Devine
END DEPTH: 1535 ft bls
ACTIVITY: Install 6 5/8- inch FRP tubing.

SUB CONTRACTORS: FRP tubing crew. (Future Pipe Company). Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Dan Murphy and crew on site and Mark Devine and crew on site. FRP four man crew on site**
0730	**Tally 6 5/8-inch diameter FRP tubing. Install centralizers on tubing.**
0900	**Prepare to run FRP tubing. Waiting on installation equipment.**
1028	**Begin running 6 5/8-inch FRP tubing. California packer is hanging in the DZMW. All FRP tubing threads have been taped with teflon tape. Pipe dope used for the threads is black TFC-15 Thread Sealing Compound. Casing installation is recorded on DZMW-1 FRP Tally Form and includes torque and time of each thread completion.**
1520	**Casing is landed at 1460 feet. Welder welding wellhead.**
1645	**Wellhead complete.**
1700	**Dan Murphy/Mark Devine and crew off site. Aimee Fratarcangeli off site. No activity on night crew.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/07/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
X						

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	X
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**333**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535ft bls
DRILLER: Mark Devine
END DEPTH: 1535 ft bls
ACTIVITY: Cement 6 5/8- inch FRP tubing.

SUB CONTRACTORS: Florida Cement Company (Josh Brown). Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Mark Devine and crew on site.**
0730	**Tally 2-inch diameter steel tubing. Install tubing in the annulus.**
1030	**Inflate California Packer to 100 psi.**
1100	**Mix small 2 barrel stage of cement without cement truck. Neat cement with calcium.**
1300	**Tag cement lift at 1439 feet bpl. Mix second small 2 barrel batch of cement and pump in annulus above California Packer. Packer continues to be inflated to 100 psi.**
1652	**Tag second small lift at 1430 feet bpl. Prepare to pump first large lift of cement (60 barrels) of straight Neat cement.**
1712	**Stage 1 – Pump 60 barrels of Neat cement. Temperature log is scheduled in the morning followed by a hard tag to confirm top of cement.**
1900	**Mark Devine and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials **AF**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/08/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
			X	
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**334**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535 ft bls
DRILLER: Mark Devine
END DEPTH: 1535 ft bls
ACTIVITY: Cement 6 5/8- inch FRP tubing.

SUB CONTRACTORS: YBI Geophysical Logging Division (Jim Goodwin and John Kathey);Florida Cement Company (Josh Brown); Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Mark Devine and crew on site. YBI Geophysical Loggers on site**
0710	**Run temperature log to determine approximate top of Neat cement.**
0815	**Hard tag Cement Stage #1 at 1,241 feet bpl.**
0920	**Inflate California Packer to 100 psi.**
0935	**Stage 2 – Pump 12 barrels of Neat cement. Temperature log is scheduled this afternoon followed by a hard tag to confirm top of cement.**
1000	**Stage 2 complete. Wait on cement to cure.**
1551	**Geophysical logger on site running temperature log on Stage #2. Theoretical temperature tag is at an approximate depth of 1,200 feet bpl.**
1639	**The hard tag is at a depth of 1,204 feet bpl. Therefore, the Upper Monitoring Zone is from 1,150 feet bpl to 1,204 feet bpl.**
1700	**Rig up the cement truck to pump fresh water in Upper Monitoring Zone to remove fines, mud and gel that have been added top side to control the well.**
1816	**Pumped a total of 220 barrels of water with the cement truck to move the heavy material from the UMZ. Will begin developing the Upper Monitor Zone tomorrow.**
1900	**Mark Devine and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials **AF**

MWH

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/09/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**335**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535 ft bls
DRILLER: Mark Devine
END DEPTH: 1535 ft bls
ACTIVITY: Cement Bond Log on the 6 5/8-inch FRP and Development of the Upper Monitor Zone and Milling out the Shear Plug
SUB CONTRACTORS: YBI Geophysical Logging Division (Jim Goodwin and John Kathey);Florida Cement Company (Josh Brown); Mike Boston (welder).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Mark Devine and crew on site.**
0930	**Clay Ferguson and John Cathey on site (Geophysical Loggers) to run the sector cement bond log on the 6 5/8 inch FRP casing.**
1140	**Bond log complete. CBL remained calibrated throughout the entire run. Also very good bond log.**
1150	**Begin developing upper monitoring zone at a rate of 86 gallons per minute.**
1256	**Begin pressurizing the FRP casing to shear the plug. Apply a maximum pressure of 540 psi while tapping on the plug with 2-inch tremie pipe. Plug will not shear therefore we must mill the plug.**
1326	**Tanker #2 off site with 7,000 gallons of development water.**
1435	**Tanker #3 off site with 7,000 gallons of development water.**
1435	**Collecting stabilization data from upper monitoring zone every hour.**
1635	**Tanker #5 off site with 7,000 gallons of development water.**
1720	**Driller has manufactured mill bit to go inside the FRP casing and begins tripping in the hole.**
1840	**Driller continues to rig up to mill out shear plug.**
1900	**Shut in upper monitoring zone. Mark Devine and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials **AF**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/10/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
		X		
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**336**

SHIFT SUMMARY

OBSERVER: Aimee Fratarcangeli
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Development of the Upper Monitor Zone and Milling out the Shear Plug

SUB CONTRACTORS: Florida Cement Company (Josh Brown).
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Aimee Fratarcangeli on site. Mark Devine and crew on site. Resume development of the upper monitor zone.**
0815	**Begin milling the aluminum shear plug with mill bit attached to 2-inch tremie pipe. Cement pump truck is attached to the tremie providing fresh water to cool the bit.**
1053	**Stop milling the shear plug and trip out of the hole to inspect mill bit.**
1200	**The mill bit is worn therefore Youngquist will re-dress the mill bit.**
1458	**The bit has been re-dressed and is back on bottom drilling the shear plug. Weight on bit is 3,000 pounds. Continue developing the upper monitor zone.**
1700	**Stop milling the shear plug and trip out of the hole to inspect mill bit.**
1730	**Collecting stabilization data from upper monitoring zone every hour.**
1900	**Shut in upper monitoring zone. Dan Keeley II and crew off site. Aimee Fratarcangeli off site.**

Observer's Initials AF

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/11/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**337**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Development and Sampling of the Upper Monitor Zone and Milling out the Shear Plug

SUB CONTRACTORS: Sanders Laboratory (Noah)
FORMATION SAMPLES: None.
WATER SAMPLES: Primary and Secondary Water Quality Parameters of Upper Monitor Zone.
TESTING: None.

TIME	DESCRIPTION
0700	**Richard Walther on site. Mark Devine and crew on site.**
0730	**Resume development of the upper monitor zone. Collecting stabilization water quality data from upper monitoring zone every hour.**
0930	**Begin milling the aluminum shear plug with mill bit attached to 2-inch tremie pipe. Cement pump truck is attached to the tremie providing fresh water to cool the bit.**
0953	**Shear plug milled out of bottom of FRP tubing. TOOH with mill bit.**
1200	**Flushing 6 5/8-inch FRP tubing with fresh water clear up borehole prior to video survey.**
1505	**Sanders Lab (Noah) onsite to sample UMZ for primary and secondary water quality parameters**
1540	**Sanders Lab sampling UMZ.**
1555	**Sanders Lab offsite**
1600	**YBI taking 5 gallon sample of UMZ.**
1605	**Using clear tube taped vertically to rig to measure potentiametric head of UMZ; 25.9 ft above surface. Shutting in UMZ.**
1700	**Shut in lower monitoring zone. Dan Keeley II and crew off site.**
1900	**Richard Walther offsite.**

Observer's Initials RAW

Week 28

(08-12)

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/12/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**338**

SHIFT SUMMARY

OBSERVER: Richard Walther
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Flushing UMZ and Video Survey

SUB CONTRACTORS: Youngquist Brothers Geophysical Logging (Clay Ferguson, Jim)
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	Richard Walther on site. Dan Keeley and crew on site. YBI Geophysical onsite.
0715	Running video survey
0745	Hole too cloudy, stopped video survey at 400 ft bls.
0750	TIH with open ended drill pipe.
0915	Pumping fresh water into lower monitor zone
1540	Stopped pumping. TOOH with open ended drill pipe.
1610	Restarted video.
1730	Airline burst. YBI repairing. Video stopped at 900 ftbls.
1905	Problem fixed, restarted video log.
2030	Video complete
2100	Dan Keeley II and crew off site. YBI Geophysical Logging offsite.
2100	Richard Walther offsite.

Observer's Initials RAW

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/15/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**339**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Dan Keeley II
ACTIVITY: FRP pressure test.

START DEPTH: 1535 ft bls
END DEPTH: 1535 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Keeley and crew on site.**
0900	**TIH with California packer.**
1250	**Pressure testing of the FRP begins with 103 psi.**
1350	**End of pressure test. Change in pressure was of 5 psi or 4.8%. Bleeding off valve.**
1400	**TOOH with California packer**
1650	**Completed TOOH. Crew preparing to rig down.**
1730	**Rigging down continues and will continue through Tuesday. Development of the lower monitoring zone will follow.**
1800	**Dan Keeley II and crew off site.** **Alejandra Simon offsite.**

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/16/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
		X				

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**340**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
DRILLER: Dan Keeley II
ACTIVITY: Rigging down.

START DEPTH: 1535 ft bls
END DEPTH: 1535 ft bls

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: None.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Keeley and crew on site.**
	Rigging down continues.
1550	**Lowering derrick.**
1720	**Laying down rig.**
1830	**Dan Keeley II and crew off site.**
	Alejandra Simon offsite.

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/17/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
			X			

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**341**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Rigging down / LMZ development.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality samples taken during development.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Keeley and crew on site. Rigging down continues.**
0800	**Tanker on site, welder cutting off the 2-foot wall of the containment pad.**
0900	**Cement truck off site. Crew preparing to remove rig and oil trucks from inside containment pad.**
1306	**Development of lower monitoring zone (LMZ) begins using an air compressor. Flow rate is approximately 12 gpm.**
1400	**Sampling of pad monitoring wells.**
1630	**Pumping has been intermittent due to problems with the air compressor. Approximately pumping time =2.5 hours at 12 gpm = 1,800 gallons have been purged from the well.**
1830	**1.5 well volumes purged (3,250 gallons). Water quality sample taken.**
1900	**Dan Keeley II and crew off site. Alejandra Simon offsite.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/18/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
				X		

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**342**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Rigging down / LMZ development.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality samples taken during development.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Keeley and crew on site. Rigging down continues. Cameron Webster replacing Kevin Greuel.**
0900	**Crane on site to remove floor structure and lay down silo. LMZ development will continue when floor structure is removed.**
0940	**Preparing to lay down silo.**
1123	**Preparing to lift floor structure.**
1330	**Started developing LMZ.**
1500	**1.96 well volumes purged (4,320 gallons). Water quality sample taken.**
1600	**2.29 well volumes purged (5,040 gallons). Water quality sample taken.**
1800	**Dan Keeley II and crew off site. Alejandra Simon offsite.**

Observer's Initials AS

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/19/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
					X	

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**343**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Rigging down / LMZ development.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality samples taken during development.
TESTING: None.

TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Keeley and crew on site.**
	Rigging down continues.
0730	**LMZ development continues.**
0830	**Tanker is full, 7,000 gallons purged from the well (3.18 well volumes)**
0845	**Tanker off site.**
1043	**Tanker on site to continue with development.**
1300	**3.92 well volumes purged (8,620 gallons). Water quality sample taken.**
1500	**4.50 well volumes purged (10,060 gallons). Water quality sample taken.**
1630	**5.00 well volumes purged (11,140 gallons). Water quality sample taken.**
1700	**Dan Keeley II and crew off site.**
	Alejandra Simon offsite.

Observer's Initials **AS**

DZMW-1 DAILY SHIFT REPORT

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

DATE(S) & TIME(S): 8/22/2005 0700 to 1900
(International Time)

Sun	Mon	Tue	Wed	Thr	Fri	Sat
	X					

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MGR: Mark Chandler

OWNER: Lee County

Weather	Clear	Overcast	Rain	Heavy Rain
	X			
Temperature	32 - 50	50 - 70	70 - 85	> 85
				X
Wind	Still	Medium	High	
		X		
Humidity	Dry	Moderate	Humid	**Report No.**
			X	**344**

SHIFT SUMMARY

OBSERVER: Alejandra Simon
START DEPTH: 1535 ft bls
DRILLER: Dan Keeley II
END DEPTH: 1535 ft bls
ACTIVITY: Rigging down / LMZ development.

SUB CONTRACTORS: None.
FORMATION SAMPLES: None.
WATER SAMPLES: Water quality samples taken during development.
TESTING: None.

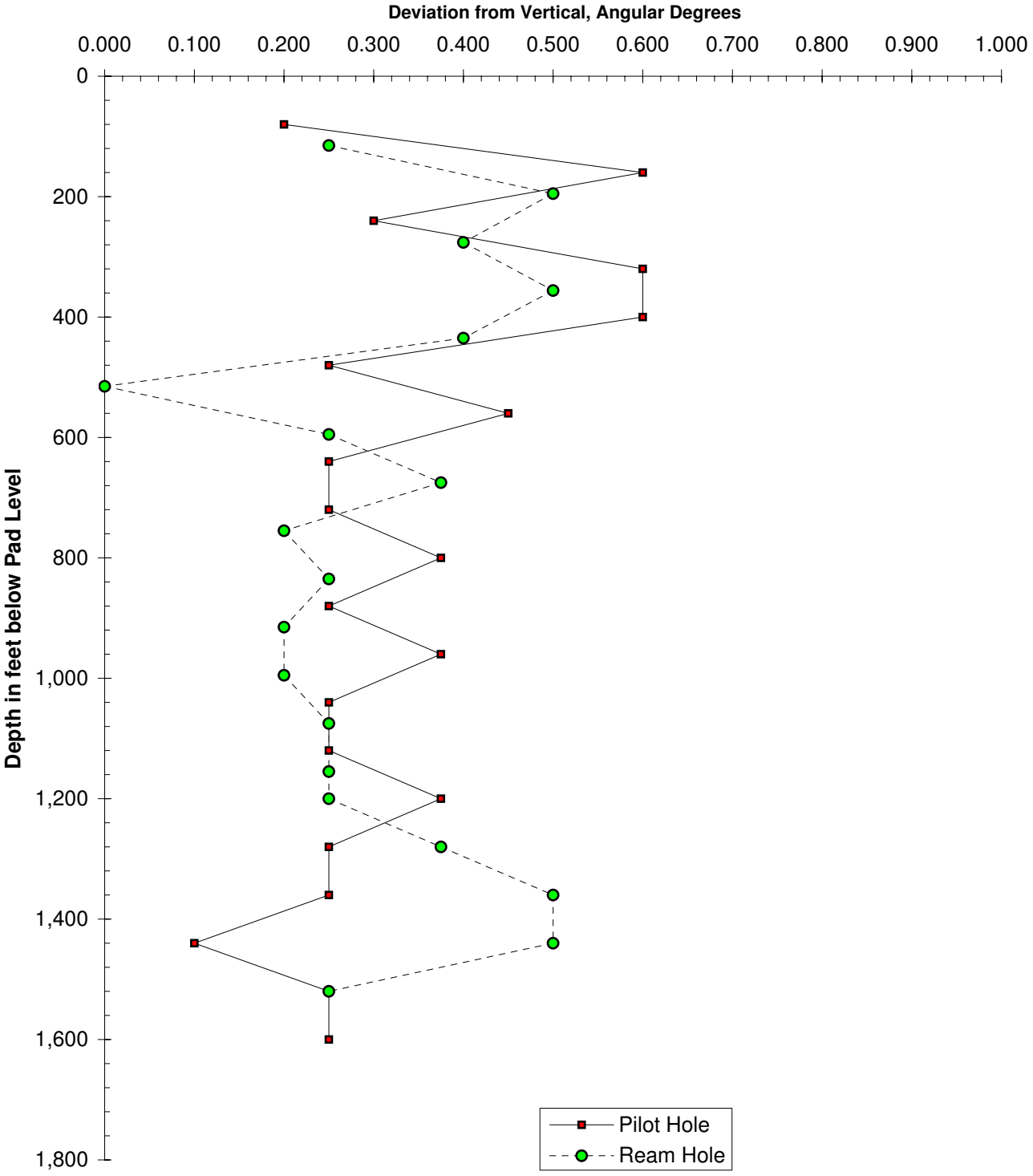
TIME	DESCRIPTION
0700	**Alejandra Simon on site. Dan Murphy and crew on site. Rigging down continues.**
0730	**LMZ development continues.**
0830	**Tanker is full, 11,860 gallons purged from the well (5.4 well volumes)**
0845	**Tanker off site.**
1030	**Tanker on site to continue with development.**
1130	**5.55 well volumes purged (12,220 gallons). Water quality sample taken.**
1300	**6.05 well volumes purged (13,300 gallons). Water quality sample taken.**
1330	**Stopped development, water is stable. Sanders Laboratory will be on site tomorrow to sample well for primary and secondary parameters as required by FDEP.**
1700	**Dan Murphy and crew off site. Alejandra Simon offsite.**

Observer's Initials AS

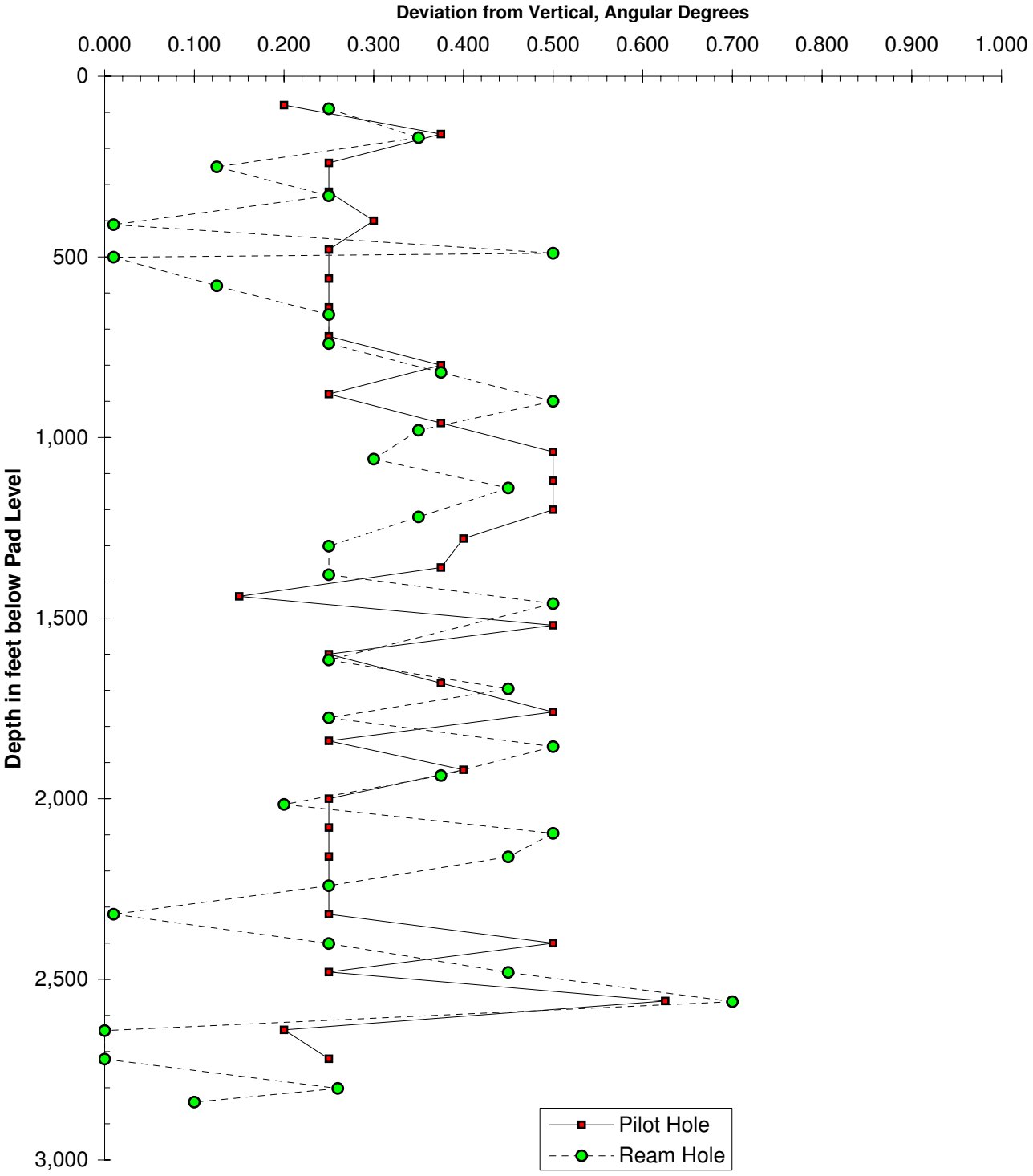
Appendix C

Deviation Surveys

Monitor Well
Pilot & Ream
Comparison of Deviation Surveys



Injection Well
Pilot & Ream
Comparison of Deviation Surveys



Appendix D

Mill Certificates

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: March 17, 2005 Number of Copies: 8

Submittal Number: 02633-031A

Specification Section Number M02633-031A

Item Submitted: 6 5/8" Lower Zone FRP

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Rick Chenault

Transmittal Date: March 17, 2005

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By: _____

Firm: _____

Date: _____

M W H			
NO EXCEPTIONS TAKEN	✓	AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	
REVIEWED BY: [signature]		DATE: 3/25/05	
RECOMMENDED BY: [signature]		DATE: 3/30/05	

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR ~~FROM~~ COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES; COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

FUTURE PIPE INDUSTRIES, INC.
(TUBULAR FIBERGLASS CORPORATION)
11811 Proctor Road • Houston, Texas 77038
Phone: (281) 847-2987 • Fax: (281) 847-1931

ISO 9001 CERTIFIED FIRM

September 2003

YOUNGQUIST BROTHERS, INC.
Has Received This Shop Drawing Submittal
MSI/Section No.: 02633.03 1A
Date: 3/12/04
Signature:

RED BOX 2500

FIBERGLASS TUBING, CASING, AND LINERS
AROMATIC AMINE CURED EPOXY RESIN

DIMENSIONAL SPECIFICATIONS

Nominal Size (inches)	Nominal I.D. (inches)	Minimum Drift Dia (inches)	Nominal O.D. (inches)	Nominal Wall (inches)	Pin Upset O.D. (inches)	Max Box OD* (inches)	Nominal Weight (lbs/ft)	Nominal Weight (lbs/jt)	Connection Type API 5B, Table 14*, 7**, 6*** Fourteenth Edition August 96
2-3/8	2.00	1.91	2.43	0.22	2.69	3.47	1.3	40	2-3/8" 8Rd EUE Long*IJ
2-7/8	2.47	2.37	2.99	0.26	3.19	3.97	2.0	59	2-7/8" 8Rd EUE Long*IJ
3-1/2	3.00	2.90	3.63	0.32	3.85	4.56	2.9	86	3-1/2" 8Rd EUE Long*IJ
4	3.33	3.24	4.03	0.35	4.35	5.29	3.7	111	4" 8Rd EUE Long TC
4-1/2	3.98	3.89	4.83	0.42	4.85	5.88	5.0	150	4-1/2" 8Rd EUE Long*IJ
5-1/2	4.42	4.33	5.36	0.47	5.60	6.82	6.3	189	5-1/2" 8Rd Csg Long**IJ
6-5/8	5.43	5.33	6.59	0.58	6.73	8.41	9.6	288	6-5/8" 8Rd Csg Long**IJ
7-5/8	6.21	6.11	7.54	0.67	7.73	9.75	12.6	377	7-5/8" 8Rd Csg Long**IJ
9-5/8	7.84	7.75	9.50	0.83	9.73	12.65	19.8	593	9-5/8" 8Rd Csg*** IJ
10-3/4	8.85	8.76	10.72	0.94	10.85	14.00	25.9	776	10-3/4" 8Rd Csg***TC

*Depending on the application, smaller maximum box diameters are available.

Thread lengths on larger sizes exceed API L4
30 ft Standard Joint Length

PERFORMANCE AND RATINGS (-60 deg F to +210 deg F)

Nominal Size	Internal Pressure Rating (psi)	Mill Test Pressure (psi)	Collapse Rating (psi)	Axial Tension Rating (lbs)	Stretch vs Tension-Over-Pipe-Wt Stretch (ft) = Coeff. x P x L
2-3/8	2,500	2,850	2,900	17,500	0.217
2-7/8	2,500	2,850	2,900	24,500	0.147
3-1/2	2,500	2,850	2,900	33,000	0.103
4	2,500	2,850	2,900	41,000	0.083
4-1/2	2,500	2,850	2,900	48,000	0.057
5-1/2	2,500	2,850	2,900	57,500	0.047
6-5/8	2,500	2,850	2,900	75,000	0.030
7-5/8	2,500	2,850	2,900	90,000	0.023
9-5/8	2,500	2,850	2,900	146,500	0.015
10-3/4	2,500	2,850	2,900	169,000	0.012

Where: P = Tensile Load (1,000 lbs)
L = String Length (1,000 ft)

MECHANICAL AND PHYSICAL PROPERTIES

TUBING/CASING BODY PROPERTIES	UNIT	VALUE 2-3/8 - 10-3/4	VALUE 11-3/4 - 16	TEST METHOD
Tensile Strength, Hoop	psi	31,300	31,300	ASTM D1599
Tensile Strength, Axial	psi	30,000	20,000	ASTM D2105
Modulus of Elasticity, Axial	10E+06 psi	3.0	2.0	ASTM D2105
Long Term Hydrostatic Strength at 20 Years	psi	16,875	19,109	ASTM D2992 (B)
Specific Gravity	—	1.9	1.9	ASTM D792
Density	lbs/in^3	0.07	0.07	ASTM D792
Thermal Conductivity	$Btu/hr/ft^2/in/degF$	2.4	2.4	ASTM C177
Thermal Expansion Coefficient (Linear)	10E-05in/in/degF	1.1	1.2	ASTM D696
Flow Factor	—	150	150	Hazen Williams

RED BOX® CASING AND TUBING SYSTEM **YELLOW BOX® LINE PIPE SYSTEM**

Email: tubularfiberglass@houston.rr.com • website: www.tubularfiberglass.com

FUTURE PIPE INDUSTRIES, INC.
(TUBULAR FIBERGLASS CORPORATION)
11811 Proctor Road • Houston, Texas 77038
Phone: (281) 847-2987 • Fax: (281) 847-1931

ISO 9001 CERTIFIED FIRM

September 2003

YOUNGQUIST BROTHERS, INC.
Has Received This Shop Drawing Submittal
MSI/Section No.: 02633.03 1A
Date: 3/12/04
Signature: [signature]

RED BOX 2500

FIBERGLASS TUBING, CASING, AND LINERS
AROMATIC AMINE CURED EPOXY RESIN

DIMENSIONAL SPECIFICATIONS

Nominal Size (inches)	Nominal I.D. (inches)	Minimum Drift Dia (inches)	Nominal O.D. (inches)	Nominal Wall (inches)	Pin Upset O.D. (inches)	Max Box OD* (inches)	Nominal Weight (lbs/ft)	Nominal Weight (lbs/jt)	Connection Type API 5B, Table 14*, 7**, 6*** Fourteenth Edition August 96
2-3/8	2.00	1.91	2.43	0.22	2.69	3.47	1.3	40	2-3/8" 8Rd EUE Long*IJ
2-7/8	2.47	2.37	2.99	0.26	3.19	3.97	2.0	59	2-7/8" 8Rd EUE Long*IJ
3-1/2	3.00	2.90	3.63	0.32	3.85	4.56	2.9	86	3-1/2" 8Rd EUE Long*IJ
4	3.33	3.24	4.03	0.35	4.35	5.29	3.7	111	4" 8Rd EUE Long TC
4-1/2	3.98	3.89	4.83	0.42	4.85	5.88	5.0	150	4-1/2" 8Rd EUE Long*IJ
5-1/2	4.42	4.33	5.36	0.47	5.60	6.82	6.3	189	5-1/2" 8Rd Csg Long**IJ
→ 6-5/8	5.43	5.33	6.59	0.58	6.73	8.41	9.6	288	6-5/8" 8Rd Csg Long**IJ
7-5/8	6.21	6.11	7.54	0.67	7.73	9.75	12.6	377	7-5/8" 8Rd Csg Long**IJ
9-5/8	7.84	7.75	9.50	0.83	9.73	12.65	19.8	593	9-5/8" 8Rd Csg*** IJ
10-3/4	8.85	8.76	10.72	0.94	10.85	14.00	25.9	776	10-3/4" 8Rd Csg***TC

*Depending on the application, smaller maximum box diameters are available.

Thread lengths on larger sizes exceed API L4
30 ft Standard Joint Length

PERFORMANCE AND RATINGS (-60 deg F to +210 deg F)

Nominal Size	Internal Pressure Rating (psi)	Mill Test Pressure (psi)	Collapse Rating (psi)	Axial Tension Rating (lbs)	Stretch vs Tension-Over-Pipe-Wt Stretch (ft) = Coeff. x P x L
2-3/8	2,500	2,850	2,900	17,500	0.217
2-7/8	2,500	2,850	2,900	24,500	0.147
3-1/2	2,500	2,850	2,900	33,000	0.103
4	2,500	2,850	2,900	41,000	0.083
4-1/2	2,500	2,850	2,900	48,000	0.057
5-1/2	2,500	2,850	2,900	57,500	0.047
6-5/8	2,500	2,850	2,900	75,000	0.030
7-5/8	2,500	2,850	2,900	90,000	0.023
9-5/8	2,500	2,850	2,900	146,500	0.015
10-3/4	2,500	2,850	2,900	169,000	0.012

Where: P = Tensile Load (1,000 lbs)
L = String Length (1,000 ft)

MECHANICAL AND PHYSICAL PROPERTIES

TUBING/CASING BODY PROPERTIES	UNIT	VALUE 2-3/8 - 10-3/4	VALUE 11-3/4 - 16	TEST METHOD
Tensile Strength, Hoop	psi	31,300	31,300	ASTM D1599
Tensile Strength, Axial	psi	30,000	20,000	ASTM D2105
Modulus of Elasticity, Axial	10E+06 psi	3.0	2.0	ASTM D2105
Long Term Hydrostatic Strength at 20 Years	psi	16,875	19,109	ASTM D2992 (B)
Specific Gravity	—	1.9	1.9	ASTM D792
Density	lbs/in^3	0.07	0.07	ASTM D792
Thermal Conductivity	$Btu/hr/ft^2/in/degF$	2.4	2.4	ASTM C177
Thermal Expansion Coefficient (Linear)	10E-05in/in/degF	1.1	1.2	ASTM D696
Flow Factor	—	150	150	Hazen Williams

RED BOX® CASING AND TUBING SYSTEM **YELLOW BOX® LINE PIPE SYSTEM**

Email: tubularfiberglass@houston.rr.com • website: www.tubularfiberglass.com

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: March 17, 2005 Number of Copies: 8

Submittal Number: 02633-012A

Specification Section Number M02633-012A

Item Submitted: Injection Tubing 14.5" FRP

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Rick Chenault

Transmittal Date: March 17, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

FUTURE PIPE INDUSTRIES, INC.
(TUBULAR FIBERGLASS CORPORATION)
11811 Proctor Road • Houston, Texas 77038
Phone: (281) 847-2987 • Fax: (281) 847-1931

ISO 9001

16.5

September 2003

02633-012A
3/17/05

RED BOX 1250

FIBERGLASS TUBING, CASING, AND LINERS
AROMATIC AMINE CURED EPOXY RESIN

DIMENSIONAL SPECIFICATIONS

Nominal Size (inches)	Nominal I.D. (inches)	Minimum Drift Dia (inches)	Nominal O.D. (inches)	Nominal Wall (inches)	Pin Upset O.D. (inches)	Max Box OD* (inches)	Nominal Weight (lbs/ft)	Nominal Weight (lbs/ft)	Connection Type API 5B, Table 14*, 7**, 6*** Fourteenth Edition August 96
2-3/8	2.00	1.91	2.21	0.10	2.69	3.47	0.7	21	2-3/8" 8Rd EUE Long*IJ
2-7/8	2.47	2.37	2.73	0.13	3.19	3.97	1.0	31	2-7/8" 8Rd EUE Long*IJ
3-1/2	3.00	2.90	3.30	0.15	3.85	4.49	1.5	44	3-1/2" 8Rd EUE Long*IJ
4	3.33	3.24	3.68	0.17	4.35	5.18	2.0	61	4" 8Rd EUE Long TC
4-1/2	3.98	3.89	4.38	0.20	4.85	5.43	2.4	73	4-1/2" 8Rd EUE Long*IJ
5-1/2	4.42	4.33	4.87	0.23	5.60	6.72	3.2	97	5-1/2" 8Rd Csg Long**IJ
6-5/8	5.43	5.33	5.97	0.27	6.73	8.00	4.8	145	6-5/8" 8Rd Csg Long**IJ
7	6.21	6.11	6.83	0.31	7.10	8.40	5.8	173	7" 8Rd Csg Long**IJ
7-5/8	6.21	6.11	6.83	0.31	7.73	9.37	6.4	192	7-5/8" 8Rd Csg Long**IJ
9-5/8	7.84	7.75	8.63	0.40	9.73	11.84	10.3	309	9-5/8" 8Rd Csg*** IJ
10-3/4	8.85	8.76	9.76	0.45	10.85	13.14	13.1	394	10-3/4" 8Rd Csg***IJ
11-3/4	10.72	10.62	11.70	0.49	11.85	14.00	16.0	480	11-3/4" 8/6Rd Csg***TC
13-3/8	11.98	11.89	13.21	0.61	13.48	15.35	22.1	664	13-3/8" 8/6Rd Csg***TC
16	14.48	14.39	15.80	0.66	16.20	18.55	29.9	897	16" 6Rd Csg TC

*Depending on the application, smaller maximum box diameters are available.

Thread lengths on larger sizes exceed API L4

PERFORMANCE AND RATINGS (-60 deg F to +210 deg F)

30 ft Standard Joint Length

Nominal Size	Internal Pressure Rating (psi)	Mill Test Pressure (psi)	Collapse Rating (psi)	Axial Tension Rating (lbs)	Stretch vs Tension-Over-Pipe-Wt Stretch (ft) = Coeff. x P x L
2-3/8	1,250	1,570	640	10,500	0.467
2-7/8	1,250	1,570	670	16,000	0.295
3-1/2	1,250	1,570	600	22,500	0.221
4	1,250	1,570	640	29,000	0.169
4-1/2	1,250	1,570	580	39,500	0.129
5-1/2	1,250	1,570	600	49,500	0.101
6-5/8	1,250	1,570	590	74,000	0.069
7	1,250	1,570	590	79,500	0.052
7-5/8	1,250	1,570	590	90,000	0.052
9-5/8	1,250	1,570	580	146,500	0.033
10-3/4	1,250	1,570	600	169,000	0.025
11-3/4	1,250	1,570	450	149,000	0.029
13-3/8	1,390	1,740	600	183,000	0.021
16	1,250	1,570	450	248,000	0.016

Where: P = Tensile Load (1,000 lbs)
L = String Length (1,000 ft)

MECHANICAL AND PHYSICAL PROPERTIES

TUBING/CASING BODY PROPERTIES	UNIT	VALUE 2-3/8 - 10-3/4	VALUE 11-3/4 - 16	TEST METHOD
Tensile Strength, Hoop	psi	31,300	31,300	ASTM D1599
Tensile Strength, Axial	psi	30,000	20,000	ASTM D2105
Modulus of Elasticity, Axial	10E+06 psi	3.0	2.0	ASTM D2105
Long Term Hydrostatic Strength at 20 Years	psi	16,875	19,109	ASTM D2992 (B)
Specific Gravity	—	1.9	1.9	ASTM D792
Density	lbs/in^3	0.07	0.07	ASTM D792
Thermal Conductivity	$Btu/hr/ft^2/in/degF$	2.4	2.4	ASTM C177
Thermal Expansion Coefficient (Linear)	10E-05in/in/degF	1.1	1.2	ASTM D696
Flow Factor	—	150	150	Hazen Williams

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 8, 2005 Number of Copies: 8

Submittal Number: 02633-015-A

Specification Section Number 02633-015-A

Item Submitted: 16" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: February 8, 2005

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By:

Firm:

Date:

MWH			
NO EXCEPTIONS TAKEN	✓	AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	
REVIEWED BY:		DATE: 2/11/05	
RECOMMENDED BY: MChen		DATE: 2/23/05	

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS: FABRICATION PROCESSES AND TECHNIQUES. COORDINATING WORK WITH OTHER TRADES: AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

계약서번호 SH980317JK
L/C No. : 13047NJ
발급일자
ISSUED DATE : 2004. 09. 23
제품명
COMMODITY : E.R.W. STEEL PIPE
제 품 규 격
SPECIFICATION : API 5L X42 PSL1/API 5LB /ASTM A53B/ASME SA 53B

INSPECTION CERTIFICATE

HUSTEEL CO., LTD.

(SHINHO STEEL CO., LTD.)

HEAD OFFICE : Shinan B/D 15F, 943-19, Daechi-dong Kangnam-ku, SEOUL 135-845, KOREA
INCHUN PLANT: 468, HAGIK-DONG, NAM-KU, INCHON, KOREA
DAEBUL PLANT: 11 BLOCK, DAEBUL NATIONAL INDUSTRIAL COMPLEX, NABUL-RI, SAMHO-MYEON, YOUNGAM-KUN, CHULLANAM-DO, KOREA

증명서번호
CERTIFICATE No. : D040923 - 157
제 조 번 호
MANUFACTURED No.: 04-07-210
주 문 자
SUPPLIER :
수 요 가
CUSTOMER :

ITEM NO.	HEAT NO. (LOT)	관종 TYPE ①	수량 QUANTITY (PIECES)	호칭경 NOMINAL SIZE (in)	주문치수 ORDER SIZE 바깥지름 O.D. (mm) ②	두께 W.T. (in) ③	길이 LENGTH (ft)	중량 WEIGHT (lb/ft)	인장시험 TENSILE TEST 인장강도 TENSILE STRENGTH (psi)	항복강도 YIELD STRENGTH (psi)	연신율 ELONGATION (%)	화학성분 CHEMICAL COMPOSITION(%) C 2	Si 3	Mn 2	P 3	S 3	Cu 2 ④	Cr 2	Ni 3	Mo 3	V
1	B24457	BPEB	12	14	355.6	0.375	42'	54.62	71646	54242	38	13	20	84	12	7	2	2	3	TR	1
2	B27030	BPEB	23	14	355.6	0.375	42'	54.62	73821	55112	37	14	20	86	15	8	2	3	2	TR	1
3	B26640	BPEB	18	14	355.6	0.375	42'	54.62	72661	54822	38	13	10	82	15	6	2	3	2	1	1
4	B24416	BPEB	50	14	355.6	0.438	42'	63.50	68165	53662	39	13	10	85	12	8	2	3	2	1	TR
5	B26652	BPEB	34	14	355.6	0.500	42'	72.16	70195	52791	36	13	10	84	11	7	2	3	2	1	1
6	Y96043	BPEB	113	16	406.4	0.250	42'	42.09	69905	48876	36	17	12	77	11	8	2	3	2	1	1
7	Y96362	BPEB	7	16	406.4	0.375	42'	62.64	72661	52936	38	18	11	75	12	9	3	2	2	TR	TR
8	B26644	BPEB	54	16	406.4	0.375	42'	62.64	73966	56562	37	14	10	84	15	7	2	3	2	1	TR
9	B24454	BPEB	22	16	406.4	0.500	42'	82.85	68745	50761	39	13	11	85	12	9	2	2	3	1	1
10	A00424	BPEB	29	16	406.4	0.500	42'	82.85	71065	53952	39	14	10	81	14	9	3	2	2	TR	1

ITEM NO.	수압시험 HYDROSTATIC TEST TP (PSI) ⑤	RESULT	열처리온도 HEAT TREATMENT (℃)	비파괴시험 NDT (U.T) ⑥	경도시험 HARDNESS TEST (HrB)	외주장 CIRCUMFERENCE (mm) END	BODY	용접부인장강도 TENSILE STRENGTH OF WELDS (psi)	아연도금시험 ZINC COATING TEST WZC (g/㎡) ⑦	CST (TIMES)	VISUAL & DIMENSION	FLATTENING (BEND) TEST	WDT	RGT	FRT	CRT	RFT	S.T (%) ⑧	충격시험 IMPACT TEST ENERGY (J) (0)℃	SHEAR AREA (%)	잔류자기 Res. Mag. Gauss	비고 REMARKS
1	1910	GOOD	920	ACCEPT				75706			ACCEPT	GOOD	GOOD	GOOD				0.1				
2	1910	GOOD	920	ACCEPT				77882			ACCEPT	GOOD	GOOD	GOOD				0.1				
3	1910	GOOD	920	ACCEPT				76722			ACCEPT	GOOD	GOOD	GOOD				0.1				
4	2230	GOOD	930	ACCEPT				72226			ACCEPT	GOOD	GOOD	GOOD				0.1				
5	2550	GOOD	950	ACCEPT				74256			ACCEPT	GOOD	GOOD	GOOD				0.1				
6	1120	GOOD	920	ACCEPT				73966			ACCEPT	GOOD	GOOD	GOOD				0.1				
7	1670	GOOD	920	ACCEPT				76722			ACCEPT	GOOD	GOOD	GOOD				0.1				
8	1670	GOOD	920	ACCEPT				78027			ACCEPT	GOOD	GOOD	GOOD				0.1				
9	2230	GOOD	950	ACCEPT				72806			ACCEPT	GOOD	GOOD	GOOD				0.1				
10	2230	GOOD	950	ACCEPT				75126			ACCEPT	GOOD	GOOD	GOOD				0.1				

NOTE ①TYPE BPE BLACK PLAIN ENDS BPEB BPE BEVELLED BTE BLACK THREADED ENDS BTC BLACK THREADED & COUPLED GPE GALVANIZED PLAIN ENDS GTE GALVANIZED THREADED ENDS GTC GALVANIZED THREAD & COUPLED
②O.D. OUTSIDE DIAMETER ③W.T. WALL THICKNESS ④CHEMICAL COMPOSITION CHECK ANALYSIS 2:×100 3:×1000 TR TRACE ⑤TP TESTING PRESSURE ⑥NDT NONDESTRUCTIVE TEST
E.T EDDY CURRENT TEST U.T ULTRASONIC TEST ⑦WZC WEIGHT OF ZINC COATING CST COPPER SULPHATE TEST ⑧WDT WELD DUCTILITY TEST RGT RING GAGE TEST FRT FRANGE TEST ⑨ RES.MAG. : RESIDUAL MAGNETISM
CRT CRUSH TEST RFT REVERSE FLATTENING TEST S.T STRAIGHTNESS

SIGNATURE

SURVEYOR TO:

본 제품은 관련 규격이 정한 시험 및 검사에 합격하였음을 증명합니다.
WE HEREBY CERTIFY THAT THE PRODUCTS HEREIN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SIGNATURE
MANAGER OF QUALITY ASSURANCE TEAM

HMS C-30-05-(21)

INSPECTION CERTIFICATE

HUSTEEL CO., LTD.

(SHINHO STEEL CO., LTD.)

HEAD OFFICE : Shinan B/D 15F, 943-19, Daechi-dong
Kangnam-ku, SEOUL 135-845, KOREA
INCHUN PLANT: 468,HAGIK-DONG,NAM-KU, INCHON,KOREA
DAESUL PLANT: 11 BLOCK,DAESUL NATIONAL INDUSTRIAL COMPLEX,
NABUL-RI, SAMHO-MYEON,YOUNGAM-KUN,CHULLANAM-DO,KOREA

계약서번호 L/C No. : SH980317JK 13045NJ
발 급 일 자 ISSUED DATE : 2004. 09. 23
제 품 명 COMMODITY : E.R.W. STEEL PIPE
제 품 규 격 SPECIFICATION : API 5L X42 PSL1/API 5LB /ASTM A53B/ASME SA 53B

증명서번호 CERTIFICATE No. : D040923 - 156
제 조 번 호 MANUFACTURED No. : 04-08-202
주 문 자 SUPPLIER :
수 요 가 CUSTOMER :

ITEM NO.	HEAT NO. (LOT)	관종 TYPE ①	수량 QUANTITY (PIECES)	호칭경 NOMINAL SIZE (in)	주문치수 ORDER SIZE 바깥지름 O.D. (㎜) ②	두께 W.T. (in) ③	길이 LENGTH (ft)	중량 WEIGHT (lb/ft)	인장시험 TENSILE TEST 인장강도 TENSILE STRENGTH (psi)	항복강도 YIELD STRENGTH (psi)	연신율 ELONG-ATION (%)	화학성분 CHEMICAL COMPOSITION(%) C ②	Si ②	Mn ②	P ②	S ②	Cu ② ④	Cr ② ④	Ni ② ④	Mo ② ④	V ② ④
1	B24457	BPEB	41	14	355.6	0.375	42'	54.62	71646	54242	38	13	20	84	12	7	2	2	3	TR	1
2	B27030	BPEB	44	14	355.6	0.375	42'	54.62	73821	55112	37	14	20	86	15	8	2	3	2	TR	1
3	B26640	BPEB	4	14	355.6	0.375	42'	54.62	72661	54822	38	13	10	82	15	6	2	3	2	1	1
4	B26652	BPEB	67	14	355.6	0.500	42'	72.16	70195	52791	36	13	10	84	11	7	2	3	2	1	1
5	Y96362	BPEB	7	16	406.4	0.375	42'	62.64	72661	52936	38	18	11	75	12	9	3	2	2	TR	TR
6	B26644	BPEB	11	16	406.4	0.375	42'	62.64	73966	56562	37	14	10	84	15	7	2	3	2	1	TR
7	B24454	BPEB	48	16	406.4	0.500	42'	82.85	68745	50761	39	13	11	85	12	9	2	2	3	1	1
8	A00424	BPEB	57	16	406.4	0.500	42'	82.85	71065	53952	39	14	10	81	14	9	3	2	2	TR	1
9	A00421	BPEB	12	16	406.4	0.500	42'	82.85	72806	54097	37	13	12	90	13	8	2	3	2	1	TR
10	A00427	BPEB	14	16	406.4	0.500	42'	82.85	73241	52211	39	13	20	86	14	8	3	2	2	TR	1

ITEM NO.	수압시험 HYDROSTATIC TEST TP (PSI) ⑤	RE-SULT	열처리온도 HEAT TREATMENT (℃)	비파괴시험 NDT (U.T) ⑥	경도시험 HARDNESS TEST (HrB)	외주장 CIRCUMFERENCE(㎜) END	BODY	용접부인장강도 TENSILE STRENGTH OF WELDS (psi)	아연도금시험 ZING COATING TEST WZC (g/㎡) ⑦	CST (TIMES)	VISUAL & DIMEN-SION	FLATT-ENING (BEND) TEST	WDT ⑧	RGT ⑧	FRT ⑧	CRT ⑧	RFT ⑧	S.T (%)	충격시험 IMPACT TEST ENE-RGY (J) (0)℃	SHEAR AREA (%)	잔류자기 Res. Mag. Gauss	비고 REMARKS
1	1910	GOOD	920	ACCEPT				75706			ACCEPT	GOOD	GOOD	GOOD				0.1				
2	1910	GOOD	920	ACCEPT				77882			ACCEPT	GOOD	GOOD	GOOD				0.1				
3	1910	GOOD	920	ACCEPT				76722			ACCEPT	GOOD	GOOD	GOOD				0.1				
4	2550	GOOD	950	ACCEPT				74256			ACCEPT	GOOD	GOOD	GOOD				0.1				
5	1670	GOOD	920	ACCEPT				76722			ACCEPT	GOOD	GOOD	GOOD				0.1				
6	1670	GOOD	920	ACCEPT				78027			ACCEPT	GOOD	GOOD	GOOD				0.1				
7	2230	GOOD	950	ACCEPT				72606			ACCEPT	GOOD	GOOD	GOOD				0.1				
8	2230	GOOD	950	ACCEPT				75126			ACCEPT	GOOD	GOOD	GOOD				0.1				
9	2230	GOOD	950	ACCEPT				76867			ACCEPT	GOOD	GOOD	GOOD				0.1				
10	2230	GOOD	950	ACCEPT				77302			ACCEPT	GOOD	GOOD	GOOD				0.1				

NOTE
①TYPE BPE BLACK PLAIN ENDS BPEB BPE BEVELLED BTE BLACK THREADED ENDS BTC BLACK THREADED & COUPLED GPE GALVANIZED PLAIN ENDS GTE GALVANIZED THREADED ENDS GTC GALVANIZED THREAD & COUPLED
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MANAGER OF QUALITY ASSURANCE TEAM

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INCHUN PLANT: 466,HAGIK-DONG,NAM-KU,INCHON,KOREA
DAEBUL PLANT: 11 BLOCK,DAEBUL NATIONAL INDUSTRIAL COMPLEX, NABUL-RI, SAMHO-MYEON,YOUNGAM-KUN,CHULLANAM-DO,KOREA

계약서번호 SH980317JK
L/C No. : 13045NJ
발 급 일 자
ISSUED DATE : 2004. 09. 23
제 품 명
COMMODITY : E.R.W. STEEL PIPE
제 품 규 격
SPECIFICATION : API 5L X42 PSL1/API 5LB /ASTM A53B/ASME SA 53B

증명서번호
CERTIFICATE No. : D040923 - 156
제조번호
MANUFACTURED No. : 04-08-202
주 문 자
SUPPLIER :
수 요 가
CUSTOMER :

ITEM NO.	HEAT NO. (LOT)	관종 TYPE ①	수 량 QUANTITY (PIECES)	호칭경 NOMINAL SIZE (in)	주문치수 ORDER SIZE 바깥지름 O.D. (㎜) ②	두께 W.T. (in) ③	길이 LENGTH (ft)	중 량 WEIGHT (lb/ft)	인장시험 TENSILE TEST 인장강도 TENSILE STRENGTH (psi)	항복강도 YIELD STRENGTH (psi)	연신율 ELONG-ATION (%)	화학성분 CHEMICAL COMPOSITION(%) C 2	Si 3	Mn 2	P 3	S 3	Cu 2	Cr 2	Ni 3	Mo 3	V
1	B24457	BPEB	41	14	355.6	0.375	42'	54.62	71648	54242	38	13	20	84	12	7	2	2	3	TR	1
2	B27030	BPEB	44	14	355.6	0.375	42'	54.62	73821	55112	37	14	20	86	15	8	2	3	2	TR	1
3	B26640	BPEB	4	14	355.6	0.375	42'	54.62	72661	54822	38	13	10	82	15	6	2	3	2	1	1
4	B26652	BPEB	67	14	355.6	0.500	42'	72.16	70195	52791	36	13	10	84	11	7	2	3	2	1	1
5	Y96362	BPEB	7	16	406.4	0.375	42'	62.64	72661	52936	38	18	11	75	12	9	3	2	2	TR	TR
6	B26644	BPEB	11	16	406.4	0.375	42'	62.64	73968	56562	37	14	10	84	15	7	2	3	2	1	TR
7	B24454	BPEB	48	16	406.4	0.500	42'	82.85	68745	50761	39	13	11	85	12	9	2	2	3	1	1
8	A00424	BPEB	57	16	406.4	0.500	42'	82.85	71065	53952	39	14	10	81	14	9	3	2	2	TR	1
9	A00421	BPEB	12	16	406.4	0.500	42'	82.85	72806	54097	37	13	12	90	13	8	2	3	2	1	TR
10	A00427	BPEB	14	16	406.4	0.500	42'	82.85	73241	52211	39	13	20	86	14	8	3	2	2	TR	1

ITEM NO.	수압시험 HYDROSTATIC TEST TP (PSI) ⑤	RE-SULT	열처리온도 HEAT TREATMENT (℃)	비파괴시험 NDT (U.T) ⑥	경도시험 HARDNESS TEST (HrB)	외주장 CIRCUMFERENCE(㎜) END	BODY	용접부인장강도 TENSILE STRENGTH OF WELDS (psi)	아연도금시험 ZINC COATING TEST WZC (g/㎡) ⑦	CST (TIMES)	VISUAL & DIMEN-SION	FLATT-ENING (BEND) TEST	WDT	RGT	FRT	CRT	RFT	S.T (%)	충격시험 IMPACT TEST ENE-RGY (J) (0)℃	SHEAR AREA (%)	잔류자기 Res. Mag. Gauss	비고 REMARKS
1	1910	GOOD	920	ACCEPT				75706			ACCEPT	GOOD	GOOD	GOOD				0.1				
2	1910	GOOD	920	ACCEPT				77882			ACCEPT	GOOD	GOOD	GOOD				0.1				
3	1910	GOOD	920	ACCEPT				76722			ACCEPT	GOOD	GOOD	GOOD				0.1				
4	2550	GOOD	950	ACCEPT				74256			ACCEPT	GOOD	GOOD	GOOD				0.1				
5	1670	GOOD	920	ACCEPT				76722			ACCEPT	GOOD	GOOD	GOOD				0.1				
6	1670	GOOD	920	ACCEPT				78027			ACCEPT	GOOD	GOOD	GOOD				0.1				
7	2230	GOOD	950	ACCEPT				72806			ACCEPT	GOOD	GOOD	GOOD				0.1				
8	2230	GOOD	950	ACCEPT				75126			ACCEPT	GOOD	GOOD	GOOD				0.1				
9	2230	GOOD	950	ACCEPT				76867			ACCEPT	GOOD	GOOD	GOOD				0.1				
10	2230	GOOD	950	ACCEPT				77302			ACCEPT	GOOD	GOOD	GOOD				0.1				

NOTE
①TYPE BPE BLACK PLAIN ENDS BPEB BPE BEVELLED BTE BLACK THREADED ENDS BTC BLACK THREADED & COUPLED GPE GALVANIZED PLAIN ENDS GTE GALVANIZED THREADED ENDS GTC GALVANIZED THREADED & COUPLED
②O.D. OUTSIDE DIAMETER ③W.T. WALL THICKNESS ④CHEMICAL COMPOSITION CHECK ANALYSIS 2:×100 3:×1000 TR TRACE ⑤TP TESTING PRESSURE ⑥NDT NONDESTRUCTIVE TEST
E.T EDDY CURRENT TEST U.T ULTRASONIC TEST ⑦WZC WEIGHT OF ZINC COATING CST COPPER SULFATE TEST ⑧WDT WELD DUCTILITY TEST RGT RING GAGE TEST FRT FLANGE TEST ⑨ RES.MAG. : RESIDUAL MAGNETISM
CRT CRUSH TEST RFT REVERSE FLATTENING TEST S.T STRAIGHTNESS

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SIGNATURE
MANAGER OF QUALITY ASSURANCE TEAM

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 8, 2005 Number of Copies: 8

Submittal Number: 02633-011-A

Specification Section Number 02633-011-A

Item Submitted: 20" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: February 8, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

M W H

NO EXCEPTIONS TAKEN	AMEND-RESUBMIT
MAKE CORRECTIONS NOTED	REJECTED – RESUBMIT

REVIEWED BY: _____ DATE: 2/11/05

RECOMMENDED BY: _____ DATE: 2/23/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES, COORDINATING WITH OTHER TRADES AND SATISFACTORY PERFORMANCE OF WORK.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 900/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C / X42	823666	8	312,7 (95,34)	32593 (14788)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823666	0,17	1,04	0,21	0,014	0,008	0,07	0,08	0,18
	Mo 0,01	V 0,00	Al 0,036	Ti 0,003	Nb 0,0000	Ce 0,38		

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 02633-01-H
Transmittal No. # _____ Date: _____
Signature _____

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
823666/8370	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49893 (344)**	**76000 (524)**	**43,1**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		**dn. 02.04. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 898/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRŰFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimensions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Pièces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B/ X42	823560	1	38,9 (11,86)	4055 (1840)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-après.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823560	0,17	1,03	0,23	0,016	0,004	0,11	0,08	0,18
	Mo	**V**	**Al**	**Ti**	**Nb**	**Ce**		
	0,03	0,00	0,035	0,003	0,0000	0,39		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
823560/8358	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	50473 (348)	84412 (582)	39,4			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B.
Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z DZIAŁU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI	dn. 02.04. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 899/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Pièces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C / X42	823573 ✓	10	405,7 (123,61)	42286 (19173)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823573	**0,19**	**0,96**	**0,21**	**0,018**	**0,004**	**0,12**	**0,11**	**0,19**
	Mo **0,03**	**V** **0,00**	**Al** **0,028**	**Ti** **0,004**	**Nb** **0,0000**	**Ce** **0,40**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823573/8360	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	51198 (353)	80931 (558)	41,3			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est delivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 02.04. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1059/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/27193636 1/204/1078	422851 4/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Pièces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. i. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C / X-42	823859	9	355,2 (108,29)	37022 (16797)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

I. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823859	**0,17**	**0,94**	**0,22**	**0,016**	**0,004**	**0,10**	**0,09**	**0,17**
	Mo **0,02**	**V** **0,00**	**Al** **0,039**	**Ti** **0,003**	**Nb** **0,0000**	**Ce** **0,37**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823859/10103	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49313 (340)	74984 (517)	40,9			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	[illegible]	dn. 19.04. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1058/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполиение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C / X42	823845	5	193,1 (58,90)	20127 (9136)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été execute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** – ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823845	0,17	0,94	0,21	0,012	0,009	0,09	0,10	0,18
	Mo 0,03	V 0,00	Al 0,045	Ti 0,004	Nb 0,0000	Ce 0,37		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
823845/10093	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49603 (342)**	**74984 (517)**	**40,4**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI	**dn. 19.04. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 900/EXP/R/04/A1

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/27193636I/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spzifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполиение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ **20" x 0,500"** **(508 x 12,7 mm)** **36-44 ft** **(10,97 - 13,41 m)**	**B / C - X42**	**823666** ✓	**1**	**34,6** **(10,55)**	**3606** **(1636)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de ia été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 823666	**0,17**	**1,04**	**0,21**	**0,014**	**0,008**	**0,07**	**0,08**	**0,18**
	Mo **0,01**	**V** **0,00**	**Al** **0,036**	**Ti** **0,003**	**Nb** **0,0000**	**Ce** **0,38**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re psi (MPa)**	**Rm psi (MPa)**	**A 2" %**	**Z %**	**U**	**Twardość** Dureté Hardness Härte Твердость
823666/8370	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49893 (344)**	**76000 (524)**	**43,1**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI I TECHNOLOGII	**dn. 16.04. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1312/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Pièces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	823992	9	346,7 (105,66)	36137 (16389)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été execute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823992	0,17	1,02	0,22	0,013	0,008	0,06	0,13	0,20
	Mo	V	Al	Ti	Nb	Ce		
	0,03	0,00	0,031	0,004	0,0000	0,38		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823992/12887	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49893 (344)**	**77305 (533)**	**39,8**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU № 1316/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	824007	4	157,0 (47,82)	16364 (7417)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
824007	**0,17**	**1,00**	**0,27**	**0,014**	**0,006**	**0,09**	**0,15**	**0,23**
	Mo **0,02**	**V** **0,00**	**Al** **0,033**	**Ti** **0,003**	**Nb** **0,0000**	**Ce** **0,38**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Durete Hardness Härte Твердость
824007/12906	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**50908 (351)**	**78175 (539)**	**46,5**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634 B

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU № 1323/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagen No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполиение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	824253 ✓	9	344,5 (105,00)	35907 (16287)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 824253	0,18	0,91	0,28	0,012	0,007	0,20	0,19	0,20
	Mo 0,05	V 0,00	Al 0,041	Ti 0,004	Nb 0,0000	Ce 0,41		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re psi (MPa)**	**Rm psi (MPa)**	**A 2"** **%**	**Z** **%**	**U**	**Twardość** Dureté Hardness Härte Твердость
824253/12965	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49313 (340)**	**81946 (565)**	**38,8**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B.
Size in inches. Heat number.

B

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		**dn. 18.05. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1320/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/27193636 1/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Besteilung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	824231 ✓	10	391,7 (119,38)	40827 (18517)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
824231	0,18	0,97	0,20	0,013	0,010	0,14	0,11	0,17
	Mo 0,05	V 0,00	Al 0,034	Ti 0,003	Nb 0,0000	Ce 0,40		

2. BADANIA MECHANICZNE - ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824231/12935	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49023 (332)	77160 (532)	36,0			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont été controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B.
Size in inches. Heat number.

KJ 21/634 B

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1322/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C - 42	824241 ✓	10	406,5 (123,98)	42369 (19231)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 824241	0,18	1,00	0,25	0,016	0,007	0,07	0,09	0,20
	Mo 0,03	V 0,00	Al 0,037	Ti 0,003	Nb 0,0000	Ce 0,39		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re psi (MPa)**	**Rm psi (MPa)**	**A 2" %**	**Z %**	**U**	**Twardość** Dureté Hardness Härte Твердость
824241/12955	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**51488 (355)**	**80351 (554)**	**33,7**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI TECHNOLOGII inż. HENRYK KONDERKO	**dn. 18.05. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1318/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający **STALEXPORT S.A.**
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagen No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ **20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)**	**B / C / X42**	**824191** ✓	**10**	**406,2 (123,77)**	**42338 (19198)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
824191 ✓	**0,17**	**1,05**	**0,24**	**0,016**	**0,004**	**0,12**	**0,09**	**0,25**
	Mo 0,03	**V 0,00**	**Al 0,038**	**Ti 0,003**	**Nb 0,0000**	**Ce 0,40**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824191/12915	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	51053 (352)	79626 (542)	40,4			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	inż. [illegible]	dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1319/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Besteilung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X 2	824211 ✓	10	404,7 (123,31)	42182 (19127)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 824211	0,17	1,03	0,25	0,014	0,003	0,06	0,06	0,17
	Mo 0,01	V 0,00	Al 0,037	Ti 0,003	Nb 0,0000	Ce 0,37		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824211/12925	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49023 (338)	78320 (540)	46,1			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI TECHNOLOGII inż. [illegible]	dn. 18.05. 2004 r.

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 9, 2005 Number of Copies: 8

Submittal Number: 02633-011-B

Specification Section Number 02633-011-B

Item Submitted: Additional 20" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: February 9, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

MWH

NO EXCEPTIONS TAKEN	✓	AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	

REVIEWED BY: _____ DATE: 2/11/05

RECOMMENDED BY: _____ DATE: 2/23/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES; COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

Huta „BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 114/EXP/R/03

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagon No Car No Wagon No No вагона
PL/271936361/203/1156	4248504/03		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimensions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	**20" x 0,500" (508 x 12,7 mm) 36 - 44 ft (10,97 - 13,41 m)**	**B / C / X42**	**822683**	**2**	**81,5 (24,83)**	**8495 (3851)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

I. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
822683	**0,18**	**1,06**	**0,23**	**0,013**	**0,005**	**0,09**	**0,07**	**0,18**
	Mo	**V**	**Al**	**Ti**	**Nb**	**Ce**		
	0,04	**0,00**	**0,029**	**0,003**	**0,0000**	**0,40**		

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 02633-011-B
Transmittal No. # ________ Date: 2/9/05
Signature

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No Nр плавки или пробы	Stan obróbki Termicznej Traitament thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
822683/992	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	50473 (348)	75855 (523)	42,5			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont été controlés et 100% - Surface and dimensions tested at 100%
Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	inż. [illegible]	dn. 27.01. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 115/EXP/R/03

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/27193636I/203/1156	4248504/03		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36 - 44 ft (10,97 - 13,41 m)	B / C / X42	822687	1	41,8 (12,74)	4357 (1976)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécuté par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
822687	0,18	0,95	0,26	0,015	0,005	0,07	0,09	0,18
	Mo 0,03	V 0,00	Al 0,034	Ti 0,003	Nb 0,0000	Ce 0,38		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouverte Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
822687/994	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49893 (344)	79481 (548)	42,3			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte contrôlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZAKŁADU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK ... KONTROLI ... JAKOŚCI ... OLOGII Inż. ...	dn. 22.01. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU № 116/EXP/R/03

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung № и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No № наряда	Nr awizu Avis No Advice No Versandanzeige No № извещения	Nr wagonu Wagen No Car No Wagon No № вагона
PL/271936361/203/1156	4248504/03		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions, ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавки	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36 - 44 ft (10,97 - 13,41 m)	B / C / X4	822799	7	292,2 (89,04)	30456 (13811)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

I. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE - CHEMICAL COMPOSITION - CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
822799	0,18	0,94	0,25	0,016	0,003	0,14	0,12	0,19
	Mo 0,04	V 0,00	Al 0,035	Ti 0,003	Nb 0,0000	Ce 0,39		

2. BADANIA MECHANICZNE - ESSAIS MECANIQUES - MECHANICAL TESTS - MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Durete Hardness Härte Твердость
822799/996	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	50183 (346)	77160 (532)	41,3			

2. BADANIA TECHNOLOGICZNE - ESSAIS TECHNOLOGIQUES - TECHNOLOGICAL TESTS - TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE - ESSAIS METALLOGRAPHIQUES - METALLOGRAPHIC TESTS - METALLOGRAPHISCHE UNTERSUCHUNGEN - МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA - AUTRES ESSAIS - OTHER TESTS - ANDERE UNTERSUCHUNGEN - ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE - ADDITIONAL REMARKS - AUTRESOBSERVATIONS - ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100%
Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono - Le materiel est marqué - Material marked - Das Material wurde bezeichnet - Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono - Sur la base des essais si-dessus le materiel est délivré
According to the carried out tests the material released - Untersuchungen wurde das Material freigegeben - На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKR. KONTROLI JAKOŚCI HALINA REHMET	[illegible]	dn. 22.01. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 901/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/hr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C-X42	823629	3	125,3 (38,19)	13060 (5924)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823629	0,18 Mo 0,02	0,96 V 0,00	0,27 Al 0,037	0,017 Ti 0,004	0,005 Nb 0,0000	0,08 Ce 0,37	0,07	0,15

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823629/8380	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	48007 (331)	76870 (530)	35,8			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont ète controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le materiał est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZZ. KONTROLI JAKOŚCI HALINA REHMET		dn. 02.04. 2004 r.

Submittal Data
FROM
Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: March 4, 2005 Number of Copies: 8

Submittal Number: 02633-011-C

Specification Section Number 02633-011-C

Item Submitted: ADDITIONAL 20" MILL CERTS

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Marybeth Rios

Transmittal Date: March 4, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

MWH			
NO EXCEPTIONS TAKEN		AMEND-RESUBMIT	✓
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	
REVIEWED BY:		DATE: 3/10/05	
RECOMMENDED BY:		DATE: 3/10/05	

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES; COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1312/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	823992 ✓	9	346,7 (105,66)	36137 (16389)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 823992	0,17	1,02	0,22	0,013	0,008	0,06	0,13	0,20
	Mo 0,03	V 0,00	Al 0,031	Ti 0,004	Nb 0,0000	Ce 0,38		

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 22633-011-C
Transmittal No. # _____ Date: 3/4/05
Signature

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823992/12887	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	49893 (344)	77305 (533)	39,8			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1323/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spzifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполиение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B.I.C / X42	824253 ✓	9	344,5 (105,00)	35907 (16287)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
824253	0,18	0,91	0,28	0,012	0,007	0,20	0,19	0,20
	Mo 0,05	V 0,00	Al 0,041	Ti 0,004	Nb 0,0000	Ce 0,41		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re psi (MPa)**	**Rm psi (MPa)**	**A 2" %**	**Z %**	**U**	**Twardość** Dureté Hardness Härte Твердость
824253/12965	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49313 (340)	81946 (565)	38,8			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B/.
Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK ... KONTROLI JAKOŚCI ...	dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1320/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagen No No вагона
PL/27193636I/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ **20" x 0,500"** **(508 x 12,7 mm)** **33 - 44 ft** **(10,06 - 13,41 m)**	**B / C / X42**	**824231** ✓	**10**	**391,7** **(119,38)**	**40827** **(18517)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été executé par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
✓ **824231**	**0,18**	**0,97**	**0,20**	**0,013**	**0,010**	**0,14**	**0,11**	**0,17**
	Mo **0,05**	**V** **0,00**	**Al** **0,034**	**Ti** **0,003**	**Nb** **0,0000**	**Ce** **0,40**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
824231/12935	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49023 (332)**	**77160 (532)**	**36,0**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B
Size in inches. Heat number.

KJ 21/634

B

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		**dn. 18.05. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU № 1322/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No. Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/27193636I/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech, Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ **20" x 0,500"** **(508 x 12,7 mm)** **33 - 44 ft** **(10,06 - 13,41 m)**	**B / C 4242**	**824241** ✓	**10**	**406,5** **(123,98)**	**42369** **(19231)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
824241 ✓	**0,18**	**1,00**	**0,25**	**0,016**	**0,007**	**0,07**	**0,09**	**0,20**
	Mo **0,03**	**V** **0,00**	**Al** **0,037**	**Ti** **0,003**	**Nb** **0,0000**	**Ce** **0,39**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
824241/12955	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	51488 (355)	80351 (554)	33,7			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI TECHNOLOGII inż. HENRYK GONDERKO	dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1318/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X4	824191 ✓	10	406,2 (123,77)	42338 (19198)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 824191	0,17	1,05	0,24	0,016	0,004	0,12	0,09	0,25
	Mo 0,03	V 0,00	Al 0,038	Ti 0,003	Nb 0,0000	Ce 0,40		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824191/12915	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	51053 (352)	79626 (542)	40,4			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100%
Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré
According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU № 1317/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający Le client-Ordered by-Besteller-Заказчик: **STALEXPORT S.A.**

Adres wysyłkowy Adresse-Address-Versandadreesse-Адрес получателя:

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spzrifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ **20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)**	**B / C / X42**	**824016**	**4**	**164,0 (49,99)**	**17094 (7754)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
✓ **824016**	**0,16**	**1,01**	**0,24**	**0,015**	**0,005**	**0,18**	**0,13**	**0,24**
	Mo 0,04	**V 0,00**	**Al 0,033**	**Ti 0,003**	**Nb 0,0000**	**Ce 0,40**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re psi (MPa)**	**Rm psi (MPa)**	**A 2" %**	**Z %**	**U**	**Twardość** Dureté Hardness Härte Твердость
824016/12911	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	54824 (378)	81801 (564)	41,3			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI WYROBÓW inż. [illegible]	dn. 18.05. 2004 r.

Huta „BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1059/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and data No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spezifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz., mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполиение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B/C/X42	823859	9	355,2 (108,29)	37022 (16797)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
✓ 823859	0,17	0,94	0,22	0,016	0,004	0,10	0,09	0,17
	Mo	V	Al	Ti	Nb	Ce		
	0,02	0,00	0,039	0,003	0,0000	0,37		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No Nо плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re psi (MPa)**	**Rm psi (MPa)**	**A 2" %**	**Z %**	**U**	**Twardość** Dureté Hardness Härte Твердость
823859/10103	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49313 (340)**	**74984 (517)**	**40,9**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRES OBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеменованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	[illegible] KONTROLI [illegible] inż. [illegible]	dn. 19.04. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU № 1313/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Pièces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ **20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)**	**B / C / X42**	**823975**	**4**	**163,9 (49,97)**	**17083 (7751)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été executé par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
✓ 823975	**0,17**	**1,05**	**0,26**	**0,016**	**0,005**	**0,12**	**0,12**	**0,25**
	Mo **0,03**	**V** **0,00**	**Al** **0,034**	**Ti** **0,003**	**Nb** **0,0000**	**Ce** **0,40**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823975/12897	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49458 (341)**	**79046 (545)**	**37,8**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		**dn. 18.05. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1058/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Vagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C / X42	823845 ✓	5	193,1 (58,90)	20127 (9136)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823845 ✓	0,17	0,94	0,21	0,012	0,009	0,09	0,10	0,18
	Mo 0,03	V 0,00	Al 0,045	Ti 0,004	Nb 0,0000	Ce 0,37		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823845/10093	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E.	49603 (342)	74984 (517)	40.4			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results - time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberflache und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK OTDZIAŁU KONTROLI JAKOŚCI	dn. 19.04. 2004 r.

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: May 5, 2005 Number of Copies: 8

Submittal Number: 02633-011-D

Specification Section Number 02633-011-D

Item Submitted: Additional 20" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: May 5, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 898/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / X42	823560	1	38,9 (11,86)	4055 (1840)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** / ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823560	0,17	1,03	0,23	0,016	0,004	0,11	0,08	0,18
	Mo 0,03	V 0,00	Al 0,035	Ti 0,003	Nb 0,0000	Ce 0,39		

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 03033-0114
Transmittal No. # _____ Date: 5/3/05
Signature

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 116/EXP/R/03

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagen No No вагона
PL/271936361/203/1156	4248504/03		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung oder Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	✓ **20" x 0,500" (508 x 12,7 mm) 36 - 44 ft (10,97 - 13,41 m)**	**B / C / X42**	**822799** ✓	**7**	**292,2 (89,04)**	**30456 (13811)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
822799	**0,18**	**0,94**	**0,25**	**0,016**	**0,003**	**0,14**	**0,12**	**0,19**
	Mo 0,04	**V 0,00**	**Al 0,035**	**Ti 0,003**	**Nb 0,0000**	**Ce 0,39**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Durete Hardness Härte Твердость
822799/996	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	50183 (346)	77160 (532)	41,3			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B. Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKP. KONTROLI JAKOSCI HALINA REHMET		dn. 22.01. 2004 r.

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No Nq плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPà)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
823560/8358	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**50473 (348)**	**84412 (582)**	**39,4**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results . time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZAKŁADU KONTROLI JAKOŚCI HALINA PIECHMET		**dn. 02.04. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 901/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Vagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C / X42	823629	3	125,3 (38,19)	13060 (5924)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

I. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
823629	**0,18**	**0,96**	**0,27**	**0,017**	**0,005**	**0,08**	**0,07**	**0,15**
	Mo **0,02**	**V** **0,00**	**Al** **0,037**	**Ti** **0,004**	**Nb** **0,0000**	**Ce** **0,37**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823629/8380	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	48007 (331)	76870 (530)	35,8			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZA... KONTROLI JAKOŚCI HALINA REHMET		dn. 02.04. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 899/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1078	4228514/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Makke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled nds acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 36-44 ft (10,97 - 13,41 m)	B / C - X42	823573	10	405,7 (123,61)	42286 (19173)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823573	0,19	0,96	0,21	0,018	0,004	0,12	0,11	0,19
	Mo 0,03	V 0,00	Al 0,028	Ti 0,004	Nb 0,0000	Ce 0,40		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
823573/8360	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**51198 (353)**	**80931 (558)**	**41,3**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZAKRESU KONTROLI JAKOŚCI HALINA REJMET		**dn. 02.04. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1324/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestelluag-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41m)	B / C / X	824170	4	159,6 (48,67)	16635 (7549)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
824170	0,17	1,03	0,28	0,012	0,001	0,07	0,06	0,13
	Mo 0,02	V 0,00	Al 0,043	Ti 0,004	Nb 0,0000	Ce 0,37		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824170/12975	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49023 (338)	79916 (551)	40,0			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberflache und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

B

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1314/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagen No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	824063 ✓	4	165,4 (50,39)	17240 (7816)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
824063 ✓	0,17	1,05	0,27	0,014	0,005	0,08	0,12	0,20
	Mo 0,03	V 0,00	Al 0,34	Ti 0,004	Nb 0,0000	Ce 0,39		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824063/12901	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49748 (343)	79771 (550)	40,6			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI	dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1312/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/27193636 1/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Sozzifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Piéces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	823992	9	346,7 (105,66)	36137 (16389)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.

Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823992	0,17	1,02	0,22	0,013	0,008	0,06	0,13	0,20
	Mo 0,03	V 0,00	Al 0,031	Ti 0,004	Nb 0,0000	Ce 0,38		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or Tests No Abstich Oder Probe No No плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Durete Hardness Härte Твердость
823992/12887	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E**	**49893 (344)**	**77305 (533)**	**39,8**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		**dn. 18.05. 2004 r.**

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1323/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commando-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Piéces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	✓ 20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	824253 ✓	9	344,5 (105,00)	35907 (16287)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été éxécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. SKŁAD CHEMICZNY - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
824253 ✓	**0,18**	**0,91**	**0,28**	**0,012**	**0,007**	**0,20**	**0,19**	**0,20**
	Mo 0,05	**V** 0,00	**Al** 0,041	**Ti** 0,004	**Nb** 0,0000	**Ce** 0,41		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
824253/12965	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	49313 (340)	81946 (565)	38,8			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE - ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberflache und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B/
Size in inches. Heat number.

B

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contróle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 2229/EXP/R/03

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ

acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadreesse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	**Nr zlecenia** Ordre No Manuf. Order No Auftrag No No наряда	**Nr awizu** Avis No Advice No Versandanzeige No No извещения	**Nr wagonu** Wagen No Car No Wagon No No вагона
PL/271936361/203/1156	4248504/03		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	**Wymiar lub rysunek** Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	**Marka** Marque Steel type Marke Марка	**Wytop** Coulée Heat Abstich Плавка	**Sztuk** Pièces Pieces Stück Штук	**mb.** ft (c. mtr.) c. mtr. l. M. пог. м	**Kg** lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	**20" x 0,500" (508 x 12,7 mm) 36 - 44 ft (10,97 - 13,41 m)**	**B / C / X42**	**822272**	**3**	**117,6 (35,83)**	**12257 (5558)**

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécute par le Service de Controle. Les resultats des essais sont indiqués ci-aprés.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE - CHEMICAL COMPOSITION - CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	**C**	**Mn**	**Si**	**P**	**S**	**Cr**	**Ni**	**Cu**
822272	**0,18**	**0,95**	**0,23**	**0,017**	**0,006**	**0,10**	**0,08**	**0,18**
	Mo 0,02	**V 0,00**	**Al 0,043**	**Ti 0,003**	**Nb 0,0000**	**Ce 0,38**		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No No плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Durete Hardness Härte Твердость
822272/23233	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	47282 (326)	77160 (532)	37,2			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont éte controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вушеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	KIEROWNIK DZIAŁU KONTROLI JAKOŚCI	dn. 14.11. 2003 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 117/EXP/R/03

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Order No Auftrag No No заказа	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagon No No No No вагона
PL/271936361/203/1164	42/01/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spezifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung oder Zeichnung Размер чертеж	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) kr
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) [illegible] ft (10[illegible] m)	822799	3	120,9 (36,84)	12601 (5714)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la cté exécuté par le Service de Controle. Les resultats des essais sont indiqués ci-après.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
822799	0,18	0,94	0,25	0,016	0,003	0,14	0,12	0,19
control anal.	0,18	0,94	0,25	0,016	0,002	0,13	0,12	0,19
	Mo	V	Al	Ti	Nb	Ce		
	0,04	0,00	0,035	0,003	0,0000	0,39		
	0,03	0,00	0,032	0,003	0,0000	0,40		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ							
Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	**Stan obróbki Termicznej** Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	**Re** psi (MPa)	**Rm** psi (MPa)	**A 2"** %	**Z** %	**U**	**Twardość** Dureté Hardness Härte Твердость
822799/996	**Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transfers Type E**	**50183 (346)**	**77160 (532)**	**41.3**			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure [illegible] time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRES OBSERVATIONS – ANDERE BEMERUNGEN

" no weld repair "

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont été controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Material oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches. Heat number.

KJ
21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le materiel est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	**Dyrekcja Huty** Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET	... KONTROLI JAKOŚCI TECHNOLOGII inż. ... KONCERKO	dn. 22.01. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 118/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung № и число заказа	Nr zlecenia Ordre No Manufacturer No Auftrag No № наряда	Nr awizu Avis No Advice No Versandanzeige No № извещения	Nr wagonu Wagon No Car No Wagon No № вагона
PL/2719365[illegible]/203/[illegible]	[illegible]04/0[illegible]		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spezifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. Itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gagenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimensions or drawing Abmessung order Zeichnung Размер чертеж	Marka [illegible] Type [illegible]	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. 1. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends Acc .to API - 5L Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 3[illegible]-44 ft ([illegible]-13,41 m)	[illegible]2	822822	10	405,2 (123,53)	42234 (19161)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été execute par le service de Controle. Les resultats des essais sont indiqués ci-après.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prufung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеуказанного заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE - CHEMICAL COMPOSITION - CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
822822 control anal.	0,18 0,19	0,99 0,99	0,27 0,27	0,016 0,016	0,010 0,008	0,10 0,10	0,11 0,11	0,20 0,20
	Mo	**V**	**Al**	**Ti**	**Nb**	**Ce**		
	0,05 0,05	0,00 0,00	0,049 0,045	0,003 0,003	0,0000 0,0000	0,40 0,41		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN
МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No № плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
822822/1006	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transferse Type E	80473	78030	38.0			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positiv result

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 5890 psi (40MPa) during time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRES OBSERVATIONS – ANDERE BEMERUNGEN

" no weld repair "

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont été controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B .
Size in inches, Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób materiał zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеименованных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA ZAKŁADU KONTROLI JAKOŚCI HALINA REHMET		dn. 27.01. 2004 r.

Huta
„BATORY" S.A.
UL. Dyrekcyjna 6
41-506 Chorzów
POLAND

ŚWIADECTWO ODBIORU No 1312/EXP/R/04

CERTYFICAT DE RECEPTION INSPECTION CERTIFICATE
ABNAHMEPRÜFZEUGNIS СЕРТИФИКАТ
acc.to EN 10204/3.1.B
/nr normy/

Zamawiający STALEXPORT S.A.
Le client-Ordered by-Besteller-Заказчик

Adres wysyłkowy
Adresse-Address-Versandadresse-Адрес получателя

Nr i data zamówienia klienta No et date la commande Order No and date No und Datum der Bestellung No и число заказа	Nr zlecenia Ordre No Manuf. Order No Auftrag No No наряда	Nr awizu Avis No Advice No Versandanzeige No No извещения	Nr wagonu Wagen No Car No Wagon No No вагона
PL/271936361/204/1075	4228501/04		

Wyszczególnienie zamówienia:
Specyfication de la commande-Order Specification-Spizifikation der Bestellung-Спецификация заказа

Przedmiot i wykonanie (stan obr. Termicz.,mech. itp.) L'objet et l'execution (traitement thermique et l'usinage) Item and specification (Heat and mechanical treatment etc.) Gegenstand und Ausführung (therm und mechan. Bearbeitung usw.) Предмет и исполнение (состояние терм. и механобраб. и пр.)	Wymiar lub rysunek Dimensions ou dessin Dimesions or drawing Abmessung order Zeichnung Размер чертеж	Marka Marque Steel type Marke Марка	Wytop Coulée Heat Abstich Плавка	Sztuk Pièces Pieces Stück Штук	mb. ft (c. mtr.) c. mtr. l. M. пог. м	Kg lb (kg) кг
Seamless steel pipes acc.to API 5L - PSL1/2000/ ASTM - A106/99/A 53/A53M/ 01/ ASME SA 106/01/ SA 53/98. Diameter tolerances +/- 1%. Bevelled ends acc.to API - 5L. Outside surface double lacquered.	20" x 0,500" (508 x 12,7 mm) 33 - 44 ft (10,06 - 13,41 m)	B / C / X42	823992	9	346,7 (105,66)	36137 (16389)

Kontrolę techniczną powyższego zamówienia przeprowadził Oddział Technicznej Kontroli. Wyniki badań podano niżej.
Le controle technique de la été exécuté par le Service de Controle. Les resultats des essais sont indiqués ci-après.
The technical investigation of this order has been executed by the Works Control. Results of tests are as follows.
Die technische Prüfung obiger Bestellung wurde von der Fabrikationskontrolle durchgeführt. Die Ergebnisse der Proben sind nachstehend angeführt.
Технический контроль вышеупомянутого заказа произвел Отдел Технического Контроля. Результат испытания представлен ниже.

1. **SKŁAD CHEMICZNY** - ANALYSE CHIMIQUE – CHEMICAL COMPOSITION – CHEMISCHE ZUSAMMENSETZUNG
ХИМИЧЕСКИЙ СОСТАВ

Wytop Coulée Heat Abstich Плавка	C	Mn	Si	P	S	Cr	Ni	Cu
823992	0,17	1,02	0,22	0,013	0,008	0,06	0,13	0,20
	Mo 0,03	V 0,00	Al 0,031	Ti 0,004	Nb 0,0000	Ce 0,38		

2. BADANIA MECHANICZNE – ESSAIS MECANIQUES – MECHANICAL TESTS – MECHANISCHE UNTERSUCHUNGEN – МЕХАНИЧЕСКИЕ ИСПЫТАНИЯ

Nr wytopu lub próby No de la coulée ou De l'eprouvette Heat No Or. Tests No Abstich Oder Probe No Ng плавки или пробы	Stan obróbki Termicznej Traitement thermique Heat treatement Therm. Bearbeitung Термич. обработка	Re psi (MPa)	Rm psi (MPa)	A 2" %	Z %	U	Twardość Dureté Hardness Härte Твердость
823992/12887	Hardnes isn't Higher than 22 HRc.Pipes in accordance to NACE MR 01-75 Test transfersc Type E	49893 (344)	77305 (533)	39,8			

2. BADANIA TECHNOLOGICZNE – ESSAIS TECHNOLOGIQUES – TECHNOLOGICAL TESTS – TECHNOLOGISCHE PRÜFUNGEN

Flattening test - positive results

4. BADANIA METALOGRAFICZNE – ESSAIS METALLOGRAPHIQUES – METALLOGRAPHIC TESTS – METALLOGRAPHISCHE UNTERSUCHUNGEN – МЕТАЛЛОГРАФИЧЕСКИЕ ИСПЫТАНИЯ

5. INNE BADANIA – AUTRES ESSAIS – OTHER TESTS – ANDERE UNTERSUCHUNGEN – ДРУГИЕ ИСПЫТАНИЯ

Each pipes hydrostatically tested by pressure 1890 psi - positive results time 5 s

6. UWAGI DODATKOWE – ADDITIONAL REMARKS – AUTRESOBSERVATIONS – ANDERE BEMERUNGEN

Powierzchnię i wymiary zbadano w 100% - Surface et dimensions ont été controlés et 100% - Surface and dimensions tested at 100% Oberfläche und Abmessungen geprüft zu 100% - Наружный осмотр и проверка измерений произведены в 100%

Materiał oznaczono – La material est marqué – Material marked – Das Material wurde bezeichnet – Материал обозначен

Mill's symbol . Seamless. Acc.to API 5 L/ B /X42/ PSL 1 / A106/ /B/ C/ A53/ B/ S A106/ B / C/ SA53 / B . Size in inches. Heat number.

KJ 21/634

Na podstawie wyżej przeprowadzonych prób material zwolniono – Sur la base des essais si-dessus le material est délivré According to the carried out tests the material released – Untersuchungen wurde das Material freigegeben – На основании вышеизложенных Испытаний признан годным.

Kontrola Jakości Contrôle de Fabrication Control of Manufacture Fabrikationskontrolle Технический контроль	Dyrekcja Huty Direction de l'Usine Works Management Hütten - Direktion Дирекция Завода	
SPECJALISTA Z ZAKRESU KONTROLI JAKOŚCI HALINA REHMET		dn. 18.05. 2004 r.

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: March 4, 2005 Number of Copies: 8

Submittal Number: 02633-014-A

Specification Section Number 02633-014-A

Item Submitted: 24" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Marybeth Rios

Transmittal Date: March 4, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

M W H

NO EXCEPTIONS TAKEN	✓	AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	

REVIEWED BY: [signature] DATE: 3/10/05

RECOMMENDED BY: [signature] DATE: 3/10/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES; COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 026.33-014-A
Transmittal No. # ____ Date: 3/4/05
Signature

INSPECTION CERTIFICATE

HUSTEEL CO., LTD.

(SHINHO STEEL CO., LTD.)

HEAD OFFICE : Shinan B/D 15F, 943-19, Daechi-dong Kangnam-ku, SEOUL 135-845, KOREA
INCHUN PLANT: 468,HAGIK-DONG,NAM-KU, INCHON,KOREA
DAEBUL PLANT: 11 BLOCK,DAEBUL NATIONAL INDUSTRIAL COMPLEX, NABUL-RI, SAMHO-MYEON,YOUNGAM-KUN, CHULLANAM-DO,KOREA

계약서번호 SH980317JK
L/C No. : 13045NJ
발 급 일 자
ISSUED DATE : 2004. 10. 28
제 품 명
COMMODITY : E.R.W. STEEL PIPE
제 품 규 격
SPECIFICATION : API 5L X42 PSL1/API 5LB /ASTM A53B/ASME SA 53B

증명서번호
CERTIFICATE No. : D041028 - 184
제 조 번 호
MANUFACTURED No.: 04-08-202
주 문 자
SUPPLIER : HUSTEEL CO.,LTD.
수 요 가
CUSTOMER :

ITEM NO.	HEAT NO. (LOT)	관종 TYPE	수 량 QUANTITY (PIECES)	호칭경 NOMINAL SIZE (in)	주문치수 ORDER SIZE 바깥지름 O.D. (mm)	두께 W.T. (in)	길이 LENGTH (ft)	중 량 WEIGHT (lb/ft)	인장시험 TENSILE TEST 인장강도 TENSILE STRENGTH (psi)	항복강도 YIELD STRENGTH (psi)	연신율 ELONG-ATION (%)	화학성분 CHEMICAL COMPOSITION(%) C	Si	Mn	P	S	Cu	Cr	Ni	Mo	V
		①			②	③						2	3	2	3		2		3		④
1	B31806	BPEB	18	16	406.4	0.375	42'	62.64	71936	57142	36	13	10	84	12	7	2	2	3	TR	1
2	B31808	BPEB	6	16	406.4	0.375	42'	62.64	70630	54677	34	14	11	86	13	6	2	2	3	1	TR
3	A05580	BPEB	45	24	610.0	0.375	42'	94.71	73821	55692	30	15	10	87	15	9	3	2	2	TR	TR
4	A05589	BPEB	23	24	610.0	0.375	42'	94.71	73241	55837	39	14	12	82	13	8	2	3	2	1	1
5	A05592	BPEB	25	24	610.0	0.500	42'	125.61	72226	52356	36	14	12	87	12	9	3	2	2	1	TR
6	A05583	BPEB	17	24	610.0	0.500	42'	125.61	74981	52211	37	13	10	85	15	8	2	3	2	TR	1
7	A05589	BPEB	14	24	610.0	0.500	42'	125.61	74256	53372	37	14	10	85	13	8	2	2	3	1	TR
8	A05580	BPEB	2	24	610.0	0.500	42'	125.61	73096	53517	34	15	12	88	16	9	3	2	2	TR	1
9	A03494	BPEB	6	24	610.0	0.500	42'	125.61	72516	54677	37	16	11	92	15	6	3	2	2	TR	TR
10	A05586	BPEB	6	24	610.0	0.500	42'	125.61	72951	52211	38	14	12	89	14	8	3	2	2	1	1

ITEM NO.	수압시험 HYDROSTATIC TEST TP (PSI)	RE-SULT	열처리온도 HEAT TREATMENT (℃)	비파괴시험 NDT (U.T)	경도시험 HARDNESS TEST (Hr8)	외주장 CIRCUMFERENCE(mm) END	BODY	용접부인장강도 TENSILE STRENGTH OF WELDS (psi)	아연도금시험 ZINC COATING TEST WZC (g/㎡)	CST (TIMES)	VISUAL & DIMEN-SION	FLATT-ENING (BEND) TEST	WDT	RGT	FRT	CRT	RFT	S.T (%)	충격시험 IMPACT TEST ENE-RGY (J)	SHEAR AREA (%)	잔류자기 Res. Mag.	비고 REMARKS
	④			⑥					⑦				⑨						(0)℃		Gauss	
1	1670	GOOD	920	ACCEPT				75996			ACCEPT	GOOD	GOOD	GOOD				0.1				
2	1670	GOOD	920	ACCEPT				74691			ACCEPT	GOOD	GOOD	GOOD				0.1				
3	1180	GOOD	920	ACCEPT				77882			ACCEPT	GOOD	GOOD	GOOD				0.1				
4	1180	GOOD	920	ACCEPT				77302			ACCEPT	GOOD	GOOD	GOOD				0.1				
5	1580	GOOD	950	ACCEPT				76287			ACCEPT	GOOD	GOOD	GOOD				0.1				HARDNESS
6	1580	GOOD	950	ACCEPT				79042			ACCEPT	GOOD	GOOD	GOOD				0.1				
7	1580	GOOD	950	ACCEPT				78317			ACCEPT	GOOD	GOOD	GOOD				0.1				MAX.22HRC
8	1580	GOOD	950	ACCEPT				77157			ACCEPT	GOOD	GOOD	GOOD				0.1				
9	1580	GOOD	950	ACCEPT				76577			ACCEPT	GOOD	GOOD	GOOD				0.1				
10	1580	GOOD	950	ACCEPT				77012			ACCEPT	GOOD	GOOD	GOOD				0.1				

NOTE
①TYPE BPE BLACK PLAIN ENDS BPEB BPE BEVELLED BTE BLACK THREADED ENDS BTC BLACK THREADED & COUPLED GPE GALVANIZED PLAIN ENDS GTE GALVANIZED THREADED ENDS GTC GALVANIZED THREAD & COUPLED
②O.D. OUTSIDE DIAMETER ③W.T. WALL THICKNESS ④CHEMICAL COMPOSITION CHECK ANALYSIS 2:×100 3:×1000 TR TRACE ⑤TP TESTING PRESSURE ⑥NDT NONDESTRUCTIVE TEST
E.T EDDY CURRENT TEST U.T ULTRASONIC TEST ⑦WZC WEIGHT OF ZINC COATING CST COPPER SULPHATE TEST ⑧WDT WELD DUCTILITY TEST RGT RING GAGE TEST FRT FRANGE TEST ⑨ RES.MAG. : RESIDUAL MAGNETISM
CRT CRUSH TEST RFT REVERSE FLATTENING TEST S.T STRAIGHTNESS

SIGNATURE
SURVEYOR TO:

본 제품은 관련 규격이 정한 시험 및 검사에 합격하였음을 증명합니다.
WE HEREBY CERTIFY THAT THE PRODUCTS HEREIN HAVE BEEN MADE AND TESTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND ALSO WITH THE REQUIREMENTS CALLED FOR THE ORDER.

SIGNATURE
MANAGER OF QUALITY ASSURANCE TEAM

HMS C-30-05-(21)

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 9, 2005 Number of Copies: 8

Submittal Number: 02633-010-A

Specification Section Number 02633-010-A

Item Submitted: 30" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Marybeth Rios

Transmittal Date: February 9, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

M W H

NO EXCEPTIONS TAKEN	✓ AMEND-RESUBMIT
MAKE CORRECTIONS NOTED	REJECTED – RESUBMIT
REVIEWED BY:	DATE: 2/15/05
RECOMMENDED BY:	DATE: 2/23/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES AND TECHNIQUES, COORDINATING WORK WITH OTHER TRADES AND SATISFACTORY AND SAFE FORMANCE OF THE WORK

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577288
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:05.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154430	921816	30X0.375X38.71	4599.59	L	B W	T T	60940	80365 83287	32	0.758	1.53x0.38 1.53x0.37	170	- SUITABLE	E	-	-	-	-	-	-
154435	"	30X0.375X38.68	4596.03																	
154499	"	30X0.375X38.68	4596.03																	
154501	"	30X0.375X38.71	4599.59																	
154799	935699	30X0.375X38.65	4592.46	L	B W	T T	60486	81159 84416	34	0.745	1.52x0.38 1.49x0.38	185	- SUITABLE	E	-	-	-	-	-	-
154805	"	30X0.375X38.42	4565.13																	

TO BE CONTINUED

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 026 33 010-A
Transmittal No. # _____ Date: 2/9/05
Signature

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577272
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:04.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154429	921816	30X0.375X38.68	4596.03	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154434	"	30X0.375X38.65	4592.46																	
154465	"	30X0.375X38.71	4599.59																	
154483	"	30X0.375X38.65	4592.46																	
154486	"	30X0.375X38.65	4592.46																	
154491	"	30X0.375X38.71	4599.59																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

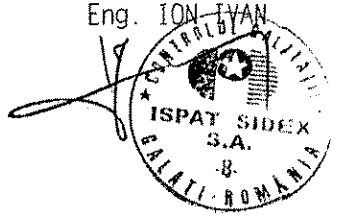
* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN



S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577392
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:27.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154559	935566	30X0.375X38.68	4596.03	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154580	"	30X0.375X38.65	4592.46																	
154576	"	30X0.375X38.71	4599.59																	
154631	"	30X0.375X38.65	4592.46																	
154485	921816	30X0.375X38.65	4592.46	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154494	"	30X0.375X38.62	4588.90																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS														
		x 100			x 1000					x 100						
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V		
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-	
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-	

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
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  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION TIAN

ISPAT SIDEX S.A. GALATI-ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577286
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:05.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154574	922262	30X0.375X38.71	4599.59	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154647	"	30X0.375X38.68	4596.03																	
154653	"	30X0.375X38.68	4596.03																	
155232	"	30X0.375X38.68	4596.03																	
154772	935699	30X0.375X38.71	4599.59	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154797	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
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  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577290
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:05.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154636	935566	30X0.375X38.65	4592.46	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154638	"	30X0.375X38.68	4596.03																	
154657	"	30X0.375X38.68	4596.03																	
154762	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154789	"	30X0.375X35.99	4276.39																	
154792	"	30X0.375X38.65	4592.46																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
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* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577289
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:05.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154549	935567	30X0.375X38.71	4599.59	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-
154588	"	30X0.375X37.17	4416.60																	
154589	"	30X0.375X38.68	4596.03																	
154593	"	30X0.375X38.68	4596.03																	
154642	922262	30X0.375X38.68	4596.03	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
✓ 154783	910309	30X0.375X38.68	4596.03	L	B	T	65031	83095	30	0.782	1.55x0.40	180	-	E	-	-	-			
					W	T		84591			1.52x0.40		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
910309	H	12	118	24	22	10	47	42	18	2.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
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* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

CONTROLUL CALITATII
ISPAT SIDEX S.A.
GALATI-ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577283
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:05.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	* 1	* 2	* 3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	* 4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154439	921816	30X0.375X38.65	4592.46	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154502	"	30X0.375X38.58	4584.14																	
154665	"	30X0.375X38.68	4596.03																	
154577	935566	30X0.375X37.17	4416.60	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154635	"	30X0.375X38.68	4596.03																	
154592	935567	30X0.375X38.71	4599.59	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100 C	Mn	Si	x 1000 P	S	Al	Nb	Ti	x 100 Cr	Ni	Cu	MO	V	
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

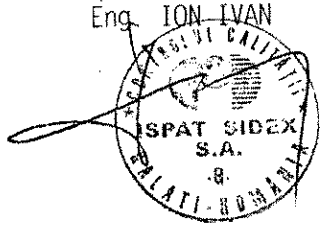
* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN



S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577396
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:27.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154561	935566	30X0.375X38.71	4599.59	L	B W	T T	66787	83680 86912	32	0.798	1.46x0.39 1.48x0.38	184	- SUITABLE	E	-	-	-	-	-	-
154628	"	30X0.375X38.68	4596.03																	
154633	"	30X0.375X38.62	4588.90																	
154400	921816	30X0.375X37.63	4471.26	L	B W	T T	60940	80365 83287	32	0.758	1.53x0.38 1.53x0.37	170	- SUITABLE	E	-	-	-	-	-	-
154432	"	30X0.375X38.68	4596.03																	
154500	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577229
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:28.01.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
155085	935882	30X0.375X38.68	4596.03	L	B	T	52153	82831	32	0.629	1.53x0.38	190	-	E	-	-	-			
					W	T		81570			1.45x0.38		SUITABLE					-	-	-
155100	"	30X0.375X37.11	4409.48																	
155101	"	30X0.375X38.65	4592.46																	
155102	"	30X0.375X38.62	4588.90																	
155229	"	30X0.375X38.68	4596.03																	
155231	922262	30X0.375X38.71	4599.59	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100 C	Mn	Si	x 1000 P	S	Al	Nb	Ti	x 100 Cr	Ni	Cu	MO	V	
935882	H	12	113	23	23	13	60	37	-	4.0	1.0	2.0	-	5.0	-
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

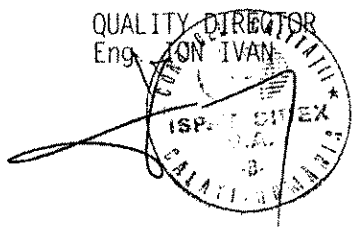
* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN



S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577273
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:04.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154736	910308	30X0.375X38.71	4599.59	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154761	"	30X0.375X38.65	4592.46																	
154785	"	30X0.375X38.71	4599.59																	
154791	"	30X0.375X38.55	4580.58																	
154794	"	30X0.375X38.68	4596.03																	
154471	922263	30X0.375X38.71	4599.59	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	*	CHEMICAL ANALYSIS													
	5	x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-
922263	H	11	114	20	20	8.0	42	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577376
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:25.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	* 1	* 2	* 3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	* 4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154663	921816	30X0.375X38.65	4592.46	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154667	"	30X0.375X38.71	4599.59																	
✓ 154470	922263	30X0.375X38.65	4592.46	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-
154548	935567	30X0.375X38.68	4596.03	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-
✓ 154659	935566	30X0.375X38.68	4596.03	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
✓ 154780	910309	30X0.375X38.42	4565.13	L	B	T	65031	83095	30	0.782	1.55x0.40	180	-	E	-	-	-			
					W	T		84591			1.52x0.40		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS x 100 C	Mn	Si	x 1000 P	S	Al	Nb	Ti	x 100 Cr	Ni	Cu	MO	V	
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
922263	H	11	114	20	20	8.0	42	-	-	1.0	1.0	1.0	-	4.0	-
910309	H	12	118	24	22	10	47	42	18	2.0	1.0	2.0	-	5.0	-
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION-IVAN

ISPAT S.A. GALATI

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577237
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:28.01.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154630	935566	30X0.375X38.68	4596.03	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154634	"	30X0.375X38.02	4517.60																	
154768	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154796	"	30X0.375X38.68	4596.03																	
154779	910309	30X0.375X38.55	4580.58	L	B	T	65031	83095	30	0.782	1.55x0.40	180	-	E	-	-	-			
					W	T		84591			1.52x0.40		SUITABLE					-	-	-
154553	935567	30X0.375X38.71	4599.59	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-
910309	H	12	118	24	22	10	47	42	18	2.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

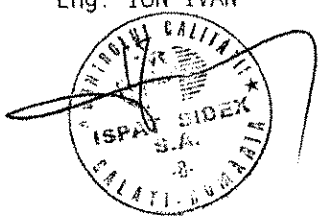
* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN



S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577281
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:05.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
✓ 154740	910308	30X0.375X38.71	4599.59	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154742	"	30X0.375X38.68	4596.03																	
154753	"	30X0.375X38.68	4596.03																	
154760	"	30X0.375X38.55	4580.58																	
154766	"	30X0.375X38.68	4596.03																	
154790	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577315
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:10.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154398	922263	30X0.375X38.65	4592.46	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-
154472	"	30X0.375X38.71	4599.59																	
154555	935566	30X0.375X38.65	4592.46	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154581	"	30X0.375X38.65	4592.46																	
154746	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154769	"	30X0.375X37.89	4502.16																	

TO BE CONTINUED

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577275
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:04.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	* 1	* 2	* 3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	* 4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154578	935566	30X0.375X38.71	4599.59	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154627	"	30X0.375X38.65	4592.46																	
154728	935699	30X0.375X38.71	4599.59	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154733	"	30X0.375X38.71	4599.59																	
154655	922262	30X0.375X38.71	4599.59	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154662	919722	30X0.375X38.58	4584.14	L	B	T	59198	77113	38	0.767	1.52x0.38	149	-	E	-	-	-			
					W	T		81104			1.52x0.37		SUITABLE					-	-	-

TO BE CONTINUED

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577377
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:25.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154495	921816	30X0.375X38.71	4599.59	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154666	"	30X0.375X38.68	4596.03																	
154734	935699	30X0.375X38.68	4596.03	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154804	"	30X0.375X38.68	4596.03																	
154583	935566	30X0.375X38.68	4596.03	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154767	910308	30X0.375X38.71	4599.59	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-

TO BE CONTINUED

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577250
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:30.01.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
155087	935882	30X0.375X38.65	4592.46	L	B	T	52153	82831	32	0.629	1.53x0.38	190	-	E	-	-	-			
					W	T		81570			1.45x0.38		SUITABLE					-	-	-
155090	"	30X0.375X38.68	4596.03																	
155220	"	30X0.375X38.39	4561.57																	
155228	"	30X0.375X38.65	4592.46																	
154395	922263	30X0.375X38.68	4596.03	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-
155233	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935882	H	12	113	23	23	13	60	37	-	4.0	1.0	2.0	-	5.0	-
922263	H	11	114	20	20	8.0	42	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVANIUC

ISPAT SIDEX S.A. GALATI-ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577390
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:27.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154731	935699	30X0.375X38.71	4599.59	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154770	"	30X0.375X37.66	4474.83																	
154771	"	30X0.375X38.68	4596.03																	
154773	"	30X0.375X38.71	4599.59																	
154802	"	30X0.375X38.65	4592.46																	
155992	"	30X0.375X38.71	4599.59																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		C	x 100 Mn	Si	P	S	x 1000 Al	Nb	Ti	Cr	Ni	x 100 Cu	MO	V	
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. [illegible]

ISPAT SIDEX S.A. GALATI - ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577402
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:28.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154641	922262	30X0.375X38.68	4596.03	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154643	"	30X0.375X38.65	4592.46																	
154649	"	30X0.375X38.68	4596.03																	
154651	"	30X0.375X37.14	4413.04																	
154739	910308	30X0.375X38.68	4596.03	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154748	"	30X0.375X38.65	4592.46																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100 C	Mn	Si	x 1000 P	S	Al	Nb	Ti	x 100 Cr	Ni	Cu	MO	V	
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

ISPAT SIDEX S.A. GALATI - ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577379
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:25.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154668	921816	30X0.375X38.68	4596.03	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154436	"	30X0.375X38.62	4588.90																	
154735	935699	30X0.375X38.68	4596.03	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
155991	"	30X0.375X38.65	4592.46																	
154397	922263	30X0.375X38.68	4596.03	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-
154788	910308	30X0.375X38.55	4580.58	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-

TO BE CONTINUED

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577220
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:27.01.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154640	922262	30X0.375X38.68	4596.03	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154646	"	30X0.375X38.71	4599.59																	
154652	"	30X0.375X38.68	4596.03																	
154656	"	30X0.375X38.42	4565.13																	
154503	921816	30X0.375X38.65	4592.46	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154661	919722	30X0.375X38.65	4592.46	L	B	T	59198	77113	38	0.767	1.52x0.38	149	-	E	-	-	-			
					W	T		81104			1.52x0.37		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
919722	H	13	104	21	18	10	40	37	16	2.0	1.0	3.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577277
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
DATE:04.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS PSI	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154741	910308	30X0.375X38.68	4596.03	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154751	"	30X0.375X38.65	4592.46																	
154754	"	30X0.375X38.68	4596.03																	
155080	935882	30X0.375X38.65	4592.46	L	B	T	52153	82831	32	0.629	1.53x0.38	190	-	E	-	-	-			
					W	T		81570			1.45x0.38		SUITABLE					-	-	-
155227	"	30X0.375X38.62	4588.90																	
154594	935567	30X0.375X38.71	4599.59	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS												
		x 100			x 1000					x 100				
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0
935882	H	12	113	23	23	13	60	37	-	4.0	1.0	2.0	-	5.0
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

ISPAT SIDEX S.A. GALATI-ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577217
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:23.01.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM.. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154557	935566	30X0.375X38.71	4599.59	L	B W	T T	66787	83680 86912	32	0.798	1.46x0.39 1.48x0.38	184	- SUITABLE	E	-	-	-	-	-	-
154560	"	30X0.375X38.71	4599.59																	
154629	"	30X0.375X38.68	4596.03																	
154632	"	30X0.375X38.68	4596.03																	
154781	910309	30X0.375X37.96	4510.47	L	B W	T T	65031	83095 84591	30	0.782	1.55x0.40 1.52x0.40	180	- SUITABLE	E	-	-	-	-	-	-
154782	"	30X0.375X37.99	4514.04																	

TO BE CONTINUED

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577235
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1. API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE : 28.01.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154648	922262	30X0.375X38.68	4596.03	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154943	"	30X0.375X38.68	4596.03																	
154944	"	30X0.375X38.62	4588.90																	
155221	935882	30X0.375X38.65	4592.46	L	B	T	52153	82831	32	0.629	1.53x0.38	190	-	E	-	-	-			
					W	T		81570			1.45x0.38		SUITABLE					-	-	-
155225	"	30X0.375X38.68	4596.03																	
155226	"	30X0.375X38.71	4599.59																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
935882	H	12	113	23	23	13	60	37	-	4.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

CONTROLUL CALITATII ISPAT SIDEX S.A. GALATI ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577251
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1. API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:30.01.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
155082	935882	30X0.375X38.65	4592.46	L	B	T	52153	82831	32	0.629	1.53x0.38	190	-	E	-	-	-			
					W	T		81570			1.45x0.38		SUITABLE					-	-	-
155089	"	30X0.375X38.71	4599.59																	
155222	"	30X0.375X38.62	4588.90																	
155223	"	30X0.375X38.68	4596.03																	
155230	"	30X0.375X38.58	4584.14																	
154798	935699	30X0.375X38.65	4592.46	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935882	H	12	113	23	23	13	60	37	-	4.0	1.0	2.0	-	5.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

ISPAT SIDEX S.A. GALATI ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577216
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:23.01.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154752	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154763	"	30X0.375X38.71	4599.59																	
154765	"	30X0.375X38.68	4596.03																	
154732	935699	30X0.375X38.68	4596.03	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154801	"	30X0.375X38.68	4596.03																	
154803	"	30X0.375X38.65	4592.46																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577285
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:05.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	* 1	* 2	* 3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	* 4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154745	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154756	"	30X0.375X38.65	4592.46																	
154758	"	30X0.375X38.68	4596.03																	
154759	"	30X0.375X38.58	4584.14																	
154584	935567	30X0.375X38.65	4592.46	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-
154639	935566	30X0.375X38.65	4592.46	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

CONTROLUL CALITATII ISPAT SIDEX S.A. GALATI ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577398
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:27.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154744	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154747	"	30X0.375X38.65	4592.46																	
154784	"	30X0.375X38.71	4599.59																	
154730	935699	30X0.375X38.71	4599.59	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154563	922263	30X0.375X38.68	4596.03	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-
154644	922262	30X0.375X38.68	4596.03	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-
922263	H	11	114	20	20	8.0	42	-	-	1.0	1.0	1.0	-	4.0	-
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

SPAT SIDEX S.A.

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: March 4, 2005 Number of Copies: 8

Submittal Number: 02633-010-A

Specification Section Number 02633-010-A

Item Submitted: 30" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Marybeth Rios

Transmittal Date: March 4, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

M W H			
NO EXCEPTIONS TAKEN		✓ AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	
REVIEWED BY:		DATE:	3/10/05
RECOMMENDED BY:		DATE:	3/10/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS, FABRICATION PROCESSES AND TECHNIQUES OF CONSTRUCTION, COORDINATING WORK WITH OTHER TRADES, AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577315
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:10.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154398	922263	30X0.375X38.65	4592.46	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
					W	T		89486			1.51x0.37		SUITABLE					-	-	-
154472	"	30X0.375X38.71	4599.59																	
154555	935566	30X0.375X38.65	4592.46	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154581	"	30X0.375X38.65	4592.46																	
154746	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
✓ 154769	"	30X0.375X37.89	4502.16																	

TO BE CONTINUED

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 02633-010-A
Transmittal No. # Date: 3/4/05
Signature

HEAT	* 5	CHEMICAL ANALYSIS x 100 C	Mn	Si	x 1000 P	S	Al	Nb	Ti	x 100 Cr	Ni	Cu	MO	V	
922263	H	11	114	20	20	8.0	42	-	-	1.0	1.0	1.0	-	4.0	-
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577399
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:28.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154743	910308	30X0.375X38.68	4596.03	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154749	"	30X0.375X38.52	4577.01																	
154750	"	30X0.375X38.68	4596.03																	
154786	"	30X0.375X38.68	4596.03																	
154787	"	30X0.375X38.68	4596.03																	
154793	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

CONTROLUL CALITATII
ISPAT SIDEX S.A.
GALATI-ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577283
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:05.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154439	921816	30X0.375X38.65	4592.46	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154502	"	30X0.375X38.58	4584.14																	
154665	"	30X0.375X38.68	4596.03																	
154577	935566	30X0.375X37.17	4416.60	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
					W	T		86912			1.48x0.38		SUITABLE					-	-	-
154635	"	30X0.375X38.68	4596.03																	
154092	935567	30X0.375X38.71	4599.59	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

SPAT SIDEX S.A.

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577286
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:05.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No:	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154574	922262	30X0.375X38.71	4599.59	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154647	"	30X0.375X38.68	4596.03																	
154653	"	30X0.375X38.68	4596.03																	
155232	"	30X0.375X38.68	4596.03																	
154772	935699	30X0.375X38.71	4599.59	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154799	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577400
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:28.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154469	921816	30X0.375X38.71	4599.59	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154488	"	30X0.375X38.71	4599.59																	
154473	922262	30X0.375X38.71	4599.59	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154645	"	30X0.375X38.71	4599.59																	
154586	935567	30X0.375X38.68	4596.03	L	B	T	55165	81126	36	0.680	1.43x0.38	176	-	E	-	-	-			
					W	T		80728			1.47x0.39		SUITABLE					-	-	-
154778	935699	30X0.375X38.65	4592.46	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
935567	H	12	120	24	20	8.0	60	42	-	4.0	1.0	4.0	-	4.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

ISPAT SIDEX S.A.

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577286
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:05.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154574	922262	30X0.375X38.71	4599.59	L	B	T	68278	87411	32	0.781	1.46x0.41	192	-	E	-	-	-			
					W	T		88674			1.44x0.41		SUITABLE					-	-	-
154647	"	30X0.375X38.68	4596.03																	
154653	"	30X0.375X38.68	4596.03																	
155232	"	30X0.375X38.68	4596.03																	
154772	935699	30X0.375X38.71	4599.59	L	B	T	60486	81159	34	0.745	1.52x0.38	185	-	E	-	-	-			
					W	T		84416			1.49x0.38		SUITABLE					-	-	-
154797	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
922262	H	13	120	22	16	8.0	65	43	17	2.0	1.0	1.0	-	5.0	-
935699	H	11	113	36	16	8.0	62	48	19	2.0	1.0	1.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577272
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.)
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

DATE:04.02.2004

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154429	921816	30X0.375X38.68	4596.03	L	B	T	60940	80365	32	0.758	1.53x0.38	170	-	E	-	-	-			
					W	T		83287			1.53x0.37		SUITABLE					-	-	-
154434	"	30X0.375X38.65	4592.46																	
154465	"	30X0.375X38.71	4599.59																	
154483	"	30X0.375X38.65	4592.46																	
154486	"	30X0.375X38.65	4592.46																	
154491	"	30X0.375X38.71	4599.59																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS													
		x 100			x 1000					x 100					
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
921816	H	12	114	26	17	10	54	-	-	1.0	1.0	1.0	-	4.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

CONTROL CALITATE
ISPAT SIDEX S.A.
GALATI - ROMANIA

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577315
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:10.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	*1	*2	*3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	*4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154398	922263	30X0.375X38.65	4592.46	L	B	T	58488	84269	32	0.694	1.51x0.38	170	-	E	-	-	-			
154472	"	30X0.375X38.71	4599.59		W	T		89486			1.51x0.37		SUITABLE					-	-	-
154555	935566	30X0.375X38.65	4592.46	L	B	T	66787	83680	32	0.798	1.46x0.39	184	-	E	-	-	-			
154581	"	30X0.375X38.65	4592.46		W	T		86912			1.48x0.38		SUITABLE					-	-	-
154746	910308	30X0.375X38.65	4592.46	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
✓ 154769	"	30X0.375X37.89	4502.16		W	T		79400			1.49x0.40		SUITABLE					-	-	-

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS												
		x 100			x 1000					x 100				
		C	Mn	Si	P	S	Al	Nb	Ti	Cr	Ni	Cu	MO	V	
922263	H	11	114	20	20	8.0	42	-	-	1.0	1.0	1.0	-	4.0	-
935566	H	13	115	23	18	9.0	40	-	-	2.0	1.0	3.0	-	4.0	-
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

S.C. ISPAT SIDEX S.A. GALATI - ROMANIA

INSPECTION CERTIFICATE No.577399
ACC.TO EN 10204/3.1.B.

ORDER : 50025 / 250
CUSTOMER : VASS PIPE / INA ORDER # 2642 (VASS P.O. # 14172 N.J.) DATE:28.02.2004
PRODUCT : LSAW CARBON STEEL LINE PIPE
SPECIFICATION : API 5L 42 EDITION GRADE X52 / X42 / B - PSL1, API 2B FOR DIMENSIONAL TOLERANCES.
DELIVERYSTATE : EXPANDATED, CLEAR LAQUERED OUTSIDE
BEVELLED ENDS AT 30° (+5° / -0°)
WELD FACTOR : V = 1.0
STRAIGHTNESS : max. 0.551 inch.

PIPE No.	HEAT	DIMENSION inchxinchxft	WEIGHT lbs.	* 1	* 2	* 3	TENSILE TEST YS PSI	TS	EL %	YS/TS	DIM. OF SPECIMENS inch.	HARDNES HV10	GUIDED-BEND TEST	* 4	IMPACT TEST NOTCH : BM 1	BM 2	BM 3	W 1	W 2	W 3
154743	910308	30X0.375X38.68	4596.03	L	B	T	61889	78099	32	0.792	1.52x0.40	180	-	E	-	-	-			
					W	T		79400			1.49x0.40		SUITABLE					-	-	-
154749	"	30X0.375X38.52	4577.01																	
154750	"	30X0.375X38.68	4596.03																	
154786	"	30X0.375X38.68	4596.03																	
154787	"	30X0.375X38.68	4596.03																	
154793	"	30X0.375X38.68	4596.03																	

TO BE CONTINUED

HEAT	* 5	CHEMICAL ANALYSIS x 100 C	Mn	Si	x 1000 P	S	Al	Nb	Ti	x 100 Cr	Ni	Cu	MO	V	
910308	H	12	108	22	25	12	40	40	17	3.0	1.0	2.0	-	5.0	-

END OF CERTIFICATE

DEFINITIONS:
* 1 TYPE OF TEST
  L = LOT
  H = HEAT
* 2 LOCATION
  B = BASE MATERIAL
  W = WELD
* 3 DIRECTION
  L = LONGITUDINAL
  T = TRANSVERSE
* 4 IMPACT TEST
  E = ENERGY

* 5 CHEMICAL ANALYSIS
  H = HEAT
  P = PRODUCT

OBSERVATIONS:
1. SURFACE & DIMENSION TEST : ACCEPTED
2. HYDROSTATIC TEST : ACCEPTED 1170 PSI / 10"
3. X RAY INVESTIGATION 100 % : ACCEPTED ACC. TO ISO WIRE 4% PENETRAMETER

This document certifies that the materials above indicated have been inspected in accordance with the specifications mentioned herewith and NACE MR 0175 Specifications.

INSPECTOR
TEODORA BUNEA

QUALITY DIRECTOR
Eng. ION IVAN

Submittal Data
FROM
Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 8, 2005 Number of Copies: 8

Submittal Number: 02633-013-A

Specification Section Number 02633-013-A

Item Submitted: 34" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: February 8, 2005

- ☐ Approved
- ☐ Approved with changes
- ☐ Rejected, Revise & Resubmit
- ☐ Not Reviewed

By:

Firm:

Date:

MWH			
NO EXCEPTIONS TAKEN	―	AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	
REVIEWED BY:		DATE: 2/14/05	
RECOMMENDED BY: M Clark		DATE: 2/23/05	

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES, COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

ISPAT SIDEX
Member of THE LNM GROUP
THE LARGEST IRON AND STEEL PRODUCER OF ROMANIA

1, Smardan Street, Galati, 6200, ROMANIA
Phone: +40 236 407 633
Fax: +40 236 407 635
http://www.ispat.com; e-mail: office@sidex.ro

TÜV ISO 9001

INSPECTION CERTIFICATE: 4902250295

ACCORDING TO: EN 10204/3.1.B

CUSTOMER:

PRODUCT: LSAW CARBON STEEL LINE PIPE

EXTERNAL ASPECT: SUITABLE

DATE 7-Sep-04

ORDER: 900024/50000861

STANDARD: API 5L 42EDITION;API 2B FOR DIMENSIONAL TOLERANCES;STRAIGHTNESS MAX.0.641";NACE MR 0175 FOR HARDNESS

DELIVERY STATE: EXPANDATED, BEVELLED ENDS AT 30° ; Var1,0

LOT:

TOTAL NO.OF PIECES 33 TOTAL WEIGHT 171306 lbs

MECHANICAL TESTS

NO. CRT	NO PIPE	NO. HEAT	QUALITY	DIAMETER [inch]	LENGTH [feet]	THICKNESS [inch]	WEIGHT [lbs.]	NO. TEST	DIRECTION	DIM.OF SPECIMEN B[inch] BASE MATERIAL	RM[psi] BASE MATERIAL	RE[psi] BASE MATERIAL	A[%] BASE MATERIAL	RE/RM	DIM.OF SPECIMENS [inch] WELD	RM [psi] WELD	HARDNESS HV 10 FOR BASE MATERIAL	GUIDED BEND TEST TRANS.	IMPACT TEST NOTCH FOR BASE MATERIAL	HYDROSTATIC TEST 1030 psi/10SEC	X RAY INVESTIGATION ACC.ISO WIRE4%
1	161188	928272	X 52- X42-Gr.B PSL1	34	38.68	0.375	5222.29	161177	TRANS.	1.47x0.38	88465	63189	34	0.714	1.49x0.38	89730	179	SUITABLE		SUITABLE	SUITABLE
2	161185			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
3	161187			34	38.29	0.375	5167.15													SUITABLE	SUITABLE
4	161168			34	38.39	0.375	5180.39													SUITABLE	SUITABLE
5	161169			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
6	161170			34	38.65	0.375	5217.88													SUITABLE	SUITABLE
7	161171			34	38.12	0.375	5145.10													SUITABLE	SUITABLE
8	161172			34	38.39	0.375	5180.39													SUITABLE	SUITABLE
9	161173			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
10	161174			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
11	161175			34	38.45	0.375	5189.21													SUITABLE	SUITABLE
12	161176			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
13	161177			34	37.07	0.375	5003.96													SUITABLE	SUITABLE
14	161178			34	38.12	0.375	5145.10													SUITABLE	SUITABLE
15	161179			34	38.65	0.375	5217.88													SUITABLE	SUITABLE
16	161180			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
17	161181			34	38.45	0.375	5189.21													SUITABLE	SUITABLE
18	161182			34	38.71	0.375	5226.70													SUITABLE	SUITABLE
19	161183			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
20	161184			34	38.62	0.375	5213.47													SUITABLE	SUITABLE
21	161185			34	38.45	0.375	5189.21													SUITABLE	SUITABLE
22	161186			34	38.70	0.375	5224.49													SUITABLE	SUITABLE
23	161187			34	38.22	0.375	5158.33													SUITABLE	SUITABLE
24	161188			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
25	161189			34	38.42	0.375	5184.60													SUITABLE	SUITABLE
26	161190			34	38.42	0.375	5184.60													SUITABLE	SUITABLE
27	161191			34	38.65	0.375	5217.88													SUITABLE	SUITABLE
28	161192			34	38.42	0.375	5184.60													SUITABLE	SUITABLE
29	161193			34	38.39	0.375	5180.39													SUITABLE	SUITABLE
30	161194			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
31	161195			34	38.68	0.375	5222.29													SUITABLE	SUITABLE
32	161196			34	38.45	0.375	5189.21													SUITABLE	SUITABLE
33	161756			34	37.57	0.375	5070.12													SUITABLE	SUITABLE

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Fax: +40 236 407 635
http://www.ispat.com; e-mail: office@sidex.ro

TUV ISO 9001

INSPECTION CERTIFICATE: 4902250295

ACCORDING TO: EN 10204/3.1.B

CUSTOMER:

PRODUCT: LSAW CARBON STEEL LINE PIPE

EXTERNAL ASPECT: SUITABLE
DATE: 07-Sep-04

ORDER: 900024/50000881

STANDARD: API 5L 42EDITION;API 2B FOR DIMENSIONAL TOLERANCES;STRAIGHTNESS MAX.0.551";NACE MR 0175 FOR HARDNESS

DELIVERY STATE: EXPANDATED, BEVELLED ENDS AT 30° ; V=1,0
LOT:

CHEMICAL ANALYSIS, %

	NO.HEAT	C	MN	SI	P	S	AL	CU	CR	NI	V	MO	TI	NB	B	AS	N2 BELLOW	H2	ZR
1	926272	0.16	1.20	0.29	0.024	0.010	0.027	0.010	0.020	0.010	0.04		0.011	0.033					

"THIS DOCUMENT CERTIFIES THAT THE MATERIALS ABOVE INDICATED HAVE BEEN INSPECTED IN ACCORDANCE WITH THE SPECIFICATIONS MENTIONED AND NACE 0175 FOR HARDNESS."

INSPECTOR NAME
MARIANA LUNGU

CONTROLUL CALITATII ISPAT SIDEX S.A. 8 GALATI-ROMANIA

Submittal Data
FROM
Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 9, 2005 Number of Copies: 8

Submittal Number: 02633-009-A

Specification Section Number 02633-009-A

Item Submitted: 40" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: February 9, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

MWH

NO EXCEPTIONS TAKEN	AMEND-RESUBMIT
MAKE CORRECTIONS NOTED	REJECTED – RESUBMIT

REVIEWED BY: _____ DATE: 2/11/05

RECOMMENDED BY: _____ DATE: 2/22/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS' SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES; COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

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Fax: +40 236 407 635
http://www.tepat.com; e-mail: office@sidex.ro

TÜV

INSPECTION CERTIFICATE: 4902250212

ACCORDING TO: EN 10204/3.1.B

CUSTOMER:

PRODUCT: LSAW CARBON STEEL LINE PIPE

EXTERNAL ASPECT: SUITABLE

DATE 9-Sep-04

ORDER: 900024/50000881

STANDARD: API 5L 42EDITION;API 2B FOR DIMENSIONAL TOLERANCES;STRAIGHTNESS MAX 0.551";NACE MR 0175 FOR HARDNESS

DELIVERY STATE: EXPANDATED, BEVELLED ENDS AT 30° ; V=1,0

LOT:

TOTAL NO OF PIECES 39 TOTAL WEIGHT 238362 lbs

MECHANICAL TESTS

NO. CRT	NO PIPE	NO HEAT	QUALITY	DIAMETER [inch]	LENGTH [foot]	THICKNESS [inch]	WEIGHT [lbs]	NO. TEST	DIRECTION	DIM OF SPECIMEN B[inch] BASE MATERIAL	RM[psi] BASE MATERIAL	RE[psi] BASE MATERIAL	A[%] BASE MATERIAL	RE/ RM [%]	DIM OF SPECIMENS [inch] WELD	RM [psi] WELD	HARDNESS HV 10 FOR BASE MATERIAL	GUIDED BEND TEST TRANS	IMPACT TEST NOTCH FOR BASE MATERIAL	HYDROSTATIC TEST 580 psi/10SEC	X RAY INVESTIGATION ACC.ISO WIRE4%
1	160890	925914	X 52- X42:Gr.B PSL1	40	38.68	0.375	6150.74	160885	TRANS	1.49x0.39	88200	64424	30	0.73	1.50x0.38	89888	183	SUITABLE		SUITABLE	SUITABLE
2	160891			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
3	160883			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
4	160884			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
5	160885			40	37.20	0.375	5914.77													SUITABLE	SUITABLE
6	160886			40	38.52	0.375	6124.28													SUITABLE	SUITABLE
7	160887			40	38.32	0.375	6093.40													SUITABLE	SUITABLE
8	160888			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
9	160889			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
10	160892			40	37.96	0.375	6036.06													SUITABLE	SUITABLE
11	160910			40	38.16	0.375	6066.94													SUITABLE	SUITABLE
12	160911			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
13	160912			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
14	160913			40	38.42	0.375	6108.84													SUITABLE	SUITABLE
15	160935			40	38.42	0.375	6108.84													SUITABLE	SUITABLE
16	160936			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
17	160937			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
18	160938			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
19	161083	926273		40	38.62	0.375	6139.72	161086	TRANS.	1.49x0.39	82028	61044	34	0.744	1.50x0.39	84126	179	SUITABLE		SUITABLE	SUITABLE
20	161084			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
21	161085			40	38.12	0.375	6060.32													SUITABLE	SUITABLE
22	161086			40	37.14	0.375	5905.95													SUITABLE	SUITABLE
23	161087			40	38.52	0.375	6124.28													SUITABLE	SUITABLE
24	161088			40	38.39	0.375	6102.23													SUITABLE	SUITABLE
25	161089			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
26	161090			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
27	161091			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
28	161092			40	38.35	0.375	6097.81													SUITABLE	SUITABLE
29	161093			40	38.09	0.375	6055.91													SUITABLE	SUITABLE
30	161094			40	38.58	0.375	6135.31													SUITABLE	SUITABLE
31	161095			40	38.32	0.375	6093.40													SUITABLE	SUITABLE
32	161109			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
33	161110			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
34	161111			40	38.16	0.375	6066.94													SUITABLE	SUITABLE
35	161112			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
36	161113			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
37	161114			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
38	161115			40	38.06	0.375	6051.50													SUITABLE	SUITABLE
39	161116			40	38.65	0.375	6144.13													SUITABLE	SUITABLE

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http://www.ispat.com; e-mail: office@sidex.ro

INSPECTION CERTIFICATE: 4902250212

ACCORDING TO: EN 10204/3.1.B

CUSTOMER:

PRODUCT: LSAW CARBON STEEL LINE PIPE

EXTERNAL ASPECT: SUITABLE
DATE: 09-Sep-04

ORDER: 900024/50000881

STANDARD: API 5L 42EDITION;API 2B FOR DIMENSIONAL TOLERANCES;STRAIGHTNESS MAX.0.551";NACE MR 0175 FOR HARDNESS

DELIVERY STATE: EXPANDATED, BEVELLED ENDS AT 30° ; V=1,0

LOT:

CHEMICAL ANALYSIS, %

	NO.HEAT	C	MN	SI	P	S	AL	CU	CR	NI	V	MO	TI	NB	B	AS	N2 bellow	H2	ZR
1	925914	0.14	1.18	0.36	0.024	0.013	0.095	0.010	0.020	0.010	0.04		0.018	0.043					
2	926273	0.16	1.14	0.30	0.017	0.008	0.030	0.020	0.020	0.010	0.04			0.03					

"THIS DOCUMENT CERTIFIES THAT THE MATERIALS ABOVE INDICATED HAVE BEEN INSPECTED IN ACCORDANCE WITH THE SPECIFICATIONS MENTIONED AND NACE 0175 FOR HARDNESS."

INSPECTOR NAME
MARIANA LUNGU

CONTROLUL CALITATII
ISPAT SIDEX S.A.
8
GALATI - ROMANIA

Submittal Data
FROM

Youngquist Brothers, Inc.

15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: March 4, 2005 Number of Copies: 8

Submittal Number: 02633-009-B

Specification Section Number 02633-009-B

Item Submitted: ADDITIONAL 40" MILL CERTS

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Marybeth Rios

Transmittal Date: March 4, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

MWH

NO EXCEPTIONS TAKEN	✓	AMEND-RESUBMIT	
MAKE CORRECTIONS NOTED		REJECTED – RESUBMIT	

REVIEWED BY: [signature] DATE: 3/10/05

RECOMMENDED BY: _____ DATE: _____

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES, COORDINATING WORK WITH OTHER TRADES; AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 02633-0096
Transmittal No. # _____ Date: 3/4/05
Signature _____

IŞPAT SIDEX
Member of THE LNM GROUP
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http://www.ispat.com; e-mail: office@sidex.ro

INSPECTION CERTIFICATE: 4902250212

ACCORDING TO: EN 10204/3.1.B

CUSTOMER:

PRODUCT: LSAW CARBON STEEL LINE PIPE

EXTERNAL ASPECT: SUITABLE

DATE 9-Sep-04

ORDER: 900024/60000881

STANDARD: API 5L 42EDITION;API 2B FOR DIMENSIONAL TOLERANCES;STRAIGHTNESS MAX.0.551";NACE MR 0175 FOR HARDNESS

DELIVERY STATE: EXPANDATED, BEVELLED ENDS AT 30° ; Y=1.0

LOT:

TOTAL NO.OF PIECES 39 TOTAL WEIGHT 238382 lbs

MECHANICAL TESTS

NO. CRT	NO.PIPE	NO. HEAT	QUALITY	DIAMETER [inch]	LENGTH [feet]	THICKNESS [inch]	WEIGHT [lbs.]	NO. TEST	DIRECTION	DIM.OF SPECIMEN [inch] BASE MATERIAL	Rm[psi] BASE MATERIAL	Re[psi] BASE MATERIAL	A[%] BASE MATERIAL	Re/ Rm [%]	DIM.OF SPECIMENS [inch] WELD	Rm [psi] WELD	HARDNESS HV 10 FOR BASE MATERIAL	GUIDED BEND TEST TRANS.	IMPACT TEST NOTCH FOR BASE MATERIAL	HYDROSTATIC TEST 850 psi/105SEC	X RAY INVESTIGATION ACC.ISO WIRE4%
1	160890	926914	X 52- X42-Cr.B PSL1	40	38.68	0.375	6150.74	160885	TRANS.	1.49x0.39	88200	64424	30	0.73	1.50x0.39	80888	183	SUITABLE		SUITABLE	SUITABLE
2	160891			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
3	160883			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
4	160884			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
5	160885			40	37.20	0.375	5914.77													SUITABLE	SUITABLE
6	160886			40	38.52	0.375	6124.28													SUITABLE	SUITABLE
7	160887			40	38.32	0.375	6093.40													SUITABLE	SUITABLE
8	160888			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
9	160889			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
10	160892			40	37.96	0.375	6036.06													SUITABLE	SUITABLE
11	160910			40	38.16	0.375	6066.94													SUITABLE	SUITABLE
12	160911			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
13	160912			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
14	160913			40	38.42	0.375	6108.84													SUITABLE	SUITABLE
15	160935			40	38.42	0.375	6108.84													SUITABLE	SUITABLE
16	160936			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
17	160937			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
18	160938			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
19	161083	926273		40	38.62	0.375	6139.72	161086	TRANS.	1.49x0.39	82028	61044	34	0.744	1.50x0.39	84126	179	SUITABLE		SUITABLE	SUITABLE
20	161084			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
21	161085			40	38.12	0.375	6060.32													SUITABLE	SUITABLE
22	161086			40	37.14	0.375	5905.95													SUITABLE	SUITABLE
23	161087			40	38.52	0.375	6124.28													SUITABLE	SUITABLE
24	161088			40	38.39	0.375	6102.23													SUITABLE	SUITABLE
25	161089			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
26	161090			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
27	161091			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
28	161092			40	38.95	0.375	6097.61													SUITABLE	SUITABLE
29	161093			40	38.09	0.375	6055.91													SUITABLE	SUITABLE
30	161094			40	38.58	0.375	6135.31													SUITABLE	SUITABLE
31	161095			40	38.32	0.375	6093.40													SUITABLE	SUITABLE
32	161109			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
33	161110			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
34	161111			40	38.18	0.375	6069.94													SUITABLE	SUITABLE
35	161112			40	38.62	0.375	6139.72													SUITABLE	SUITABLE
36	161113			40	38.65	0.375	6144.13													SUITABLE	SUITABLE
37	161114			40	38.68	0.375	6150.74													SUITABLE	SUITABLE
38	161115			40	38.06	0.375	6051.50													SUITABLE	SUITABLE
39	161116			40	38.65	0.375	6144.13													SUITABLE	SUITABLE

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http://www.ispat.com; e-mail: office@sidex.ro

INSPECTION CERTIFICATE: 4902250212

ACCORDING TO: EN 10204/3.1.B

CUSTOMER:

PRODUCT: LSAW CARBON STEEL LINE PIPE

EXTERNAL ASPECT: SUITABLE
DATE: 09-Sep-04

ORDER: 900024/50000881

STANDARD: API 5L 42EDITION;API 2B FOR DIMENSIONAL TOLERANCES;STRAIGHTNESS MAX.0.551";NACE MR 0175 FOR HARDNESS

DELIVERY STATE: EXPANDATED, BEVELLED ENDS AT 30° ; V=1,0
LOT:

CHEMICAL ANALYSIS, %

	NO.HEAT	C	MN	SI	P	S	AL	CU	CR	NI	V	MO	TI	NB	B	AS	N2 bellow	H2	ZR
1	925914	0.14	1.18	0.36	0.024	0.013	0.095	0.010	0.020	0.010	0.04		0.018	0.043					
2	926273	0.16	1.14	0.30	0.017	0.008	0.030	0.020	0.020	0.010	0.04			0.03					

"THIS DOCUMENT CERTIFIES THAT THE MATERIALS ABOVE INDICATED HAVE BEEN INSPECTED IN ACCORDANCE WITH THE SPECIFICATIONS MENTIONED AND NACE 0175 FOR HARDNESS."

INSPECTOR NAME
MARIANA LUNGU

CONTROLUL CALITATII ISPAT SIDEX S.A. 8 GALATI - ROMANIA

Submittal Data
FROM

Youngquist Brothers, Inc.
15465 Pine Ridge Rd.
Ft. Myers, FL. 33908
239-489-4444 Fax: 239-489-4545

Project

Three Oaks Waste Water Treatment
Class 1 Injection Well System

I have reviewed this submittal for general conformance with the design concepts and contract documents. Generally no conflict with materials or dimensions will arise from the approval of this shop drawing submittal.

Date: February 8, 2005 Number of Copies: 8

Submittal Number: 02633-029-A

Specification Section Number 02633-029-A

Item Submitted: 54" Mill Certs

New Submittal : X Resubmitted: ____

Youngquist Brothers, Inc. Representative:

Marybeth Rios

Transmittal Date: February 8, 2005

☐	Approved
☐	Approved with changes
☐	Rejected, Revise & Resubmit
☐	Not Reviewed

By: _____

Firm: _____

Date: _____

M W H

NO EXCEPTIONS TAKEN | SEND RESUBMIT

MAKE CORRECTIONS NOTED | REJECTED – RESUBMIT

REVIEWED BY: [signature] DATE: 2/23/05

RECOMMENDED BY: [signature] DATE: 2/23/05

CORRECTIONS OR COMMENTS MADE ON CONTRACTORS SHOP DRAWINGS DURING THIS REVIEW DO NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH CONTRACT DRAWINGS AND SPECIFICATIONS. THIS SHOP DRAWING HAS BEEN REVIEWED FOR CONFORMANCE WITH THE DESIGN CONCEPT AND GENERAL COMPLIANCE WITH THE CONTRACT DOCUMENTS ONLY. CONTRACTOR IS RESPONSIBLE FOR CONFIRMING AND CORRELATING ALL QUANTITIES AND DIMENSIONS; FABRICATION PROCESSES AND TECHNIQUES; COORDINATING WORK WITH OTHER TRADES AND SATISFACTORY AND SAFE PERFORMANCE OF THE WORK.

BERGROHR-GMBH SIEGEN

Abnahmeprüfzeugnis

Works test certificate
Certificat de contrôle par l'usine
EN 10204-3.1B

Zeugnis-Nr.: / Certification-No.: 788/00

Werks-Nr.: / Works No.: / Référence usine: A-2000-02302

Besteller / Purchaser / Client

Bestell-Nr.: / P.O. No.: / No. de Commande: 5763.12.00 dated 05.12.2000

Erzeugnisform: UP längsnahtgeschweißte Stahlrohre
Description of product: submerged-arc welded steel pipes
Description du produit: tubes d'acier soudés à l'arc immergé

Anforderungen: / Requirements: / Exigences: API Spec. 5L (01-2000)

Herstellerzeichen: / Trade mark: / Signe du constructeur: BS

Abnahmeprüfstempel: / Quality control stamp: / Poincon de réception:

Werkstoff: / Quality: / Nuance: API Spec. 5L (01-2000) GRADE B / X42 PSL 2

Pos-Nr. Item no. Poste	Stück Quantity Nombre	Abmessung Dimension: Durchmesser Diameter mm	Dicke Thickness Epaisseur mm	Länge Length Longeur mm	Wasserdruckprüfung Hydro test Essai hydrostatic: Druck Pressure Pression (bar)	Zeit Time Duree (sec)	Schmelze-Nr. Heat No. No de coulee	Probe-Nr. Sample No. No. d'essai	Pos.-Nr. Item. No.
001	51 ✓	1.372,0 (54")	9,50 (.375)	12.000 ✓	36	10	35146	817	NEW ORLEANS
							35148	815	P.O. 208870
							35154	816	

Plate certificate:
8610314081, 8610314818, 8610314887, 8610315824, 8610314522

Beschichtung: / Coating: / Revêtement: -

Ultraschallprüfung: / Ultrasonic test: / Contrôle par ultrasion: long. welds 100% acc. to API 5 L

Röntgenprüfung: / x-ray test: / Contrôle radiographique: each end 250 mm acc. to API 5L

Magnetpulverprüfung: / Magnetic particle inspection: / Contrôle magnetoscopique: -

Besichtigung und Ausmessung ohne Beanstandung.
Results of visual examination an measurement: satisfactory
Résultat de l'examen visuel et dimensionel: satisfaisant.

Es wird bestätigt, dass die Lieferung den Anforderungen der oben angeführten Lieferbedingungen entspricht.
We hereby certify that the above mentioned materials have been delivered in accordance with the terms of order.
Nous attestons que les produits livés sont conformes aux stipulations de la commande.

BERGROHR GMBH SIEGEN
Der Werkssachverständige / Works inspector / L'expert d'usine

Siegen, 13.03.2001

YOUNGQUIST BROTHERS, INC.
Has Reviewed this Shop Drawing/Submittal
YBI/Section No. # 08633-029-A
Transmittal No. # 11 Date: 2/8/05
Signature

BERGROHR GMBH SIEGEN

Attachment to works certification

Anlage zum Abnahmeprüfzeugnis

Annex to certificate of compliance

Document No.	788/00
Seite / Page	von / of
Rev.	Date:

Order No.: 02302 Item No.: 001

Material: API Spec. 5L GRADE B / X42 PSL 2

Tensile test / Zugversuch / Essai de traction

Sample No. Probe Nr. No. d'essai	M S SS WEZ 1)	Yield point Streckgrenze Limite élastique N/mm²	Tensile strenght Zugfestigkeit Résistance N/mm2	Re / Rm Streckgrenzen-verhalten %	Gauge length Meßlänge Longuer d.b. mm	Elongation Dehnung Allongement %	Position Lage Position	Hardness test Härteprüfung HV 10
815	M	344	467	-	50	48	transvers	
815	S	-	513	-	-	-	transvers	
816	M	327	471	-	50	46	transvers	
816	S	-	504	-	-	-	transvers	
817	M	333	463	-	50	46	transvers	
817	S	-	481	-	-	-	transvers	

Impact test / Kerbschlagbiegeversuch / Essai de résilience

Sample No.		Sample position Entnahmeort der Probe Position d'essai	Type Form Type	Position Lage Position	Test temp. Prüftemp. Temp. d'essai °C	Impact energy Kerbschlagarbeit Résilience 1 J	2 J	3 J	Shear area Scherbruchanteil Rupture ductile %	%	%
815	M	-	Charpy-V	transvers	0	297	298	300			
816	M	-	Charpy-V	transvers	0	298	300	295			
816	S	-	Charpy-V	transvers	0	102	116	93			
817	M	-	Charpy-V	transvers	0	291	295	300			
817	S	-	Charpy-V	transvers	0	109	108	109			

PROCEDURE QUALIFICATION - UP - LONGITUDINAL WELD

DWT-Test

Heat No. Schmelze-Nr. No. d'essai	Test temp. Prüftemperatur Temp. d'essai °C	Shear area Scherbruchanteil Rupture ductile %

1) M: Material/Grundwerkstoff/Matériel
S: Weld/Schweißnaht/Soudre
SS: Fusion line/Schmelzlinie/Ligne de fusion
WEZ: HAZ/Wärmeeinflußzone/ZAT

Results of bend test: satisfactory
Das Ergebnis des Faltversuches entspricht der Vorschrift.
Resultat de l'essai de pliage: satisfaisant.

BERGROHR GMBH SIEGEN	Client's authorized Inspector:	Approved:
Date 13.02.2001	Date	Date
Name H. P. Berle	Name	Name
Signature	Signature	Signature

BERGROHR SIEGEN INSPECT. DEPART.

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204/ISO10474
INSPECTION CERTIFICATE 3-1-B TC EN10204/ISO10474

A02

8610314522 Page: 001 A09/A03

290 =< YS0,6 =< 496 MPA UTS >= 414 MPA E2IN >= 24 % CAL07=YS/UTS (5)
KV T -0,0 C >= 28 J (AVE) KV >= 20 J (IND)

CDC:Conforme au cahier des charges / According specifications (1)
BL:Brut de laminage / As rolled
LN:Laminage normalisant / Normalising forming
A :Revenu / Tempered
TE:Trempé à l'eau / Water quenching
LTC:Laminage à température contrôlée / Thermo-controled forming
TM:Laminage thermo-mécanique / Thermo-mechanical forming
N:Normalisé / Normalised
D:Detentionné / Stress relieved
G:Adouci par recuit / Soft annealed
B03

Sigle du producteur / Trade mark: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Purchaser and/or consignee: RGROHR GMBH 57025 SIEGEN ALLEMAGNE A06

N°commande Courtier/client Broker / Purchaser's order N°: E2000/01992-4700 120026 A07

N° Commande Usine / Work order N°: 232416 A08

Nuances et spécifications techniques / Quality and specifications: 5L-X42-PSL2 API-5L:00 B01

PLAQUES / PLATES B02

Etat de livraison / Delivery condition (1): LN B04

Traitement de référence / Test condition (1): LN B05

Organisme et/ou service de contrôle Inspection: USINE A05

Identification du produit / Product identification		Porte Item	Nombre de pièces / Quantité pièces	Dimensions			Masse unitaire Théorique / Theorical piece weight	Emplacement (2)	Traction / Tensile test											Emplacement (2)	Résilience / Notch thoughtness							
Repère pièce / Plate number	Coulée Brame / Heat Slab			Epaisseur / Thickness	Largeur / Width	Longueur / Length			S (3)	Pos. Z(4)	Type Form	Réf (5)	Temp. °C	RT0,5 YS0,5	RM UTS	A2" E2IN	CAL07				Réf (5)	Type Form	S (3)	Temp. °C	Pos. Z(4)	Valeurs individuelles / Individual values		Moyenne / Average
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C03	C11	C12	C13	<-C14-C29			C80-C89->	C01		C40	C02	C08	C82	<- C42 ->		C43
623484	351547417	03	1	12,70	4275	12050	5136																						
623046	351547501	01	2	10,01	4283	12050	4055																						
623487	351547502	01	2	10,01	4283	12050	4055																						
623488	351547503	01	2	10,01	4283	12050	4055																						
616461	351543401							1	T	P	TPRIS	01		342	456	52	0,75				1	02	KV	T	0,0	PPP	302	304	306	304
615477	351543403							1	T	P	TPRIS	01		329	453	55	0,73				1	02	KV	T	0,0	PPP	304	286	302	297
613053	351543501							1	T	P	TPRIS	01		346	458	54	0,76				1	02	KV	T	0,0	PPP	324	318	308	317
613057	351547501							1	T	P	TPRIS	01		362	469	48	0,77				1	02	KV	T	0,0	PPP	324	178	306	269
Cumul pour la coulée			7				29,4																						
Cumul général			7				29,4																						

QA / QC checked .....

P C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
C C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce / Plate number	N° de coulée / Heat number	* Analyse sur produit / Check analysis																							
		C%	Mn%	P%	S%	Si%	Al%	N i%	C r%	Cu%	Mo%	Nb%	V %	T i%	B %	N %	CAL30	CAL05							
B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C98	C97
	35154	0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
616461	35154	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
615477	35154	0,10	1,10	0,013	0,001	0,25	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,002	0,0002	0,003	0,16	0,00							
613053	35154	0,09	1,10	0,014	0,001	0,25	0,024	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
613057	35154	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Order manufactured in accordance with our QUALITY ASSURANCE manual

Emplacement / Location: T te/Top,) Pied/Bottom, 1/2 Longueur / 1/2 length, X:Divers — C01

(3) Orientation / Direction: L: Long/Longitudinal, T: Travers/Traverse, Z: Travers court/Through thick — C02

(4) Position: C: Coeur/Core sample, F: Peau/Rolled surface, D: 1/3 Epais./Thickness, Q: 1/4 Epais./Thickness, F: 1/5 Epais./Thickness — C62

(5) Meth.steel making: T: Thomas M: Martin E: Electrique/Electric, CC: Coulée continue/Continuous casting, O/Y: Oxygène sur/Basic oxygen — 170/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur à y rapportant.
We certify hereby that the above mentioned products are consistent with the order prescriptions

Contrôle de marquage, d'aspect et de dimensions : satisfaisants. [redacted]
Marking, inspection and measurement : without objection. [redacted] D01 C50 Z01

Date: 06/02/01
Agent/Name

L'agent de réception: HOUSSIN
Name of inspector

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
INSPECTION CERTIFICATE 3-1-B TO EN10204 / ISO10474

A02

8610314522 Page : 002 / FIN
A09/A09

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

(5) CDC:Conforme au cahier des charges / According specifications (1)
BL:Brut de laminage / As rolled
LN:Laminage normalisant / Normalising forming
A :Revenu / Tempered
TE:Trempé à l'eau / Water quenching
LTC:Laminage à température contr lée / Thermo-controled forming
TM:Laminage thermo-mecanique / Thermo-mechanical forming
N:Normalisé / Normalised
D:Detentionné / Stress relieved
Q:Adouci par recuit / Soft annealed
B03

Sigle du producteur / Trade mark
TFK
A04

(1): 241 =< YS0,5 =< 448 MPA UTS >= 414 MPA E2IN >= 29 % CAL07=YS/UTS =< 0,93
(2): KV T -0,0 C >= 25 J (AVE) KV >= 20 J (IND)

Client et/ou destinataire / Purchaser and/or consignee
ERGROHR GMBH
)-57025 SIEGEN ALLEMAGNE
A06

N° commande Courtier/client Broker / Purchaser's order N°
E2000/01992-4700
120026
A07

N° Commande Usine / Work order N°
232416
A08

Nuances et spécifications techniques / Quality and specifications
5L-B-PSL2 API-5L:00
PLAQUES / PLATES
B01 B02

Etat de livraison / Delivery condition (1)
LN
B04

Traitement de référence / Test condition (1)
LN
B05

Organisme et/ou service de contrôle / Inspection
USINE
A05

Identification du produit / Product identification		Poste / Item	Nombre de pièces / Quantity of pieces	Dimensions			Masse unitaire Théorique / Theorical piece weight	Emplacement / Location (2)	Traction / Tensile test										Emplacement / Location (2)	Résilience / Notch thoughtness							
Repère pièce / Plate number	Coulée Brame / Heat-Slab			Epaisseur / Thickness	Largeur / Width	Longueur / Length			S (3)	Pos. Z(4)	Type / Form	Réf (5)	Temp. °C	RT0,5 / YS0,5	RM / UTS	A2" / E2IN	CAL07										
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C03	C11	C12	C13	< C14 C29		C60 C69 >	C01		C40	C02	C08	C62	< C42 >			C43
623484	351547417	03	1	12,70	4275	12050	5135																					
623045	351547501	01	2	10,01	4283	12050	4055																					
623487	351547502	01	2	10,01	4283	12050	4055																					
623488	351547503	01	2	10,01	4283	12050	4055																					
616461	351543401							1	T	P	TPRIS	01		342	456	52	0,75			1	02	KV	T	0,0	PPP	302	304	306	304
615477	351543403							1	T	P	TPRIS	01		329	453	55	0,73			1	02	KV	T	0,0	PPP	304	286	302	297
613053	351543601							1	T	P	TPRIS	01		346	458	54	0,76			1	02	KV	T	0,0	PPP	324	318	308	317
613057	351547601							1	T	P	TPRIS	01		382	469	48	0,77			1	02	KV	T	0,0	PPP	324	176	306	259
Cumul pour la coulée			7				29,4																					
Cumul général			7				29,4																					

QA / QC checked .....

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce / Plate number	N° de coulée / Heat number	* Analyse sur produit / Check analysis																						
		C%	Mn%	P%	S%	Si%	Al%	N i%	C r%	Cu%	Mo%	Nb%	V %	T i%	B %	N %	CAL30	CAL05	C88	C89	C90	C91	C92	C98	C97
B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87							
	35154	0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
616461	35154	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
615477	35154	0,10	1,10	0,018	0,001	0,26	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,002	0,0002	0,003	0,16	0,00							
613053	35154	0,09	1,10	0,014	0,001	0,25	0,024	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
613057	35154	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Order manufactured in accordance with our QUALITY ASSURANCE manual

Emplacement / Location
1 Tête/Top
2 Pied/Bottom
3 1/2 Longueur / 1/2 length
C01

(5) Orientation / Direction
L: Long/Longitudinal
T: Travers/Traverse
Z: Travers court/ Through thick
X:Divers
C02

(4) Position
C: Coeur/Core sample
P: Peau/Rolled surface
D: 1/8 Epais./Thickness
Q: 1/4 Epais./Thickness
F: 1/5 Epais./Thickness
C62

(6) Meth.steel making
T: Thomas M: Martin
E: Electrique/Electric
CC: Coulée continue/ Continuous casting
O/Y: Oxygène pur/ Basic oxygene
C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
We certify hereby that the above mentioned products are consistent with the order prescriptions

Contrôle de marquage, d'aspect et de dimensions : satisfaisants. [illegible]
Marking, inspection and measurement : without objection. [illegible]
D01
C50 Z01

Date
06/02/01
Agent/Name

L'agent de réception
HOUSSIN
Name of inspector

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204/ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NACH EN10204/ISO10474

01: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

BERGROHR SIEGEN
Eing. 12. MRZ 2001

A02

8610315824 Page: 001
Blatt: A09/A03

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A:Revenu / Angelassen
TE:Trempé à l'eau / Gequattet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
B03 G:Adouci par recuit / Weichgegluht

Sigle du producteur
Herstellerzeichen

TFK

A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex: Usiupdk 132281 F
Tél: 03 28 29 30 00
A01

Client et/ou destinataire Besteller/Empfanger	N° commande Courtier/client Kundenbestell Nr	N° Commande Usine Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57026 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120026 A07	232416 A08	5L-X42-PSL2 API-5L:00 PLAQUES/BLECHE B01 B02

Etat de livraison Lieferzustand (1): LN B04
Traitement de référence Bezugszustand (1): LN B05
Organisme et/ou service de contrôle Aussteller: USINE A05

Repère pièce Walznummer B08	Coulée Brame Schmelz-bra. B07	Poste Post B09	Nombre de pièces Stuckzahl B10	Epaisseur Dicke B11	Largeur Breite B12	Longueur Lange B13	Masse unitaire Théorique Theor stuck Gewicht B14	Em-pla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf. (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 < C14-C29		C60-C69 >
634112	351543516	01	1	10,01	4283	12060	4055												
616461	351543401							1	T	P	TPR1S	01		342	456	52	0,75		
613057	351547601							1	T	P	TPR1S	01		362	469	48	0,77		
Cumul pour	la coulée		1				4,0												
Cumul géné	ral		1				4,0												

Résilience / Kerbschlagzahigkeit

Repère pièce Walznummer	Em-pla. (2) C01	Réf. (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles Einzelwerte C42			Moyenne Mitte Werte C43
616461	1	02	KV	T	0,0	PPP	302	304	306	304
613057	1	02	KV	T	0,0	PPP	324	178	306	269

QA/QC
checked ....

P C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
C C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Analyse sur produit / Stuckanalyse

Repère pièce Walznummer B08	N° de coulée Schmelz B07	*	C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V% C82	Ti% C83	B% C84	N% C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35154		0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
616461	35154	1	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
613057	35154	1	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgefuhrt gemass Vorschiften unseres Qualitats-Sicherungs-Heftes

(1) Emplacement / Probenentnahmeort
T: Tête/Kopf
P: Pied/Fuss
M: 1/2 Longueur 1/2 lange
X: Divers C01

(3) Orientation / Probenrichtung
L: Long/Langs
T: Travers/Quer
Z: Travers court/Senkrecht C02

(4) Position
C: Coeur/Kernprobe
P: Peau/Walzflache
D: 1/3 Epais./Dicke
Q: 1/4 Epais./Dicke
F: 1/5 Epais./Dicke C62

(6) Erschmelzungsverfahren
T: Thomas M: Martin
E: Electrique/Elektrofen
CC: Coulée continue/Strangus
O/Y: Oxygène pur/Sauerstoff aufblas C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contrôle de marquage, d'aspect et de dimensions: satisfaisants.
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01 C50

Date/Datum 02/03/01
Agent/Name Z01

Agent de Réception HOUSSIN
Der Werksachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NACH EN10204 / ISO10474

A02

8610315824 Page: 002 / FIN Blatt: A09/A03

INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk.132281 F
Tél : 03 28 29 30 00
A01

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettat
LTC:Laminé à température contr lée/Warme beban bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewalts
N:Normalise / Normalisierend gewalts
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht
B03

Sigle du producteur / Herstellerzeichen: TFK A04

Client et/ou destinataire / Besteller/Empfanger	N°commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte	Etat de livraison / Lieferzustand (1)	Organisme et/ou service de contr le / Aussteller
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120026 A07	232416 A08	5L-B-PSL2 API-5L:00 PLAQUES / BLECHE B01 B02	LN B04 Traitement de référence / Bezugszustand (1): LN B05	U S I N E A05

Repère pièce Walznummer B08	Coulée Brame Schmelz-bra. B07	Poste Post B09	Nombre de pièces Stuckzahl B10	Epaisseur Dicke B11	Largeur Breite B12	Longueur Lange B13	Masse unitaire Théorique Theor stuck Gewicht B14	Empl. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29	C60-C89->
634112	351543516	01	1	10,01	4283	12050	4055											
616461	351543401							1	T	P	TPRIS	01		342	456	52	0,75	
613057	351547601							1	T	P	TPRIS	01		362	469	48	0,77	
Cumul pour	la coulée		1				4,0											
Cumul géné	ral		1				4,0											

Résilience / Kerbschlagzaehigkeit

Repère pièce	Empl. (2) C01	Réf (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles Einzelwerte <- C42 ->			Moyenne Mitte Werte C43
616461	1	02	KV	T	0,0	PPP	302	304	306	304
613057	1	02	KV	T	0,0	PPP	324	178	306	269

QA / QC checked

P C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30 = PCM = C + SI/30 + (MN + CR + CU)/20 + NI/60 + MO/15 + V/10 + 5B =< 0,25 CAL05 = NB + V + TI =< 0,15

C C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30 = PCM = C + SI/30 + (MN + CR + CU)/20 + NI/60 + MO/15 + V/10 + 5B =< 0,25 CAL05 = NB + V + TI =< 0,15

Repère pièce Walznummer B08	N° de coulée Schmelz B07	*	C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35154		0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
616461	35154	1	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
613057	35154	1	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

Analyse sur produit / Stuckanalyse

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgefuhrt gemass Vorschiften unseres Qualitats-Sicherungs-Heftes

(1) Emplacement / Probenentnahmeort: T: Tete/Kopf; P: Pied/Fuss; 1/2 Longueur 1/2 lange; X: Divers C01

(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/ Senkrecht C02

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/ Strangguss; O/Y: Oxygène pur/ Sauerstoff aufblas C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions : satisfaisants. [illegible]
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung
[illegible] D01 C50

Date/Datum: 02/03/01
Agent/Name Z01

Agent de Réception: HOUSSIN
Der Werksachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204/ISO10474

INSPECTION CERT CATE 3-1-B TO EN10204/ISO10474

8610314887 Page: 001

01: 290 =< YS0,5 =< 495 MPA UTS >= 414 MPA E2IN >= 24 % CAL07=YS/UTS
02: KV T -0,0 C >= 26 J (AVE) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / According specifications (1)
BL:Brut de laminage / As rolled
LN:Laminage normalisant / Normalising forming
A:Revenu / Tempered
TE:Trempé à l'eau / Water quenching
LTC:Laminage à température contrôlée / Thermo-controled forming
TM:Laminage thermo-mecanique / Thermo-mechanical forming
N:Normalisé / Normalised
D:Detentionné / Stress relieved
G:Adouci par recuit / Soft annealed

Sigle du producteur / Trade mark: TFK

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00

Client et/ou destinataire / Purchaser and/or consignee:
BERGROHR GMBH
D-57025 SIEGEN ALLEMAGNE

N°commande Courtier/client Broker / Purchaser's order N°: E2000/01892-4700 120026

N° Commande Usine / Work order N°: 232416

Nuances et spécifications techniques / Quality and specifications: 5L-X42-PSL2 API-5L:00

Etat de livraison / Delivery condition: LN

Traitement de référence / Test condition: LN

Organisme et/ou service de contrôle / Inspection: USINE

PLAQUES/PLATES

Identification du produit / Product identification		Poste Item	Nombre de pièces Quantité de pièces	Dimensions			Masse unitaire Théorique pièce / Theorical piece weight	Emplacement (2)	Traction / Tensile test											Emplacement (2)	Résilience / Notch thoughtness							
Repère pièce / Plate number	Coulée Brame / Heat-Slab			Epaisseur / Thickness	Largeur / Width	Longueur / Length			S (3)	Pos Z(4)	Type / Form	Réf (5)	Temp °C	RT0,5 YS0,5	RM UTS	A2" E2IN	CAL07 <-C14-C29		C60-C69->		Réf (5)	Type / Form	B (3)	Temp °C	Pos Z(4)	Valeurs individuelles / Individual values <-- C42 -->			Moyenne / Average
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C03	C11	C12	C13				C01		C40	C02	C08	C62				C43
617449	0351466101	02	1	10,01	4283	12250	4123																						
617027	0351462219							1	T	P	TPR1S	01		344	458	44	0,75			1	02	KV	T	0,0	PPP	298	300	302	300
617026	0351462301							1	T	P	TPR1S	01		342	481	46	0,74			1	02	KV	T	0,0	PPP	304	292	290	295
Cumul pour la coulée			1				4,																						
Cumul général			1				4,																						

QA / QC
checked .....

C =< 0,18 MN =< 1,50 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
C =< 0,18 MN =< 1,50 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce / Plate number	N° de coulée / Heat number	Analyse sur produit / Check analysis C%	Mn%	P%	S%	Si%	Al%	N i%	C r%	Cu%	Mo%	Nb%	V %	T i%	B %	N %	CAL30	CAL05	C87	C88	C89	C90	C91	C92	C98	C97
B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88		C89	C90	C91	C92	C98	C97
	35146	0,10	1,08	0,013	0,001	0,25	0,028	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00								
617027	35146	0,10	1,07	0,014	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00								
617026	35146	0,10	1,07	0,013	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00								

(5) Orientation / Direction
L: Long/Longitudinal
T: Travers/Traverse
Z: Travers court/Through thick
X:Divers

(4) Position
C: Coeur/Core sample
P: Peau/Rolled surface
D: 1/8 Epais./Thickness
Q: 1/4 Epais./Thickness
F: 1/8 Epais./Thickness

(6) Meth.steel making
T: Thomas M: Martin
E: Electrique/Electric
CC: Coulée continue/Continuous casting
O/Y: Oxygène pur/Basic oxygene

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
We certify hereby that the above mentioned products are consistent with the order prescriptions

Contrôle de marquage, d'aspect et de dimensions : satisfaisants. Marking, inspection and measurament : without objection.

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Order manufactured in accordance with our QUALITY ASSURANCE manual

Date 13/02/01

Agent/Name

L'agent de réception HOUSSIN

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA[illegible] EN10204 / ISO10474

8610314818 — Page: 001 / Blatt: — A02 — A09/A03

01: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
02: KV T -0,0 C >= 28 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des cha[illegible] / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewalzt
N:Normalise / Normalisierend gewalzt
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht
B03

Sigle du producteur / Herstellerzeichen: TFK — A04

GTS INDUSTRIES

Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger (A06)	N°commande Courtier/client / Kundenbestell Nr (A07)	N° Commande Usine / Werksauftrags Nr (A08)	Nuances et spécifications techniques / Stahlsorte (B01, B02)
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE	E2000/01992-4700 120026	232416	SL-X42-PSL2 API-5L:00 PLAQUES/BLECHE

Etat de livraison / Lieferzustand (1): LN — B04
Traitement de référence / Bezugszustand (1): LN — B05
Organisme et/ou service de contr le / Aussteller: U S I N E — A05

Identification du produit / Erzeugnis benennung — Traction / Zugversuch

Repère pièce / Walznummer B08	Coulée Brame / Schmelz-bra. B07	Poste / Post B09	Nombre de pièces / Stuckzahl B10	Epaisseur / Dicke B11	Largeur / Breite B12	Longueur / Lange B13	Masse unitaire Théorique / Theor stuck Gewicht B14	Empla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29		C60-C69->
617449	351468101	01	1	10,01	4283	12050	4055												
621463	351468117	01	1	10,01	4283	12050	4055												
618462	351466319	01	2	10,01	4283	12050	4055												
617027	351462219							1	T	P	TPRIS	01		344	458	44	0,75		
617026	351462301							1	T	P	TPRIS	01		342	451	48	0,74		
Cumul pour	la coulée		4				16,2												

Résilience / Kerbschlagzaehigkeit

Repère pièce	Empla. (2) C01	Réf. (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles / Einzelwerte <- C42 ->			Moyenne / Mitte Werte C43
617027	1	02	KV	T	0,0	PPP	298	300	302	300
617026	1	02	KV	T	0,0	PPP	304	292	290	295

QA/QC checked .... [signature]

P C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
C C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Analyse sur produit / Stuckanalyse

Repère pièce / Walznummer B08	N° de coulée / Schmelz B07	*	C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35146		0,10	1,08	0,013	0,001	0,25	0,028	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
617027	35146	1	0,10	1,07	0,014	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00							
617026	35146	1	0,10	1,07	0,013	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschriften unseres Qualitats-Sicherungs-Heftes

(2) Emplacement / Probenentnahmeort: [illegible]e/Kopf; Pied/Fuss; 1/2 Longueur / 1/2 lange; X:Divers — C01

(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/Senkrecht — C02

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke — C62

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas — C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions : satisfaisants. [illegible]
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung
[illegible] — D01 — C50

Date/Datum: 12/02/01
Agent/Name — Z01
Agent de Réception: HOUSSIN [signature]
Der Werkssachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

8610314818 A02 — Page : 002 Blatt : A09/A03

1: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
2: KV T -0,0 C >= 28 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A:Revenu / Angelassen
TE:Trempé à l'eau / Gequettat
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
B03 G:Adouci par recuit / Weichgegluht

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00 A01

Client et/ou destinataire / Besteller/Empfanger	N° commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte	Etat de livraison / Lieferzustand (1)	Organisme et/ou service de contr le / Aussteller
ERGROHR GMBH -57025 SIEGEN ALLEMAGHE A06	E2000/01992-4700 120028 A07	232416 A08	5L-X42-PSL2 API-5L:00 PLAQUES / BLECHE B01 B02	LN B04 Traitement de référence / Bezugszustand (1): LN B05	U S I N E A05

Repère pièce Walznummer	Coulée Brame Schmelz-bra.	Poste Post	Nombre de pièces Stuckzahl	Epaisseur Dicke	Largeur Breite	Longueur Lange	Masse unitaire Théorique Theor stuck Gewicht	Empla. (2)	S (3)	Pos. Z(4)	Type Form	Réf (5)	Temp °C	RT0,5 S0,5	RM Z	A2" A2"	CAL07			Empla. (2)	Réf (5)	Type Form	S (3)	Temp. °C	Pos. Z(4)	Valeurs individuelles Einzelwerte			Moyenne Mitte Werte
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C03	C11	C12	C13	<-C14-C29		C60-C69->	C01		C40	C02	C06	C63	<-- C42 -->			C43
623046	351547519	01	2	10,01	4283	12060	4055																						
616461	351543401							1	T	P	TPRIS	01		342	456	52	0,75			1	02	KV	T	0,0	PPP	302	304	306	304
613057	351547601							1	T	P	TPRIS	01		362	469	48	0,77			1	02	KV	T	0,0	PPP	324	178	306	269
Cumul pour	la coulée		2				8,1																						
Cumul général			6				24,3																						

Traction / Zugversuch — Résilience / Kerbschlagzaehigkeit

QA/QC checked ....

P C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
C C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Analyse sur produit / Stuckanalyse

Repère pièce Walznummer	N° de coulée Schmelz	*	C%	Mn%	P%	S%	Si%	Al%	Ni%	Cr%	Cu%	Mo%	Nb%	V %	Ti%	B %	N %	CAL30	CAL05							
B08	B07		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C96	C97
	35154		0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
616461	35154	1	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
613057	35154	1	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschriften unseres Qualitats-Sicherungs-Heftes

(2) Emplacement / Probeentnahmeort: T Tête/Kopf; P Pied/Fuss; 1/2 Longueur 1/2 lange; X:Divers C01
(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/Senkrecht C02
(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62
(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas 10/95

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen
Contr le de marquage, d'aspect et de dimensions : satisfaisants. D01
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung C50

Date/Datum: 12/02/01 — Agent/Name Z01 — Agent de Réception: HOUSSIN — Der Werkssachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NACH EN10204 / ISO10474

A02 | 8610314818 | Page: 003 Blatt: | A09/A03

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93
02: KV T -0,0 C >= 25 J (MOY) KV >= 20 J (IND)

(5) CDC: Conforme au cahier des charges / Laut den spezifikationen (1)
BL: Brut de laminage / Unbehandelt
LN: Laminage normalisant / Normalisiert
A: Revenu / Angelassen
TE: Trempé à l'eau / Gequettat
LTC: Laminé à température contrôlée / Warme behan bedingungen
TM: Laminage thermo-mecanique / Thermomechan gewalzt
N: Normalise / Normalisierand gewalzt
D: Detentionne / Spannungsarm gegluht
B03 G: Adouci par recuit / Weichgegluht

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger	N° commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte	Etat de livraison / Lieferzustand (1)	Organisme et/ou service de contrôle / Aussteller
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120025 A07	232415 A08	5L-B-PSL2 API-5L:00 PLAQUES / BLECHE B01 B02	LN B04 Traitement de référence / Bezugszustand (1): LN B05	U S I N E A05

Repère pièce / Walznummer B08	Coulée Brame / Schmels-brs. B07	Poste / Post B09	Nombre de pièces / Stuckzahl B10	Epaisseur / Dicke B11	Largeur / Breite B12	Longueur / Lange B13	Masse unitaire Théorique / Theor stuck Gewicht B14
617449	351466101	01	1	10,01	4283	12050	4055
621483	351466117	01	1	10,01	4283	12050	4055
618462	351466319	01	2	10,01	4283	12050	4055
617027	351462210						
617026	351462301						
Cumul pour	la coulée		4				16,2

Traction / Zugversuch

Repère pièce / Walznummer B08	Empla. / Empla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf. (5)	Temp. °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 < C14-C29		C60-C69->
617027	1	T	P	TPRIS	01		344	458	44	0,75		
617026	1	T	P	TPRIS	01		342	461	46	0,74		

Résilience / Kerbschlagzaehigkeit

Repère pièce / Walznummer B08	Empla. / Empla. (2) C01	Réf. (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles / Einzelwerte <- C42 ->			Moyenne / Mittelwerte C43
617027	1	02	KV	T	0,0	PPP	298	300	302	300
617026	1	02	KV	T	0,0	PPP	304	292	290	295

QA/QC checked ....

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM = C + SI/30 + (MN + CR + CU)/20 + NI/60 + MO/15 + V/10 + 5B =< 0,25 CAL05= NB + V + TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM = C + SI/30 + (MN + CR + CU)/20 + NI/60 + MO/15 + V/10 + 5B =< 0,25 CAL05= NB + V + TI =< 0,15

Analyse sur produit / Stuckanalyse

Repère pièce / Walznummer B08	N° de coulée / Schmelz B07		C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35146		0,10	1,08	0,013	0,001	0,25	0,028	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
617027	35146	1	0,10	1,07	0,014	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00							
617026	35146	1	0,10	1,07	0,013	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschriften unseres Qualitäts-Sicherungs-Heftes

(2) Emplacement / Probeentnahmeort: 1 T te/Kopf; 2 Pied/Fuss; 3 1/2 Longueur / 1/2 Lange; X: Divers C01

(3) Orientation / Probenrichtung: L: Long/Lange; T: Travers/Quer; Z: Travers court/Senkrecht C02

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas C10/33

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contrôle de marquage, d'aspect et de dimensions : satisfaisants.
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01 C50

Date/Datum: 12/02/01
Agent/Name Z01
Agent de Réception: HOUSSIN
Der Werksachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204/ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA[illegible] EN10204/ISO10474

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

8610314818 A02 | Page: 004/FIN Blatt: A09/A03

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A:Revenu / Angelassen
TE:Trempé à l'eau / Gequattet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
B03 G:Adouci par recuit / Weichgegluht

Sigle du producteur
Herstellerzeichen
TFK
A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
593 79 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger	N° commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57028 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120025 A07	232416 A08	5L-B-PSL2 API-5L:00 PLAQUES/BLECHE B01 B02

Etat de livraison / Lieferzustand (1): LN B04
Traitement de référence / Bezugszustand (1): LN B05
Organisme et/ou service de contr le / Aussteller: U S I N E A05

Repère pièce Walznummer B08	Coulée Brame Schmelz-bra. B07	Poste Post B09	Nombre de pièces Stuckzahl B10	Epaisseur Dicke B11	Largeur Breite B12	Longueur Lange B13	Masse unitaire Théorique Theor stuck Gewicht B14	Empla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29		C60-C69->	Empla. (2) C01	Réf (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C63	Valeurs individuelles Einzelwerte <-C42->			Moyenne Mitte Werte C43
623046	351547519	01	2	10,01	4283	12050	4055																						
616461	351543401							1	T	P	TPRIS	01		342	456	52	0,75			1	02	KV	T	0,0	PPP	302	304	306	304
613057	351547601							1	T	P	TPRIS	01		362	469	48	0,77			1	02	KV	T	0.0	PPP	324	178	306	269
Cumul pour	la coulée		2				8,1																						
Cumul géné	ral		6				24,3																						

QA checked [stamp with signature]

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Erschmelzungsverfahren (6) C70/93	Repère pièce Walznummer B08	N° de coulée Schmelz B07	*	C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
O/Y		35154		0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
	616461	35154	1	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
	613057	35154	1	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

(2) Emplacement / Probenentnahmeort: 1 Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur / 1/2 lange C01

(3) Orientation / Probenrichtung: L: Long/Lange; T: Travers/Quer; Z: Travers court/Senkrecht; X:Divers C02

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/6 Epais./Dicke C62

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen
Contr le de marquage, d'aspect et de dimensions : satisfaisants. [illegible]
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01 C50

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgefuhrt gemass Vorschriften unseres Qualitats-Sicherungs-Heftes

Date/Datum: 12/02/01
Agent/Name
Z01
Agent de Réception: ROUSSIN
Der Werksachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

8610314081 A02

Page: 001
Blatt: A09/A08

01: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewalts
D:Detentionne / Spannungsarm geglüht
B03 G:Adouci par recuit / Weichgeglüht

Sigle du producteur
Herstellerzeichen

TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00 A01

Client et/ou destinataire Besteller/Empfanger	N°commande Courtier/client Kundenbestell Nr	N° Commande Usine Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120026 A07	232416 A08	5L-X42-PSL2 API-5L:00 PLAQUES/BLECHE B01 B02

Etat de livraison Lieferzustand (1): LN B04

Traitement de référence Bezugszustand (1): LN B05

Organisme et/ou service de contr le Aussteller: U S I N E A05

Identification du produit / Erzeugnis benennung — Dimensions / Abmessung — Traction / Zugversuch

Repère pièce Walznummer B08	Coulée Brame Schmelz-bra. B07	Poste Post B09	Nombre de pièces Stuck zahl B10	Epaisseur Dicke B11	Largeur Breite B12	Longueur Lange B13	Masse unitaire Théorique Theor stuck Gewicht B14	Empla. Empla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp. °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29	C60-C69 >
617027	351462219	01	2	10,01	4283	12050	4055	1	T	P	TPR1S	01		344	458	44	0,75	
617026	351462301	01	2	10,01	4283	12050	4055	1	T	P	TPR1S	01		342	461	46	0,74	
617446	351462101	01	2	10,01	4283	12050	4055											
617447	351462102	01	2	10,01	4283	12050	4055											
617445	351462103	01	2	10,01	4283	12050	4055											
617448	351462201	01	2	10,01	4283	12050	4055											
617443	351462202	01	2	10,01	4283	12050	4055											
617028	351462203	01	2	10,01	4283	12050	4055											
617025	351462302	01	2	10,01	4283	12050	4055											
617441	351462319	01	1	10,01	4283	12050	4055											
617444	351466103	01	1	10,01	4283	12050	4055											
621463	351466117	01	1	10,01	4283	12050	4055											

Résilience / Kerbschlagzaehigkeit

Repère pièce Walznummer B08	Empla. Empla. (2) C01	Réf. (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles Einzelwerte <-- C42 -->			Moyenne Mitte Warte C43
617027	1	02	KV	T	0,0	PPP	298	300	302	300
617026	1	02	KV	T	0,0	PPP	304	292	290	295

QA/QC checked

AP C =< 0,18 MN =< 1,80 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce Walznummer B08	N° de coulée Schmelz B07	*	C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35146		0,10	1,08	0,013	0,001	0,25	0,028	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
617027	35146	1	0,10	1,07	0,014	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00							
617026	35146	1	0,10	1,07	0,013	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,16	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschiften unseres Qualitats-Sicherungs-Heftes

(1) Emplacement / Probenentnahmeort: 1 T te/Kopf; 2 Pied/Fuss; 3 1/2 Longueur 1/2 lange; X:Divers C01

(3) Orientation / Probenrichtung: L: Long/Lange; T: Travers/Quer; Z: Travers court/ Senkrecht C02

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/ Strangguss; O/Y: Oxygène pur/ Sauerstoff aufblas C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions : satisfaisants.
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01

Date/Datum: 30/01/01

Agent/Name

Agent de Réception: HOUSSIN

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

8610314081 Page: 002 Blatt: A09/A03 A02

01: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (INO)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht B03

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00 A01

Client et/ou destinataire / Besteller/Empfanger	N°commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte	Etat de livraison / Lieferzustand (1)	Organisme et/ou service de contr le / Aussteller
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120025 A07	232416 A08	5L-X42-PSL2 API-5L:00 PLAQUES / BLECHE B01 B02	LN B04 Traitement de référence / Bezugszustand (1): LN B05	USINE A01

Repère pièce / Walznummer B08	Coulée Brame / Schmelz-bra. B07	Poste / Post B09	Nombre de pièces / Stuck zahl B10	Epaisseur / Dicke B11	Largeur / Breite B12	Longueur / Lange B13	Masse unitaire Théorique / Theor stuck Gewicht B14
618046	351466201	01	1	10,01	4283	12050	4055
618047	351466202	01	2	10,01	4283	12050	4055
618048	351466203	01	2	10,01	4283	12050	4055
618045	351466219	01	1	10,01	4283	12050	4055
618461	351466301	01	1	10,01	4283	12050	4055
618459	351466302	01	2	10,01	4283	12050	4055
Cumul pour	la coulée		30				121,6

Traction / Zugversuch: Empl. (2) C01 | S (3) C02 | Pos. Z(4) C62 | Type Form C10 | Réf. (5) | Temp. °C C03 | RT0,5 S0,5 C11 | RM Z C12 | A2" A2" C13 | CAL07 <-C14-C29 | C60-C69->

Résilience / Kerbschlagzaehigkeit: Empl. (2) C01 | Réf. (5) | Type Form C40 | S (3) C03 | Temp. °C C08 | Pos. Z(4) C62 | Valeurs individuelles / Einzelwerte <--C42--> | Moyenne / Mitte Werte C43

QA checked

AP C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM =C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM =C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce / Walznummer	N° de coulée / Schmelz	C%	Mn%	P%	S%	Si%	Al%	Ni%	Cr%	Cu%	Mo%	Nb%	V %	Ti%	B %	N %	CAL30	CAL05							
B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C96	C97
	35146	0,10	1,08	0,013	0,001	0,25	0,028	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							

* Analyse sur produit / Stuckanalyse

(1) Emplacement / Probenentnahmeort: 1 Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur 1/2 lange; X:Divers C01
(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/Senkrecht C02
(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62
(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas C70/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions : satisfaisants.
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01 C50

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgefuhrt gemass Vorschriften unseres Qualitats-Sicherungs-Heftes

Date/Datum: 30/01/01
Agent/Name Z01
Agent de Réception: HOUSSIN
Der Werksachverstandige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204/ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204/ISO10474

A02

8610314081 Page: 003 Blatt: A09/A03

01: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/2 (5)
02: KV T -0,0 C >= 28 J (MOY) KV >= 20 J (IND)

CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A:Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewalzt
N:Normalisa / Normalisierend gewalzt
D:Detentionne / Spannungsarm geglüht
G:Adouci par recuit / Weichgeglüht
B03

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger: BERGROHR GMBH, D-57025 SIEGEN, ALLEMAGNE — A06

N° commande Courtier/client / Kundenbestell Nr: E2000/01992-4700, 120026 — A07

N° Commande Usine / Werksauftrags Nr: 232416 — A08

Nuances et spécifications techniques / Stahlsorte: 5L-X42-PSL2 API-5L:00

PLAQUES/BLECHE — B01 B02

Etat de livraison / Lieferzustand (1): LN — B04

Traitement de référence / Bemgerungstand (1): LN — B05

Organisme et/ou service de contr le / Aussteller: USINE — A05

Identification du produit / Erzeugnis bezeichnung		Poste / Post	Nombre de pièces / Stuckzahl	Dimensions / Abmessung			Masse unitaire / Theor stuck Gewicht	Empla. / Empla. (2)	Traction / Zugversuch											Empla. / Empla. (2)	Résilience / Kerbschlagzahigkeit							
Repère pièce / Walznummer	Coulée Brame / Schmelz-bra.			Epaisseur / Dicke	Largeur / Breite	Longueur / Lange			S (3)	Pos. Z(4)	Type / Form	Réf (5)	Temp °C	RT0.5 S0,5	RM Z	A2" A2"	CAL07						Réf. (5)	Type / Form	S (3)	Temp. °C	Pos. Z(4)	Valeurs individuelles / Einzelwerte			Moyenne / Mittl Werte
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C09	C11	C12	C13	<-C14-C29			C60-C69->	C01		C40	C03	C08	C62	<- C42 ->			C43
616460	351482401	01	1	10,01	4283	12050	4055	1	T	P	TPRIS	01		340	461	54	0,74				1	02	KV	T	0,0	PPP	274	306	304	295
		02	1	10,01	4283	12250	4123																							
615021	351482602	03	2	12,70	4275	12050	5136	1	T	P	TPRIS	01		331	453	52	0,73				1	02	KV	T	0,0	PPP	318	316	316	317
615019	351486419	03	2	12,70	4275	12050	5136	1	T	P	TPRIS	01		328	450	54	0,73				1	02	KV	T	0,0	PPP	328	310	306	315
615020	351482601	03	2	12,70	4275	12050	5136																							
615417	351482619	03	2	12,70	4275	12050	5136																							
615414	351486401	03	2	12,70	4275	12050	5136																							
615022	351486402	03	2	12,70	4275	12050	5136																							
616060	351486501	03	2	12,70	4275	12050	5136																							
616058	351486502	03	2	12,70	4275	12050	5136																							
616059	351486519	03	1	12,70	4275	12050	5136																							
615415	351486601	03	2	12,70	4275	12050	5136																							
615418	351486602	03	2	12,70	4275	12050	5136																							

checked .....

AP C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce / Walznummer	N° de coulée / Schmelz	* Analyse sur produit / Stuckanalyze																							
		C%	Mn%	P%	S%	Si%	Al%	N i%	C r%	Cu%	Mo%	Nb%	V %	T i%	B %	N %	CAL30	CAL05							
B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C96	C97
	35148	0,10	1,10	0,011	0,000	0,24	0,024	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0000	0,003	0,16	0,00							
616460	35148	0,10	1,09	0,013	0,001	0,24	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0002	0,004	0,17	0,00							
615021	35148	0,10	1,09	0,012	0,001	0,25	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0002	0,003	0,16	0,00							
615019	35148	0,10	1,09	0,012	0,001	0,25	0,024	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0002	0,004	0,16	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgefuhrt gemass Vorschriften unseres Qualitats-Sicherungs-Hefter

(2) Emplacement / Probenentnahmeort: 1 T te/Kopf; 2 Pied/Fuss; 3 1/4 Longueur / 1/2 lange; X:Divers

(3) Orientation / Probenrichtung: L: Long/Lange; T: Travers/Quer; Z: Travers court/ Senkrecht

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzfläche; D: 1/8 Epais /Dicke; Q: 1/4 Epais /Dicke; F: 1/5 Epais /Dicke

(5) Erzeugungsverfahren: T: Thomas M: Martin E: Electrique/Elektrofen CC: Coulée continue/ Strangguss O/Y: Oxygène sur/

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den Bestellungs Vorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions: satisfaisants.

Date/Datum: 30/01/01
Agent/Name

Agent de Réception: HOUSSIN

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

8610314081 Page : 004 Blatt : A02 A09/A03

01: 290 =< S0,5 =< 496 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contrôlée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht
B03

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00

A01

Client et/ou destinataire / Besteller/Empfanger	N° commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120025 A07	232415 A08	5L-X42-PSL2 API-5L:00 PLAQUES/BLECHE B01 B02

Etat de livraison / Lieferzustand (1): LN B04
Traitement de référence / Bezugszustand (1): LN B05
Organisme et/ou service de contrôle / Aussteller: USINE A05

Repère pièce / Walznummer B08	Coulée Brame / Schmelz-bra. B07	Poste / Post B09	Nombre de pièces / Stuckzahl B10	Epaisseur / Dicke B11	Largeur / Breite B12	Longueur / Lange B13	Masse unitaire Théorique / Theor stuck Gewicht B14	Empla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29		C60-C69->	Empla. (2) C01	Réf (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles / Einzelwerte <-- C42 -->	Moyenne / Mitte Warte C43
615416	351486619	03	2	12,70	4275	12050	5136																				
Cumul pour	la coulée		25				126,3																				

(Traction / Zugversuch; Résilience / Kerbschlagzaehigkeit)

QA/QC checked ......

P C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Analyse sur produit / Stuckanalyse

	Repère pièce / Walznummer	N° de coulée / Schmelz	C%	Mn%	P%	S%	Si%	Al%	Ni%	Cr%	Cu%	Mo%	Nb%	V %	Ti%	B %	N %	CAL30	CAL05							
V93 O/Y	B08	B07 35148	C71 0,10	C72 1,10	C73 0,011	C74 0,000	C75 0,24	C76 0,024	C77 0,02	C78 0,02	C79 0,02	C80 0,00	C81 0,001	C82 0,001	C83 0,003	C84 0,0000	C85 0,003	C86 0,16	C87 0,00	C88	C89	C90	C91	C92	C96	C97

Emplacement / Probeentnahmeort: Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur 1/2 lange; X:Divers C01
(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/Senkrecht C02
(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62
(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas C10/93

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contrôle de marquage, d'aspect et de dimensions ; satisfaisants.
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01 C50

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschriften unseres Qualitats-Sicherungs-Heftes

Date/Datum: 30/01/01
Agent/Name: Z01
Agent de Réception: HOUSSIN
Der Werksachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NACH EN10204 / ISO10474

8610314081 Page: 005 Blatt: A09/A03 A02

01: 290 =< S0,5 =< 495 MPA Z >= 414 MPA A2" >= 24 % CAL07=S0,5/Z
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettat
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewalts
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht B03

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00 A01

Client et/ou destinataire / Besteller/Empfanger	N°commande Courtier/client Kundenbestell Nr	N° Commande Usine Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120025 A07	232416 A08	5L-X42-PSL2 API-5L:00 PLAQUES / BLECHE B01 B02

Etat de livraison / Lieferzustand (1): LN B04
Traitement de référence / Bezugszustand (1): LN B05
Organisme et/ou service de contrôle / Aussteller: USINE A05

Repère pièce Walznummer B08	Coulée Brame Schmelz-bra. B07	Poste Post B09	Nombre de pièces Stuckzahl B10	Epaisseur Dicke B11	Largeur Breite B12	Longueur Lange B13	Masse unitaire Théorique Theor stuck Gewicht B14
615461	351543401	01	1	10,01	4283	12050	4055
		02	1	10,01	4283	12250	4123
615477	351543403	03	2	12,70	4275	12050	5136
613053	351543601	03	2	12,70	4275	12050	5136
613057	351547601	01	1	10,01	4283	12050	4055
615476	351543402	03	2	12,70	4275	12050	5136
616056	351543419	03	1	12,70	4275	12050	5136
615478	351543501	03	2	12,70	4275	12050	5136
615064	351543502	03	2	12,70	4275	12050	5136
616057	351547401	03	2	12,70	4275	12050	5136
615066	351547402	03	2	12,70	4275	12050	5136
613058	351547602	01	2	10,01	4283	12050	4055
Cumul pour la coulée			20				97,3
Cumul général			75				345,3

Traction / Zugversuch

Repère pièce	Empla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14 C29		C60-C69->
615461	1	T	P	TPRIS	01		342	456	52	0,75		
615477	1	T	P	TPRIS	01		329	453	55	0,73		
613053	1	T	P	TPRIS	01		346	458	54	0,76		
613057	1	T	P	TPRIS	01		362	469	48	0,77		

Résilience / Kerbschlagzaehigkeit

Repère pièce	Empla. (2) C01	Réf. (5)	Type Form C40	S (3) C02	Temp. °C C05	Pos. Z(4) C52	Valeurs individuelles Einzelwerte <-C42->			Moyenne Mitte Werte C43
615461	1	02	KV	T	0,0	PPP	302	304	306	304
615477	1	02	KV	T	0,0	PPP	304	286	302	297
613053	1	02	KV	T	0,0	PPP	324	318	308	317
613057	1	02	KV	T	0,0	PPP	324	178	306	269

QA/QC checker ....

AP C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,30 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Analyse sur produit / Stuckanalyse

Repère pièce Walznummer B08	N° de coulée Schmelz B07	*	C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	N i% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35154		0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
615461	35154	1	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
615477	35154	1	0,10	1,10	0,013	0,001	0,25	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,002	0,0002	0,003	0,16	0,00							
613053	35154	1	0,09	1,10	0,014	0,001	0,25	0,024	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
613057	35154	1	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

(2) Emplacement / Probenentnahmeort: 1 Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur 1/2 lange; X:Divers C01
(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/Senkrecht C02
(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62
(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/Strangguss; O/Y: Oxygène pur/Sauerstoff aufblas

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschiften unseres Qualitäts-Sicherungs-Heftes

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestätigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contrôle de marquage, d'aspect et de dimensions : satisfaisants. [redacted]
Bezeichnungs Besichtigung und Ausmessung ohne Beanstandung D01

Date/Datum: 30/01/01
Agent/Name
Agent de Réception: HOUSSIN

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

A02 — 8610314081 — Page: 006 / Blatt: — A09/A03

(5) CDC: Conforme au cahier des charges / Laut den spezifikationen (1)
BL: Brut de laminage / Unbehandelt
LN: Laminage normalisant / Normalisiert
A: Revenu / Angelassen
TE: Trempé à l'eau / Gequattet
LTC: Laminé à température contrôlée / Warme behan bedingungen
TM: Laminage thermo-mecanique / Thermomechan gewalzt
N: Normalise / Normalisierend gewalzt
D: Detentionne / Spannungsarm geglüht
G: Adouci par recuit / Weichgeglüht
B03

Sigle du producteur / Herstellerzeichen: TFK — A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfänger:
BERGROHR GMBH
D-57025 SIEGEN ALLEMAGNE
A06

N° commande courtier/client / Kundenbestell Nr: E2000/01992-4700 120026 — A07
N° Commande Usine / Werksauftrags Nr: 232416 — A08

Nuances et spécifications techniques / Stahlsorte: 5L-B-PSL2 API-5L:00
B01 B02

Etat de livraison / Lieferzustand (1): LN — B04
Traitement de référence / Bezugszustand (1): LN — B05

Organisme et/ou service de contrôle / Aussteller: USINE — A05

Identification du produit / Erzeugnis benennung — Poste / Post — Nombre de pièces / Stückzahl

Repère pièce / Walznummer	Coulée Brame / Schmelz-bra.	Poste / Post	Nombre de pièces / Stückzahl
B08	B07	B09	B10
617027	351462219	01	2
617026	351462301	01	2
617446	351462101	01	2
617447	351462102	01	2
617445	351462103	01	2
617448	351462201	01	2
617443	351462202	01	2
617028	351462203	01	2
617025	351462302	01	2
617441	351462319	01	1
617444	351466103	01	1
621463	351466117	01	1

Dimensions / Abmessung — Masse unitaire Théor. / Theor. stück Gewicht — Empla. / Empla. (2)

Epaisseur / Dicke	Largeur / Breite	Longueur / Lange	Masse unitaire Théor. / Theor. stück Gewicht	Empla. / Empla. (2)
B11	B12	B13	B14	C01
10,01	4283	12050	4055	1
10,01	4283	12050	4055	1
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	
10,01	4283	12050	4055	

Traction / Zugversuch

Empla. / Empla. (2)	S (5)	Pos. Z(4)	Type Form	Réf (5)	Temp °C	RT0,5 S0,5	RM Z	A2" A2"	CAL07			
	C02	C62	C10		C03	C11	C12	C13	<-C14-C29			C60-C89->
1	T	P	TPRIS	01		344	458	44	0,75			
1	T	P	TPRIS	01		342	481	46	0,74			

Résilience / Kerbschlagzaehigkeit

Empla. / Empla. (2)	Réf. (5)	Type Form	S (5)	Temp. °C	Pos. Z(4)	Valeurs individuelles / Einzelwerte			Moyenne / Mittelwerte
C01		C40	C02	C08	C62	<-- C42 -->			C43
1	02	KV	T	0,0	PPP	298	300	302	300
1	02	KV	T	0,0	PPP	304	292	290	295

checked

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce / Walznummer	N° de coulée / Schmelz	* Analyse sur produit / Stückanalyse																						
		C%	Mn%	P%	S%	Si%	Al%	N i%	Cr%	Cu%	Mo%	Nb%	V %	T i%	B %	N %	CAL30	CAL05						
B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C96	C97
	35146	0,10	1,08	0,013	0,001	0,25	0,028	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00						
617027	35146	0,10	1,07	0,014	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,15	0,00						
617026	35146	0,10	1,07	0,013	0,001	0,24	0,026	0,02	0,02	0,02	0,00	0,000	0,000	0,003	0,0001	0,003	0,15	0,00						

(3) Emplacement / Probenentnahmeort: T: Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur / 1/2 lange; X: Divers — C01
(3) Orientation / Probenrichtung: L: Long/Länge; T: Travers/Quer; Z: Travers court/ Senkrecht — C02
(4) Position: C: Coeur/Kernprobe; P: Peau/Walzfläche; D: 1/8 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke — C62
(6) Erschmelzungsverfahren: T: Thomas M: Martin E: Electrique/Elektrofen C: Coulée continue/ Stranguss O/Y: Oxygène pur/ Sauerstoff aufblas. — C70/C71

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den Bestellungs Vorschriften entsprechen

Contrôle de marquage, d'aspect et de dimensions : satisfaisants. [illegible]
Bezeichnung, Beschichtung und Aussehen ohne Beanstandung
D01 C80 701

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemäss Vorschriften unseres Qualitäts Sicherungs Heftes

Date/Datum: 30/01/01
Agent/Name: HOUSSIN
Agent de Réception
Der Werkscheverantwortliche

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

A02

8610314081 Page: 007 Blatt: A09/A03

O1: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93
O2: KV T -0,0 C >= 25 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequetscht
LTC:Laminé à température contr lée/Warme beben bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm geglüht
B03 G:Adouci par recuit / Weichgeglüht

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolaris Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger: BERGROHR GMBH, D-57025 SIEGEN, ALLEMAGNE — A06

N°commande Courtier/client / Kundenbestell Nr: 52000/01992-4700 120026 — A07

N° Commande Usine / Werksauftrags Nr: 232416 — A08

Nuances et spécifications techniques / Stahlsorte: 5L-B-PSL2 API-5L:00 — B03
PLAQUES/BLECHE — B01

Etat de livraison / Lieferzustand (1): LN — B04

Traitement de référence / Bezugszustand (1): LN — B02

Organisme et/ou service de contr le / Aussteller: USINE — B05 A05

Identification du produit Erzeugnis benennung		Poste Post	Nombre de pièces Stück zahl	Dimensions Abmessung			Masse unitaire Théorique Theor stück Gewicht	Empla. Empla. (2)	Traction / Zugversuch											Empla. Empla. (2)	Résilience / Kerbschlagzeahigkeit						
Repère pièce Walznummer	Coulée Brame Schmelz-bra.			Epaisseur Dicke	Largeur Breite	Longueur Lange			S (3)	Pos. Z(4)	Type Form	Réf. (5)	Temp. °C	RT0,5 S0,5	RM Z	A2" A2"	CAL07				Réf. (5)	Type Form	S (3)	Temp. °C	Pos. Z(4)	Valeurs individuelles Einzelwerte	Moyenne Mittle Werte
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C03	C11	C12	C13	<-C14-C29			C60-C69->	C01	C40	C02	C08	C62	<--C42-->	C43
618046	351466201	01	1	10,01	4283	12050	4055																				
618047	351466202	01	2	10,01	4283	12050	4055																				
618048	351466203	01	2	10,01	4283	12050	4055																				
618045	351466219	01	1	10,01	4283	12050	4055																				
618461	351466301	01	1	10,01	4283	12050	4055																				
618459	351466302	01	2	10,01	4283	12050	4055																				
Cumul pour la coulée			30				121,6																				

Q.A.
checked

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Repère pièce Walznummer	N° de coulée Schmelz	* Analyse sur produit / Stuckanalyse																						
		C%	Mn%	P%	S%	Si%	Al%	Ni%	Cr%	Cu%	Mo%	Nb%	V %	Ti%	B %	N %	CAL30	CAL05						
B08	B07 35145	C71 0,10	C72 1,08	C73 0,013	C74 0,001	C75 0,25	C76 0,028	C77 0,02	C78 0,02	C79 0,02	C80 0,00	C81 0,001	C82 0,001	C88 0,003	C84 0,0001	C85 0,003	C86 0,17	C87 0,00	C88	C89	C90	C91	C92	C96	C97

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemäss Vorschriften unseres Qualitats Sicherungs-Heftes

(3) Orientation / Probenrichtung: L: Long/Lange; T: Travers/Quar; Z: Travers court/ Senkrecht; X:Divers — C02
(4) Position: C: Coeur/Kernprobe; P: Peau/Walzfläche; D: 1/8 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke — C62
(6) Erschmelzungsverfahren: T: Thomas M: Martin E: Electrique/Elektrofen CC: Coulée continue/ Strangguss OY: Oxygène pur/ Sauerstoff aufbl.

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestätigen hiermit dass die obengenannten Ergebnisse den Bestellungs Vorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions : satisfaisants. D01

Date/Datum: 30/01/01
Agent/Name: HOUSSIN
Cachet de Réception / Der

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

A02

8610314081 Page: 008 Blatt: A09/A03

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 X CAL07=S0,5/Z =< 0,93
02: KV T -0,0 C >= 26 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contr lée/Warme behen bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewalzt
N:Normalise / Normalisierend gewalzt
D:Detentionne / Spannungsarm gegluht
B03 G:Adouci par recuit / Weichgegluht

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger	N°commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120026 A07	232416 A08	SL-B-PSL2 API-5L:00 PLAQUES / BLECHE B01 B02

État de livraison / Lieferzustand (1): LN B04
Traitement de référence / Bezugszustand (1): LN B05
Organisme et/ou service de contr le / Aussteller: USINE A05

Identification du produit / Erzeugnis benennung

Repère pièce Walznummer B08	Coulée Brame Schmelz-bra. B07	Poste Post B09	Nombre de pièces Stuckzahl B10	Epaisseur Dicke B11	Largeur Breite B12	Longueur Lange B13	Masse unitaire Théorique Theor stuck Gewicht B14
616460	351482401	01	1	10,01	4283	12050	4055
		02	1	10,01	4283	12250	4123
615021	351482602	03	2	12,70	4275	12050	5136
615019	351486419	03	2	12,70	4275	12050	5136
615020	351482601	03	2	12,70	4275	12050	5136
615417	351482619	03	2	12,70	4275	12050	5136
615414	351486401	03	2	12,70	4275	12050	5136
615022	351486402	03	2	12,70	4275	12050	5136
616060	351486501	03	2	12,70	4275	12050	5136
616058	351486502	03	2	12,70	4275	12050	5136
616059	351486519	03	1	12,70	4275	12050	5136
615415	351486601	03	2	12,70	4275	12050	5136
"15418	351486602	03	2	12,70	4275	12050	5136

Traction / Zugversuch — Résilience / Kerbschlagzaehigkeit

Repère pièce B08	Em-pla. (2) C01	S (3) C02	Pos. Z(4) C62	Type Form C10	Réf. (5)	Temp. °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29	C60 C69->	Em-pla. (2) C01	Réf. (5)	Type Form C40	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles Einzelwerte <-C47->			Moyenne Mitte Werte C43
616460	1	T	P	TPRIS	01		340	461	54	0,74		1	02	KV	T	0,0	PPP	274	306	304	295
615021	1	T	P	TPRIS	01		331	453	52	0,73		1	02	KV	T	0,0	PPP	318	316	316	317
615019	1	T	P	TPRIS	01		328	450	54	0,73		1	02	KV	T	0,0	PPP	328	310	306	315

QA QC checked ....

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

Analyse sur produit / Stuckanalyse

Repère pièce Walznummer B08	N° de coulée Schmelz B07		C% C71	Mn% C72	P% C73	S% C74	Si% C75	Al% C76	Ni% C77	Cr% C78	Cu% C79	Mo% C80	Nb% C81	V % C82	Ti% C83	B % C84	N % C85	CAL30 C86	CAL05 C87	C88	C89	C90	C91	C92	C96	C97
	35148		0,10	1,10	0,011	0,000	0,24	0,024	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0000	0,003	0,16	0,00							
616460	35148	1	0,10	1,09	0,013	0,001	0,24	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0002	0,004	0,17	0,00							
615021	35148	1	0,10	1,09	0,012	0,001	0,25	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0002	0,003	0,16	0,00							
615019	35148	1	0,10	1,09	0,012	0,001	0,25	0,024	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0002	0,004	0,16	0,00							

(2) Emplacement / Probenentnahmeort: 1 Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur / 1/2 lange; X:Divers

(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/ Senkrecht

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzfläche; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/ Strangguss; O/Y: Oxygène pur/ Sauerstoff aufblas

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond sous tous ses aspects aux spécifications particulières ainsi qu' aux normes en vigueur s' y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contr le de marquage, d'aspect et de dimensions ; satisfaisants. [illegible]
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgefuhrt gemass Vorschiften unseres Qualitats-Sicherungs Heftes

Date/Datum: 30/01/01
Agent/Name
Agent de Réception: HOUSSIN

NO. 0584 P. 2/

VASS FILE

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204 / ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NA EN10204 / ISO10474

A02

8610314081 Page: 009 Blatt: A09/A03

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93
02: KV T -0,0 C >= 28 J (MOY) KV >= 20 J (IND)

(5) CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettet
LTC:Laminé à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewalts
N:Normalise / Normalisierend gewalts
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht
B03

Sigle du producteur / Herstellerzeichen: TFK A04

GTS INDUSTRIES
Toleria Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger	N°commande Courtier/client / Kundenbestell Nr	N° Commande Usine / Werksauftrags Nr	Nuances et spécifications techniques / Stahlsorte
BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06	E2000/01992-4700 120026 A07	232416 A08	5L-B-PSL2 API-5L:00 PLAQUES/BLECHE B01 B02

État de livraison / Lieferzustand (1): LN B04

Traitement de référence / Bezugszustand (1): LN B05

Organisme et/ou service de contrôle / Aussteller: USINE A05

Identification du produit / Erzeugnis benennung: Repère pièce / Walznummer B08	Coulée Brame / Schmelz-bra. B07	Poste / Post B09	Nombre de pièces / Stuckzahl B10	Epaisseur / Dicke B11	Largeur / Breite B12	Longueur / Lange B13	Masse unitaire Théorique / Theor stuck Gewicht B14	Empla. (2) C01	Traction / Zugversuch: S (3) C02	Pos. Z(4) C62	Type Form C10	Réf (5)	Temp °C C03	RT0,5 S0,5 C11	RM Z C12	A2" A2" C13	CAL07 <-C14-C29		C60-C69->	Empla. (2) C01	Résilience / Kerbschlagzaehigkeit: Réf. (5)	Type Form	S (3) C02	Temp. °C C08	Pos. Z(4) C62	Valeurs individuelles / Einzelwerte <--C42-->	Moyenne / Mittewerte C43
615416	351486619	03	2	12,70	4275	12050	5136																				
Cumul pour	la coulée		25				126,3																				

QA checked ...

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

(6)	Repère pièce / Walznummer	N° de coulée / Schmelz	Analyse sur produit / Stuckanalyse: C%	Mn%	P%	S%	Si%	Al%	Ni%	Cr%	Cu%	Mo%	Nb%	V %	Ti%	B %	N %	CAL30	CAL05							
C70/93	B08	B07	C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C96	C97
O/Y		35148	0,10	1,10	0,011	0,000	0,24	0,024	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0000	0,003	0,16	0,00							

(1) Emplacement / Probenentnahmeort: 1 Tête/Kopf; 2 Pied/Fuss; 3 1/2 Longueur / 1/2 lange; X:Divers C01

(3) Orientation / Probenrichtung: L: Long/Langs; T: Travers/Quer; Z: Travers court/ Senkrecht C02

(4) Position: C: Coeur/Kernprobe; P: Peau/Walzflache; D: 1/3 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/5 Epais./Dicke C62

(6) Erschmelzungsverfahren: T: Thomas M: Martin; E: Electrique/Elektrofen; CC: Coulée continue/ Strangguss; O/Y: Oxygène pur/ Sauerstoff aufblas C70/93

Nous certifions que la fourniture citée a été fabriqués conformément aux spécifications techniques du contrat et que, toutes opérations de contrôle et essais effectués, elle répond sous tous ses respects aux spécifications particulières ainsi qu' aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen

Contrôle de marquage, d'aspect et de dimensions : satisfaisants.
Bezeichnung Besichtigung und Ausmessung ohne Beanstandung D01 C50

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschiften unseres Qualitäts-Sicherungs-Heftes

Date/Datum: 30/01/01

Agent/Name: Z01

Agent de Réception: HOUSSIN

Der Werkssachverstaendige

CERTIFICAT DE RECEPTION 3-1-B SELON EN10204/ISO10474
ABNAHMEPRUFZEUGNIS 3-1-B NACH EN10204/ISO10474

A02

8610314081 Page: 010/FIN Blatt: A09/A09

01: 241 =< S0,5 =< 448 MPA Z >= 414 MPA A2" >= 29 % CAL07=S0,5/Z =< 0,93 (5)
02: KV T -0,0 C >= 25 J (MOY) KV >= 20 J (IND)

CDC:Conforme au cahier des charges / Laut den spezifikationen (1)
BL:Brut de laminage / Unbehandelt
LN:Laminage normalisant / Normalisiert
A :Revenu / Angelassen
TE:Trempé à l'eau / Gequettat
LTC:Lamin6 à température contr lée/Warme behan bedingungen
TM:Laminage thermo-mecanique / Thermomechan gewaltz
N:Normalise / Normalisierend gewaltz
D:Detentionne / Spannungsarm gegluht
G:Adouci par recuit / Weichgegluht
B03

Sigle du producteur / Herstellerzeichen: TFK A04

Tolerie Forte T.F.K
Boite postale 6-317
59379 Dunkerque cedex 1
Télex : Usiupdk 132281 F
Tél : 03 28 29 30 00
A01

Client et/ou destinataire / Besteller/Empfanger: BERGROHR GMBH D-57025 SIEGEN ALLEMAGNE A06

N°commande Courtier/client / Kundenbestell Nr: E2000/01992-4700 120025 A07

N° Commande Usine / Werksauftrags Nr: 232418 A08

Nuances et spécifications techniques / Stahlsorte: 5L-B-PSL2 API-5L:00 PLAQUES/BLECHE B01 B02

Etat de livraison / Lieferzustand: LN B04 (1)

Traitement de référence / Bezugszustand: LN B05 (1)

Organisme et/ou service de contr le / Aussteller: USINE A09

Identification du produit / Erzeugnis benennung		Poste / Post	Nombre de pièces / Stuckzahl	Dimensions / Abmessung			Masse unitaire Théor / Theor Stuck Gewicht	Empla. / Empla. (2)	Traction / Zugversuch											Empla. / Empla. (2)	Résilience / Kerbschlagzaehigkeit						
Repère pièce / Weknummer	Coulée Brame / Schmelz-bra.			Epaisseur / Dicke	Largeur / Breite	Longueur / Lange			S (3)	Pos. Z(4)	Type Form	Réf. (5)	Temp. °C	RT0,5 S0,5	RM Z	A2" A2"	CAL07					Réf. (5)	Type Form	S (3)	Temp. °C	Pos. Z(4)	Valeurs individuelles / Einzelwerte			Moyenne / Mittelwerte
B08	B07	B09	B10	B11	B12	B13	B14	C01	C02	C62	C10		C03	C11	C12	C13	<-C14 C29		C80-C89->		C01		C40	C02	C08	C62	<-	C42	->	C43
616461	351543401	01	1	10,01	4283	12050	4065	1	T	P	TPRIS	01		342	456	52	0,75				1	02	KV	T	0,0	PPP	302	304	306	304
		02	1	10,01	4283	12250	4123																							
615477	351543403	03	2	12,70	4275	12050	5138	1	T	P	TPRIS	01		329	453	55	0,73				1	02	KV	T	0,0	PPP	304	286	302	297
613053	351543501	03	2	12,70	4275	12050	5136	1	T	P	TPRIS	01		346	458	54	0,76				1	02	KV	T	0,0	PPP	324	318	308	317
613057	351547601	01	1	10,01	4283	12050	4055	1	T	P	TPRIS	01		362	469	48	0,77				1	02	KV	T	0,0	PPP	324	178	306	269
615476	351543402	03	2	12,70	4275	12050	5136																							
615056	351543419	03	1	12,70	4275	12050	5136																							
615478	351543501	03	2	12,70	4275	12050	5136																							
615064	351543502	03	2	12,70	4275	12050	5136																							
615057	351547401	03	2	12,70	4275	12050	5136																							
615065	351547402	03	2	12,70	4275	12050	5136																							
613058	351547502	01	2	10,01	4283	12050	4055																							
...mul pour la coulée			20				97,3																							
...mul général			75				345,1																							

checked

AP C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15
AC C =< 0,18 MN =< 1,20 P =< 0,030 S =< 0,030 CAL30= PCM=C+SI/30+(MN+CR+CU)/20+NI/60+MO/15+V/10+5B =< 0,25 CAL05= NB+V+TI =< 0,15

...sch...al ...ngs ...fs(5)	Repère pièce / Weknummer	N° de coulée / Schmelz	* Analyse sur produit / Stuckanalyse																								
				C%	Mn%	P%	S%	Si%	Al%	N i%	C r%	Cu%	Mo%	Nb%	V %	T i%	B %	N %	CAL30	CAL05							
0/93 0/Y	B08	B07		C71	C72	C73	C74	C75	C76	C77	C78	C79	C80	C81	C82	C83	C84	C85	C86	C87	C88	C89	C90	C91	C92	C96	C97
		35154		0,10	1,12	0,014	0,001	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
	616461	35154	1	0,10	1,10	0,013	0,001	0,25	0,027	0,02	0,02	0,02	0,00	0,001	0,001	0,003	0,0001	0,003	0,17	0,00							
	615477	35154	1	0,10	1,10	0,013	0,001	0,25	0,025	0,02	0,02	0,02	0,00	0,001	0,001	0,002	0,0002	0,003	0,16	0,00							
	613053	35154	1	0,09	1,10	0,014	0,001	0,25	0,024	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,003	0,16	0,00							
	613057	35154	1	0,10	1,10	0,014	0,000	0,24	0,023	0,02	0,02	0,02	0,00	0,001	0,000	0,002	0,0002	0,002	0,17	0,00							

Commande réalisée conformément à notre manuel ASSURANCE QUALITE
Auftrag ausgeführt gemass Vorschriften unseres Qualitats-Sicherungs-Heftes

2) Emplacement / Probenentnahmeort: 1 T te/Kopf; 2 Pied/Fuss; 3 1/2 Longueur/Lange; 1/2 Largeur/Breite C61
(3) Orientation / Probenrichtung: L: Long/Lange; T: Travers/Quer; Z: Travers court/Senkrecht; X: Divers C62
(4) Position: C: Coeur/Kernprobe; F: Fesu/Walsflache; D: 1/8 Epais./Dicke; Q: 1/4 Epais./Dicke; F: 1/8 Epais./Dicke C63
(6) Erschmelzungsverfahren: T: Thomas M: Martin E: Electrique/Elektrofen CC: Coulée continus/Strangguss OX: Oxygène sur/Sauerstoff aufblas C64

Nous certifions que la fourniture citée a été fabriquée conformément aux spécifications techniques du contrat et que, toutes opérations de contr le et essais effectués, elle répond pour tous ses aspects aux spécifications particulières ainsi qu'aux normes en vigueur s'y rapportant.
Wir bestatigen hiermit dass die obengenannten Ergebnisse den BestellungsVorschriften entsprechen
Contr le de marquage, d'aspect et de dimensions : satisfaisants. [illegible] D01
Bezeichnung Beschriftung und Aussenzustand Massangaben C50 Z01

Date/Datum: 30/01/01
Agent/Name: HOUSSIN
Agent de Réception / Der Werkssachverstaendige

Appendix E

Cementing Records

MWH

IW-1 CEMENT PUMPING DATA

DATE(S): 6/17/2005

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

OWNER: Lee County, FL

DESCRIPTION OF OPERATIONS: Cement casing from 490 feet bls to the surface by pressure grout in one stage

STAGE NUMBER: 1
START TIME: 1355
FINISH TIME: 1504

INITIAL READINGS: 0
(HEADER PRESSURE psi)

THEORETICAL PRESSURES: 12% gel 0.2392 psi/ft / Neat 0.3432 psi/ft
(CEMENT/ COLLAPSE) 142 psi calculated (YBI using 142 psi)

TIME	TOTAL MINUTES	HEADER PRESSURE (PSI)	LBS/ GAL	BAR/ MIN	TOTAL BARRELS	TOTAL FT³	COMMENTS
1355	0	0	-	-	-	-	H2O preflush
1400	5	0	12.6	4.5	17	95	12% gel
1405	10	0	12.6	4.5	40	224	12% gel
1407	12	10	-	-	-	-	12% gel
1410	15	20	-	-	-	-	12% gel
1412	17	-	12.6	4.5	75	421	12% gel
1417	22	-	12.6	4.5	102	572	12% gel
1419	24	40	-	-	-	-	12% gel
1423	28	-	12.6	4.5	130	729	12% gel
1428	34	58	12.6	4.5	150	842	12% gel- switch to neat @ 151 bbls
1432	38	-	15.7	5.0	170	954	Neat Cement
1438	44	75	-	-	-	-	Neat Cement
1442	48	-	15.7	5.0	221	1,240	Neat Cement
1444	50	80	-	-	-	-	Neat Cement
1452	58	90	15.7	5.0	267	1,498	Neat Cement
1500	66	90	15.7	5.0	312	1,750	Neat Cement
							End Cementing

Observer's Initials: AS

MWH

IW-1 CEMENT PUMPING DATA

DATE(S): 5/23/2005

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

OWNER: Lee County, FL

DESCRIPTION OF OPERATIONS: Cement casing from 2,100 feet bls to the surface.

STAGE NUMBER: 9
START TIME: 0038
FINISH TIME: 0051

INITIAL READINGS: 0
(HEADER PRESSURE)

THEORETICAL PRESSURES: 12% gel 0.2028 psi/ft
(CEMENT/ COLLAPSE) 1,112 psi calculated (YBI using 770 psi)

TIME	TOTAL MINUTES	HEADER PRESSURE	LBS/ GAL	BAR/ MIN	TOTAL BARRELS	TOTAL FT³	COMMENTS
0038	0	0	-	-	10	-	H2O preflush
0040	2	0	-	-	-	-	Stopped pumping preflush
0042	4	0	12.6	5.25	0	0	Begin pumping 12% gel.
0043	5	0	12.6	5.25	5	28	12% gel
0045	7	0	12.6	5.25	15	84	12% gel
0048	10	0	12.6	5.25	30	168	Continue cementing
0050	12	0	12.6	5.25	35	196	Stop pumping cement
0051	13	0	-	-	0.5	-	Pump 1/2 barrel H2O chase.
							Pull all tremie out of hole.
			-				End Stage 9.

Observer's Initials: ABF

MWH

IW-1 CEMENT PUMPING DATA

DATE(S): 3/12/2005

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

OWNER: Lee County, FL

DESCRIPTION OF OPERATIONS: Cement casing from 1530 feet bls to the surface.

STAGE NUMBER: 3
START TIME: 2355
FINISH TIME: 114

INITIAL READINGS: 0
(HEADER PRESSURE)

THEORETICAL PRESSURES: Neat: 0.3536 psi/ft; Gel: 0.1946 psi/ft
(CEMENT/ COLLAPSE) 222 psi calculated (YBI using 206 psi)

TIME	TOTAL MINUTES	HEADER PRESSURE	LBS/ GAL	BAR/ MIN	TOTAL BARRELS	TOTAL FT³	COMMENTS
2355	0	0	0	0	-	-	
0007	12	-	12.6	-	56	314	12% gel-cementing stopped due to pump problem
0018	23	-	12.6	~1			12% gel-resume cementing
0028	33	-	12.6	5.5	66	370	12% gel
0035	41	-	12.6	5	97	544	12% gel
0040	46	-	12.6	5	127	712	12% gel
0048	54	-	12.6	5	160	898	12% gel
0052	58	-	12.6	5	175	982	12% gel
058	64	-	12.6	3.5	204	1,144	12% gel
0103	69	-	12.6	5.25	225	1,262	12% gel
0105	71	-	12.6	-	237	1,330	12% gel
0114	80	-	12.6	-	265	1,487	12% gel

Observer's Initials: GY

MWH

IW-1 CEMENT PUMPING DATA

DATE(S): 2/12/2005

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

OWNER: Lee County, FL

DESCRIPTION OF OPERATIONS: Cement casing from 490 feet bls to the surface in one stage using a pressure grout.

STAGE NUMBER: 1
START TIME: 0108
FINISH TIME: 0310

INITIAL READINGS: 0
(HEADER PRESSURE)

THEORETICAL PRESSURES: Neat: 0.3432 psi/ft; Gel: 0.1872 psi/ft
(CEMENT/ COLLAPSE) 56 psi calculated (YBI using 47 psi)

TIME	TOTAL MINUTES	HEADER PRESSURE	LBS/ GAL	BAR/ MIN	TOTAL BARRELS	TOTAL FT³	COMMENTS
0108	0	0	0	0	45	-	Pre-flush
0113	2	-	12.65	4.2	-	-	12% gel
0117	7	6	12.7	4.9	-	-	
0121	10	-	12.7	4.9	52	292	
0128	11	-	12.7	4.9	73	410	
0129	14	11	12.7	4.9	-	-	
0135	17	18	12.7	4.9	-	-	
0139	21	-	12.7	4.9	107	600	
0142	25	-	12.7	4	125	701	
0148	28	27	12.7	4.9	-	-	
0153	32	-	12.7	4.9	158	886	
0156	38	30	12.7	4.9	-	-	
0200	43	-	12.7	4.5	-	-	
0205	52	41	12.7	4.9	200	1,122	
0213	59	48	12.7	4.9	-	-	
0216	64	50	12.7	4	250	1,403	Neat
0224	70	-	15.7	4.9	272	1,526	
0231	76	58	15.7	4	-	-	
0236	79	-	15.7	4	-	-	
0243	83	75	15.6	5.1	335	1,879	

Observer's Initials: GY

TIME	TOTAL MINUTES	HEADER PRESSURE	LBS/ GAL	BAR/ MIN	TOTAL BARRELS	TOTAL FT^3	COMMENTS
0253	87	-	15.7	5	371	2,081	
0302	91	-	15.6	5	403	2,261	
0308	96	82	15.6	3	420	2,356	
0310	99	-	15.7	3	430	2,412	

Observer's Initials: GY .

MWH

IW-1 CEMENTING REC

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

CASING SIZE: 24-inch

ATTACH ALL CALCULATION SHEETS

A	B	C	D	E	F	G	H	I	J	K	L	
DATE	STAGE NO.	CEMENT (ADDITIVES, BLENDS, MIXTURES)	YIELD (FT^3/SK)	QUANTITY PUMPED (FT^3)	THEORETICAL FILL INTERVAL	THEORETICAL FILL FOOTAGE	TAG DEPTH PAD LEVEL	ACTUAL FILL INTERVAL	ACTUAL FILL FOOTAGE	PERCENT FILLED J/G x 100	CUMULATIVE TOTAL (FT^3)	
6/17/05	1a	12% Gel	2.2	847.1	0 to 240	240	visual	0 to 490	-	100%	847.1	
6/17/05	1b	Neat	1.18	903.2	240 to 490	250	-		-		1,750.3	
		The 12% Gel was pressure grouted into the annulus of the 40-inch casing first, and then switched to Neat. The change from 12% Gel to Neat was done based on professional experience in conjunction with the pressure readings at that time and the pressure that 250 feet of Neat cement would create. When cement was observed at the surface, the cementing concluded.										

FORM NO. 04-02

MWH

IW-1 CEMENTING RECORD

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

CASING SIZE: 20-inch

ATTACH ALL CALCULATION SHEETS

A	B	C	D	E	F	G	H	I	J	K	L
DATE	STAGE NO.	CEMENT (ADDITIVES, BLENDS, MIXTURES)	YIELD (FT^3/SK)	QUANTITY PUMPED (FT^3)	THEORETICAL FILL INTERVAL	THEORETICAL FILL FOOTAGE	TAG DEPTH PAD LEVEL	ACTUAL FILL INTERVAL	ACTUAL FILL FOOTAGE	PERCENT FILLED J/G x 100	CUMULA TOTA (FT^3
5/17/05	A	Neat + calcium (1.3 bbl)	1.18	7.3	2,096 to 2,099	3	2,098.5	2,098.5 to 2,099	0.5	17%	7.3
5/17/05	B	Neat + calcium (1.3 bbl)	1.18	7.3	2,095.5 to 2,098.5	3	2,098.5	2,098.5 to 2,098.5	0	0%	14.
5/17/05	C	6.7cft of gravel Neat + Calcium (1.3 bbls)	-	14.0	2092.5 to 2,098.5	6	2,098	2,098 to 2,098.5	0.5	8%	28.
5/17/05	1	Neat (8 bbl)	1.18	44.9	2,082 to 2,098	16	2,098	2,098 to 2,098	0	0%	73.
5/18/05	D	6.7 cft of gravel	-	6.7	2,095 to 2,098	3	2,095	2,095 to 2,098	3	100%	80.
5/18/05	E	Neat + calcium (1.3 bbl)	1.18	7.3	2,092 to 2,095	3	2,095	2,095 to 2,095	0	0%	87.
5/18/05	F	Neat + calcium (1.3 bbl)	1.18	7.3	2,092 to 2,095	3	2,092	2,092 to 2,095	3	100%	94.

FORM NO. 04-02

MWH

IW-1 CEMENTING RECORD

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

CASING SIZE: 20-inch

ATTACH ALL CALCULATION SHEETS

A	B	C	D	E	F	G	H	I	J	K	L
DATE	STAGE NO.	CEMENT (ADDITIVES, BLENDS, MIXTURES)	YIELD (FT^3/SK)	QUANTITY PUMPED (FT^3)	THEORETICAL FILL INTERVAL	THEORETICAL FILL FOOTAGE	TAG DEPTH PAD LEVEL	ACTUAL FILL INTERVAL	ACTUAL FILL FOOTAGE	PERCENT FILLED J/G x 100	CUMUL/ TOT/ (FT^3
5/18/05	G	Neat + calcium (1.3 bbl)	1.18	7.3	2,089 to 2,092	3	2,088.5	2,088.5 to 2,092	3.5	117%	102
5/18/05	H	Neat + calcium (1.3 bbl)	1.18	7.3	2,085.5 to 2,088.5	3	2,079	2,079 to 2,088.5	9.5	317%	109
5/19/05	2	Neat (75 bbl)	1.18	420.0	1,940 to 2,079	139	1,930	1,930 to 2,079	149	107%	529
5/19/05	3	Neat (77 bbls)	1.18	432.0	1,817 to 1,930	113	1,811	1,811 to 1,930	119	105%	961
5/19/05	4	12% gel (168 bbls)	2.2	942.5	1,468 to 1,811	343	1,501	1,501 to 1,811	310	90%	1,90
5/20/05	5	12% gel (132 bbls)	2.2	740.5	1,203 to 1,501	298	1,186	1,501 to 1,186	315	106%	2,64

FORM NO. 04-02

MWH

IW-1 CEMENTING RECORD

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

CASING SIZE: 20-inch

ATTACH ALL CALCULATION SHEETS

A	B	C	D	E	F	G	H	I	J	K	L
DATE	STAGE NO.	CEMENT (ADDITIVES, BLENDS, MIXTURES)	YIELD (FT^3/SK)	QUANTITY PUMPED (FT^3)	THEORETICAL FILL INTERVAL	THEORETICAL FILL FOOTAGE	TAG DEPTH PAD LEVEL	ACTUAL FILL INTERVAL	ACTUAL FILL FOOTAGE	PERCENT FILLED J/G x 100	CUMULA TOTA (FT^3
5/20/05	6	12% gel (132 bbls)	2.2	740.5	888 to 1,186	298	883	883 to 1,186	303	102%	3,38
5/21/05	7	12% gel (151 bbls)	2.2	847.1	542 to 883	342	539	539 to 1,156	344	101%	4,23
5/21/05	8	12% gel (151 bbls)	2.2	847.1	197 to 539	342	186	186 to 539	353	103%	5,07
5/23/05	9	12% gel (35 bbls)	2.2	196.4	107 to 186	79	109	109 to 186	77	97%	5,27
5/23/05	10	12% gel (47 bbls)	2.2	263.7	5 to 109	105	5	5 to 109	104	99%	5,53

FORM NO. 04-02

IW-1 CEMENTING RECORD

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

CASING SIZE: 30-inch

ATTACH ALL CALCULATION SHEETS

A	B	C	D	E	F	G	H	I	J	K	L	
DATE	STAGE NO.	CEMENT (ADDITIVES, BLENDS, MIXTURES)	YIELD (FT^3/SK)	QUANTITY PUMPED (FT^3)	THEORETICAL FILL INTERVAL	THEORETICAL FILL FOOTAGE	TAG DEPTH PAD LEVEL	ACTUAL FILL INTERVAL	ACTUAL FILL FOOTAGE	PERCENT FILLED J/G x 100	CUMULATIVE TOTAL (FT^3)	
3/10/05	1a	Neat	1.18	976.1	1280 to 1530	250	-	825 to 1530	-	91%	976.1	
3/10/05	1b	12% Gel	2.2	2,389.9	755 to 1280	525	825		705		3,366.0	
		The 12% Gel was pressure grouted into the annulus of the 30-inch casing first, and then switched to Neat. The change from 12% Gel to Neat was done based on professional experience in conjunction with the pressure readings at that time and the pressure that 250 feet of Neat cement would create.										
3/11/05	2	12% Gel	2.2	2,115.0	340 to 825	485	439	439 to 825	386	80%	5,481.0	
3/12/05	3	12% Gel	2.2	1,487.0	0 to 439	439	439	0 to 439	439	100%	6,968.0	

FORM NO. 04-02

IW-1 CEMENTING RECORD

LEE COUNTY, THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

CONTRACTOR: Youngquist Brothers, Inc.

PROJECT MANAGER: Mark Chandler

CASING SIZE: 40-inch

ATTACH ALL CALCULATION SHEETS

A	B	C	D	E	F	G	H	I	J	K	L	
DATE	STAGE NO.	CEMENT (ADDITIVES, BLENDS, MIXTURES)	YIELD (FT^3/SK)	QUANTITY PUMPED (FT^3)	THEORETICAL FILL INTERVAL	THEORETICAL FILL FOOTAGE	TAG DEPTH PAD LEVEL	ACTUAL FILL INTERVAL	ACTUAL FILL FOOTAGE	PERCENT FILLED J/G x 100	CUMULATIVE TOTAL (FT^3)	
2/12/05	1a	12% Gel	2.2	1,403.0	56 to 298	242	visual	0 to 490	-	100%	1,403.0	
2/12/05	1b	Neat	1.18	1,009.0	298 to 490	192	-		-		2,412.0	
		The 12% Gel was pressure grouted into the annulus of the 40-inch casing first, and then switched to Neat. The change from 12% Gel to Neat was done based on professional experience in conjunction with the pressure readings at that time and the pressure that 250 feet of Neat cement would create. When cement was observed at the surface, the cementing concluded. The actual cement volume used to theoretical cement volume calculated ratio is 88%. In a borehole, where the fluid is mud, the mud channels the cement pushing it upwards. The cement is visible at the surface before it gives a complete fill of the theoretical borehole.										

FORM NO. 04-02

Appendix F

Lithologic Descriptions

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	Lithologic Description
0 – 10	Shell fragments (80%): yellowish gray (5Y 8/1), light olive gray (5Y 6/1), white (N9) and very light gray (N8); moderate to well sorted; 1 to 5 mm in diameter; some dissolution features noted; < 1% organics (wood/plant fibers), < 1% very fine phosphate sand, < 1% metallic blue and lime green paint flakes Clay (10%): grayish olive green (10Y 4/2).
10 – 50	Shell fragments (90%): yellowish gray (5Y 8/1); moderately well sorted, 60% of fragments are granular, 40% of fragments are thin flat pieces and pelletal; some whole bivalvia noted (approximately to 5 mm in diameter), < 1% organics (wood/plant fibers and insects), < 1% very fine phosphatic sand, < 1% lime green paint flakes. Clay (10%): grayish olive green (10Y 4/2).
50 – 100	Clay (80%): grayish olive green (10Y 4/2); very soft with ~5% phosphatic silt and sand. Shell fragments (20%): yellowish gray (5Y 8/1); moderate to well sorted, 50% of fragments are granular, 50% of fragments are thin flat pieces and pelletal.
100 – 140	Clay (50%): grayish olive green (10Y 4/2); very soft with ~5% phosphatic sand and silt. Shell fragments (50%): yellowish gray (5Y 8/1); moderately well sorted; fragments are thin flat pieces and pelletal; some whole bivalvia noted (approximately to 5 mm in diameter).
140 – 170	Shell fragments (50%): pale greenish yellow (10Y 8/2); moderate sorting. Sand (30%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); intergranular calcite cementation; grade is medium to coarse (angular to subangular). Clay (20%): light greenish gray (5GY 8/1); plastic.
170 – 200	Clay (50%): dark greenish gray (5GY 4/1); very soft. Shell fragments (30%): pale greenish yellow (10Y 8/2); moderate sorting. Sand (20%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); intergranular calcite cementation; grade is very fine to medium (angular to subround).
200 – 310	Shell fragments (70%): yellowish gray (5Y 8/1); moderate sorting. Sand (20%); yellowish gray (5Y 7/2) and pale olive (10Y 6/2); grains consist of quartz and phosphate with intergranular calcite cementation; grade is fine to medium (angular to subround). Clay (10%): yellowish gray (5Y 8/1).
310 – 330	Clay (60%): greenish gray (5G 6/1): very soft. Shell fragments (35%): yellowish gray (5Y 8/1); moderate sorting. Sand (5%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grains are predominantly phosphate; grade is very fine to fine (subangular to subround).

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	Lithologic Description
330 – 410	Clay (85%): yellowish gray (5Y 7/2); very soft. Limestone (10%): yellowish gray (5Y 8/1); wackestone; friable; moderate permeability. Sand (5%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grains are predominantly phosphate; grade is fine (subangular to subround).
410 – 450	Clay (60%): yellowish gray (5Y 7/2); very soft. Limestone (40%): yellowish gray (5Y 8/1); wackestone; friable; moderate permeability.
450 – 470	Limestone (60%): light olive gray (5Y 6/1); wackestone with phosphate; friable; moderate permeability; some recrystalization; phosphate grade is medium sand. Clay (30%): yellowish gray (5Y 8/1); very soft. Shell fragments (10%): very light gray (N8); moderate sorting.
410 – 450	Limestone (60%): light olive gray (5Y 6/1); wackestone; friable; moderate permeability; some recrystalization. Clay (30%): yellowish gray (5Y 8/1); very soft. Shell fragments (10%): very light gray (N8); well sorted.
450 – 500	Limestone (90%): light olive gray (5Y 6/1); wackestone; friable; moderate permeability; some recrystalization. Clay (5%): yellowish gray (5Y 8/1); very soft. Shell fragments (5%): very light gray (N8); well sorted.
500 - 510	Limestone: light gray (N7) to medium light gray (N6); moldic and vugular porosity (20%); possibly high permeability; grain type is skeletal and biogenic, good induration with sparry calcite cement, shell fragments (10%), fossil molds (10%), phosphatized casts (<5%).
510 - 520	Limestone: light gray (N7) to medium light gray (N6); moldic and vugular porosity (20%); possibly high permeability; grain type is skeletal, cast and biogenic, good induration with sparry calcite cement, shell fragments (10%), fossil molds (10%), phosphatized casts (<5%).
520 - 530	Limestone: white (N9) to light olive gray (5 Y 6/1); moldic and vugular porosity (20%); possibly high permeability; grain type is skeletal, cast and biogenic, good induration with sparry calcite and micrite cement, fossil molds (10%).
530 - 540	Limestone: white (N9) to light olive gray (5 Y 6/1); moldic and vugular porosity (20%); possibly high permeability; grain type is skeletal, cast and biogenic, good induration with sparry calcite and micrite cement, fossil molds (10%).
540 - 550	Limestone: white (N9) to light olive gray (5 Y 6/1); moldic and vugular porosity (20%); possibly high permeability; grain type is cast and biogenic, good induration with sparry calcite cement, fossil molds (10%).
550 - 560	Limestone: white (N9) to light olive gray (5 Y 6/1); moldic and vugular porosity (20%); possibly high permeability; grain type is cast and biogenic, good induration with sparry calcite cement, fossil molds (10%).
560 - 570	Limestone: white (N9) to light olive gray (5 Y 6/1); moldic and vugular porosity (20%); possibly high permeability; grain type is cast and biogenic, good induration with sparry calcite cement, fossil molds (10%), bryozoa.
570 - 580	Limestone: white (N9) to light olive gray (5 Y 6/1); moldic and vugular porosity (20%); possibly high permeability; grain type is cast and biogenic, good induration with sparry calcite cement, fossil molds (10%), mollusks.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	Lithologic Description
580 – 590	Limestone: yellowish gray (5Y 7/2); moldic and vugular porosity (15%); grain type is cast and biogenic, poor to moderate induration with sparry calcite and micrite cement, very fine grain phosphatic sand, (<5%); some recrystallization; moderate intergranular permeability, calcareous silt (<10%), fossiliferous.
590 – 600	Limestone: yellowish gray (5Y 7/2); moldic and vugular porosity (10%); grain type is skeletal cast and biogenic, good to moderate induration with sparry calcite and micrite cement, some low recrystalization, fossiliferous. Dolostone (10%): light gray (N7); indurated; crystalline; possibly low permeability.
600 – 620	Fossiliferous Limestone: yellowish gray (5Y 8/1); grainstone; vugular and moldic porosity (15%), grain type is biogenic, good induration with sparry calcite cement, unconsolidated; well sorted and rounded sand sized grains; intergranular permeability. Dolostone (5%): light gray (N7); indurated; crystalline; possibly low permeability.
620 – 640	Limestone (50%) and Calcareous Silt (50%), yellowish gray (5Y 8/1); grainstone; unconsolidated; intergranular porosity. Unconsolidated with micrite matrix.
640 – 660	Limestone: yellowish gray (5Y 8/1); grainstone; intergranular and moldic porosity (<10%), grain type is biogenic and crystal, good induration with sparry calcite and micrite cement. Dolostone (10%): light gray (N7); good induration; crystalline.
660 - 700	Fossiliferous Limestone: yellowish gray (5Y 8/1), grainstone, intergranular and moldic porosity (20%), grain type is biogenic, skeletal cast, and calcilutite, poor induration with micrite cement, fossiliferous, benthic foraminifera, very soft formation.
700 - 720	Fossiliferous Limestone: yellowish gray (5Y 8/1), grainstone, intergranular and moldic porosity (20%), grain type is biogenic, skeletal cast, and calcilutite, poor to moderate induration with sparry calcite and micrite cement, fossiliferous, benthic foraminifera, spicules, bryozoa, very soft formation. Much dredging through this interval.
720 – 770	Fossiliferous Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity (15%), grain type is biogenic and skeletal cast, unconsolidated to poor induration with micrite cement, fossiliferous, benthic foraminifera, spicules, bryozoa, very soft formation with much dredging through this interval.
770 – 800	Fossiliferous Limestone: pale yellowish brown (10YR 6/2); intergranular and moldic porosity (15%), grain type is biogenic and skeletal cast, unconsolidated to poor induration with micrite cement, fossiliferous, benthic foraminifera, spicules, bryozoa, echinoids, mollusks.
800 – 820	Fossiliferous Limestone: pale yellowish brown (10YR 6/2); intergranular and moldic porosity (15%), grain type is biogenic and skeletal cast, poor induration with micrite cement, fossiliferous, benthic foraminifera, spicules, bryozoa, echiniods, mollusks.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	**Lithologic Description**
820 – 840	Fossiliferous Limestone: pale yellowish brown (10YR 6/2); intergranular and moldic porosity (10%), grain type is biogenic and skeletal cast, poor induration with micrite cement, fossiliferous, benthic foraminifera, spicules, bryozoa, echinoids, mollusks.
840 – 860	Fossiliferous Limestone: pale yellowish brown (10YR 6/2); intergranular and moldic porosity, grain type is biogenic and skeletal cast, poor induration with micrite cement, fossiliferous, benthic foraminifera, spicules, bryozoa, echinoids, mollusks.
860 – 890	Limestone: yellowish gray (5Y 8/1); grainstone; poorly consolidated; well sorted and rounded sand sized grains; intergranular permeability. Marl (80%): yellowish gray (5Y 8/1); very soft; low permeability
890 – 920	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity, grain type is biogenic and skeletal cast, poor to moderate induration with micrite cement, fossiliferous. No sand or dolostone in samples.
820 – 940	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity, grain type is biogenic and skeletal cast, poor to moderate induration with micrite cement, fossiliferous. No sand or dolostone in samples.
940 – 960	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity (10%), grain type is biogenic and skeletal cast, moderate induration with micrite and some sparry calcite cement, clay (50%): yellowish gray (5Y 8/1); moderately soft,low permeability
960 – 980	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity (10%), grain type is biogenic and skeletal cast, moderate induration with micrite and some sparry calcite cement, clay (30%): yellowish gray (5Y 8/1); moderately soft,low permeability
980 – 1,000	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity (10%), grain type is biogenic and skeletal cast, moderate induration with micrite and some sparry calcite cement, clay (30%): yellowish gray (5Y 8/1); moderately soft, low permeability
1,000 – 1,030	Limestone: yellowish gray (5Y 8/1); intergranular porosity, grain type is calcilutite, poor induration with micrite cement, clay (10%): yellowish gray (5Y 8/1); moderately soft; low permeability.
1,030 – 1,040	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity, grain type is biogenic and calcilutite, moderate induration with micrite and sparry calcite cement,
1,040 – 1,060	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity, grain type is biogenic and calcilutite, moderate induration with micrite and sparry calcite cement,
1,060 – 1,080	Limestone: yellowish gray (5Y 8/1); intergranular and moldic porosity, grain type is biogenic and calcilutite, moderate induration with micrite and sparry calcite cement,

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	Lithologic Description
1,080 – 1,100	Limestone: pale yellowish brown (10YR 6/2); moderately indurated; packstone; poorly cemented; some recrystallization; fossiliferous; bivalvia chione cancellata present (1-2 mm) with some 1 – 2 mm phosphate flecks; moderate permeability.
1,100 – 1,120	Limestone: yellowish gray (5Y 8/1) to light olive gray (5Y 6/1); indurated; poorly consolidated; wackestone; fossiliferous; poorly cemented; moderate permeability
1,120 – 1,150	Limestone: yellowish gray (5Y 8/1); indurated; moderate to well consolidated; wackestone; fossiliferous; cross bedding present with some phosphate; moderate permeability
1,150 – 1,170	Dolostone: pale yellowish brown (10YR 6/2); microcrystalline; very well indurated; low permeability.
1,170 – 1,180	Dolostone: light olive gray (5Y 6/1) to medium gray (N5); crystalline; very well indurated; slightly vuggy; low permeability.
1,180 – 1,190	Dolostone: pale yellowish brown (10YR 6/2); microcrystalline; very well indurated; slightly vuggy; low permeability.
1,190 – 1,200	Limestone: yellowish gray (5Y 8/1); grainstone to boundstone; indurated; well cemented; molds and casts prevalent; moderate to low permeability.
1,200 – 1,210	Marl (50%): yellowish gray (5Y 8/1); very soft; low plasticity; fossiliferous; moderate permeability. Limestone (50%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,210 – 1,220	Limestone: yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,220 – 1,280	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,280 – 1,300	Sandstone: yellowish gray (5Y 8/1); well sorted and rounded coarse sand sized grains comprised of quartz; unconsolidated; intergranular permeability.
1,300 – 1,310	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,310 – 1,320	Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; well consolidated; friable; intergranular permeability.

*Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	Lithologic Description
1,320 – 1,350	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,350 – 1,420	Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; well consolidated; friable; intergranular permeability.
1,420 – 1,430	Limestone (80%): yellowish gray (5Y 8/1); wackestone; moderately soft; well consolidated; moderate permeability. Limestone (20%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand; moderately sorted; subangular; intergranular permeability.
1,430 – 1,440	Dolostone (90%): light olive gray (5Y 6/1); crystalline; very well indurated; with 1 – 2 mm dolomitic limestone; yellowish gray (5Y 8/1); wackestone inclusions; moderate to low permeability. Limestone (10%): yellowish gray (5Y 8/1); wackestone; moderately soft; well consolidated; moderate permeability.
1,440 – 1,460	Dolostone (50%): light olive gray (5Y 6/1); crystalline; very well indurated; with 1 – 2 mm dolomitic limestone; yellowish gray (5Y 8/1); wackestone inclusions; moderate to low permeability. Limestone (50%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.
1,460 – 1,480	Clay (80%): light bluish gray (5B 7/1); soft; moderate plasticity; low permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; moderately soft; moderately consolidated; friable; moderate permeability.
1,480 – 1,490	Limestone: yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.
1,490 – 1,500	Limestone (90%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Mudstone (10%): light olive gray (5Y 6/1); moderately soft; well consolidated; low to moderate permeability.
1,500 – 1,510	Limestone: yellowish gray (5Y 8/1); wackestone; moderately hard to hard; well consolidated; some dolomitization and recrystallization; moderate permeability.
1,510 – 1,520	Limestone (80%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability. Limestone (20%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT DUAL ZONE MONITOR WELL

Depth* (feet)	Lithologic Description
1,520 – 1,530	Limestone: yellowish gray (5Y 8/1); wackestone; moderately hard to hard; well consolidated; some dolomitization and recrystallization; moderate permeability.
1,530 – 1,540	Dolostone: bluish white (5B 9/1) to medium bluish gray (5B 5/1); microcrystalline; very well indurated; with sucrosic; yellowish gray (5Y 8/1); finely crystalline dolomite; slightly sucrosic permeability.
1,540 – 1,550	Sandstone: pale yellowish brown (10 YR 6/2); unconsolidated; quartzite; medium to coarse grained; moderately to well sorted; subangular; intergranular permeability.
1,550 – 1,570	Limestone (50%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.
1,570 – 1,580	Limestone: yellowish gray (5Y 8/1); grainstone; moderately hard; poorly to moderately consolidated; cementation; intergranular permeability.
1,580 – 1,600	Limestone (90%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability. Limestone (10%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.
1,600 – 1,620	Limestone (90%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Limestone (10%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.

*****Depth refers to depth below land surface (bls).

INJECTION WELL 1

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
0 – 40	Shell fragments: yellowish gray (5Y 7/2); moderate to well sorted; 1 to 5 mm in diameter; some dissolution features noted; <1% phosphate from 20 to 40 feet bls; phosphate grade is comprised of medium sand sized material.
40 – 80	Clay (60%): grayish olive green (10Y 4/2); soft and sticky; no noticeable plasticity; low permeability. Shell fragments (40%): yellowish gray (5Y 7/2); moderate to well sorted; fragments are thin flat pieces and pelletal; some whole bivalvia noted (approximately to 10 mm in diameter).
80 – 100	Clay (60%): grayish olive green (10Y 4/2); soft and sticky; no noticeable plasticity; low permeability. Shell fragments (40%): yellowish gray (5Y 7/2); moderate to well sorted; fragments are thin flat pieces and pelletal; some whole bivalvia noted (approximately to 10 mm in diameter).
100 – 130	Shell fragments (50%): pale greenish yellow (10Y 8/2); moderate sorting. Sand (30%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grains are predominantly quartz and phosphate; intergranular calcite cementation noted; grade is comprised of medium to coarse sand (angular to subangular) with a fine grained matrix. Clay (20%): yellowish gray (5Y 7/2); soft; low permeability.
130 – 160	Shell fragments (50%): pale greenish yellow (10Y 8/2); moderate sorting. Sand (30%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); intergranular calcite cementation ; grains consist of quartz and phosphate with phosphate more abundant in this interval than above; calcite cementation is intergranular; grade is comprised of medium to coarse sand (angular to subangular) with a very fine grained matrix. Clay (20%): light greenish gray (5GY 8/1); soft; low permeability.
160 – 170	Clay (50%): pale olive (10Y 6/2); soft; low permeability. Shell fragments (30%): pale greenish yellow (10Y 8/2); moderate sorting. Sand (20%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grains consist of quartz and phosphate; intergranular calcite cementation; grade is comprised of fine to medium sand (angular to subangular) with a very fine grained matrix.
170 – 200	Clay (50%): dark greenish gray (5GY 4/1); very soft; low permeability. Shell fragments (30%): pale greenish yellow (10Y 8/2); moderate sorting. Sand (20%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); intergranular calcite cementation; grade is comprised of very fine to medium sand (angular to subround) with a very fine grained matrix.
200 – 250	Shell fragments (70%): yellowish gray (5Y 8/1); moderate sorting. Sand (20%); yellowish gray (5Y 7/2) and pale olive (10Y 6/2); grains consist of quartz and phosphate with intergranular calcite cementation; grade is comprised of fine to medium sand (angular to subround) with a very fine grained matrix. Clay (10%): yellowish gray (5Y 8/1); very soft; low permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
250 – 300	Sand (60%); yellowish gray (5Y 7/2) and pale olive (10Y 6/2); quartz and phosphate grains with intergranular calcite cementation; grade is comprised of fine to coarse sand (angular to subround) with a very fine grained matrix; bivalve casts noted on one particle. Clay (30%): yellowish gray (5Y 8/1); very soft; low permeability. Shell fragments (10%): yellowish gray (5Y 8/1); moderate sorting.
300 – 330	Clay (60%): greenish gray (5G 6/1): very soft; low permeability. Shell fragments (35%): yellowish gray (5Y 8/1); moderate sorting. Sand (5%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grains are predominantly phosphate; grade is comprised of fine sand (subangular to subround).
330 – 430	Clay (85%): yellowish gray (5Y 7/2); very soft; low permeability. Limestone (10%): yellowish gray (5Y 8/1); wackestone; friable; moderate permeability. Sand (5%); yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grains are predominantly phosphate; grade is comprised of fine sand (subangular to subround).
430 – 450	Clay (60%): yellowish gray (5Y 7/2); very soft; low permeability. Limestone (40%): yellowish gray (5Y 8/1); wackestone; friable; moderate permeability.
450 – 460	Limestone (60%): light olive gray (5Y 6/1); wackestone; friable; moderate permeability; calcite cementation; some recrystalization. Clay (30%): yellowish gray (5Y 8/1); very soft; low permeability. Shell fragments (10%): very light gray (N8); moderate sorting.
460 – 470	Limestone (60%): light olive gray (5Y 6/1); wackestone with phosphate; friable; moderate permeability; calcite cementation; some recrystalization; phosphate grade is comprised of medium sand. Clay (30%): yellowish gray (5Y 8/1); very soft; low permeability. Shell fragments (10%): very light gray (N8); moderate sorting.
470 – 480	Limestone (60%): light olive gray (5Y 6/1); wackestone; friable; moderate permeability; calcite cementation; some recrystalization. Clay (30%): yellowish gray (5Y 8/1); very soft; low permeability. Shell fragments (10%): very light gray (N8); moderate sorting.
480 – 510	Limestone (90%): light olive gray (5Y 6/1); wackestone; friable; moderate permeability; calcite cementation; some recrystalization. Clay (5%): yellowish gray (5Y 8/1); very soft; low permeability. Shell fragments (5%): very light gray (N8); well sorted.
510 – 570	Limestone: very light gray (N8) and greenish gray (5GY 6/1); fossiliferous grainstone; indurated; low to moderate intergranular and moldic permeability.
570 – 580	Clay (50%): white (N9); very soft; low plasticity; low permeability. Dolostone (30%): light gray (N7); indurated; crystalline; low permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; poorly consolidated; some phosphate granules; some recrystallization; moderate intergranular permeability.

*****Depth refers to depth below land surface (bls).

INJECTION WELL 1

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	**Lithologic Description**
580 – 590	Dolostone (60%): light gray (N7); indurated; crystalline; low permeability. Limestone (40%): yellowish gray (5Y 8/1); wackestone; poorly consolidated; some phosphate granules; some recrystallization; moderate intergranular permeability.
590 – 600	Limestone (90%): yellowish gray (5Y 8/1); grainstone; fossiliferous; well cemented and consolidated; intergranular permeability. Dolostone (10%): light gray (N7); indurated; crystalline; low permeability.
600 – 620	Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted and rounded sand sized grains; intergranular permeability. Dolostone (50%): light gray (N7); indurated; crystalline; low permeability.
620 – 660	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted and rounded sand sized grains; intergranular permeability. Dolostone (20%): light gray (N7); indurated; crystalline; low permeability.
660 – 740	Limestone (40%): yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted and rounded sand sized grains; intergranular permeability. Limestone (30%): yellowish gray (5Y 8/1); grainstone; well cemented; consolidated; fossiliferous; intergranular permeability. Dolostone (30%): light gray (N7); indurated; crystalline; low permeability.
740 – 750	Limestone: yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted and rounded sand sized grains; intergranular permeability.
750 – 760	Limestone (70%): yellowish gray (5Y 8/1); grainstone; well cemented and consolidated; fossiliferous; intergranular permeability. Limestone (40%): yellowish gray (5Y 8/1); unconsolidated; well sorted; rounded sand sized grains; intergranular permeability. Dolostone (30%): light gray (N7); indurated; crystalline; low permeability.
760 – 820	Marl (30%): yellowish gray (5Y 8/1); very soft; low permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted and rounded sand sized grains; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); grainstone; fossiliferous; well cemented and consolidated; intergranular permeability.
820 – 880	Limestone (60%): yellowish gray (5Y 8/1); wackestone; poorly consolidated; some phosphate granules; some recrystallization; moderate intergranular permeability; Limestone (20%): yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted; rounded sand sized grains; intergranular permeability. Dolostone (20%): light gray (N7); indurated; crystalline; low permeability.
880 – 890	Marl (80%): yellowish gray (5Y 8/1); very soft; low permeability. Limestone (20%): yellowish gray (5Y 8/1); grainstone; unconsolidated; well sorted and rounded sand sized grains; intergranular permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
890 – 950	Limestone (60%): yellowish gray (5Y 8/1); wackestone; poorly consolidated; some phosphate granules; some recrystallization; moderate intergranular permeability. Sandstone (20%): yellowish gray (5Y 8/1); well sorted and rounded coarse sand sized grains comprised of quartz; unconsolidated; intergranular permeability. Dolostone (20%): light gray (N7); indurated; crystalline; low permeability.
950 – 1,000	Clay (50%): yellowish gray (5Y 8/1); moderately soft and moderate plasticity; low permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; fossiliferous; well cemented and consolidated; intergranular permeability.
1,000 – 1,010	Limestone (50%): yellowish gray (5Y 8/1); indurated; moderately consolidated packstone; poorly cemented; moderate permeability. Clay (50%): light olive gray (5Y 6/1); moderately soft and high plasticity; low permeability.
1,010 – 1,040	Limestone: yellowish gray (5Y 8/1); indurated; moderately consolidated packstone; poorly cemented; moderate permeability.
1,040 – 1,080	Limestone: light olive gray (5Y 6/1); indurated; moderately consolidated packstone; with some 1 – 2 mm phosphate flecks; poorly cemented; moderate permeability.
1,080 – 1,100	Limestone: pale yellowish brown (10YR 6/2); moderately indurated; packstone; poorly cemented; some recrystallization; fossiliferous; bivalvia chione cancellata present (1-2 mm) with some 1 – 2 mm phosphate flecks; moderate permeability.
1,100 – 1,120	Limestone: yellowish gray (5Y 8/1) to light olive gray (5Y 6/1); indurated; poorly consolidated; wackestone; fossiliferous; poorly cemented; moderate permeability
1,120 – 1,150	Limestone: yellowish gray (5Y 8/1); indurated; moderate to well consolidated; wackestone; fossiliferous; cross bedding present with some phosphate; moderate permeability
1,150 – 1,170	Dolostone: pale yellowish brown (10YR 6/2); microcrystalline; very well indurated; low permeability.
1,170 – 1,180	Dolostone: light olive gray (5Y 6/1) to medium gray (N5); crystalline; very well indurated; slightly vuggy; low permeability.
1,180 – 1,190	Dolostone: pale yellowish brown (10YR 6/2); microcrystalline; very well indurated; slightly vuggy; low permeability.
1,190 – 1,200	Limestone: yellowish gray (5Y 8/1); grainstone to boundstone; indurated; well cemented; molds and casts prevalent; moderate to low permeability.
1,200 – 1,210	Marl (50%): yellowish gray (5Y 8/1); very soft; low plasticity; fossiliferous; moderate permeability. Limestone (50%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	**Lithologic Description**
1,210 – 1,220	Limestone: yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,220 – 1,280	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,280 – 1,300	Sandstone: yellowish gray (5Y 8/1); well sorted and rounded coarse sand sized grains comprised of quartz; unconsolidated; intergranular permeability.
1,300 – 1,310	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,310 – 1,320	Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; well consolidated; friable; intergranular permeability.
1,320 – 1,350	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; soft; moderately consolidated; moderate permeability.
1,350 – 1,420	Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand to fine gravel; moderately sorted; subangular; some granular phosphate present; intergranular permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; well consolidated; friable; intergranular permeability.
1,420 – 1,430	Limestone (80%): yellowish gray (5Y 8/1); wackestone; moderately soft; well consolidated; moderate permeability. Limestone (20%): yellowish gray (5Y 8/1); grainstone; unconsolidated; coarse sand; moderately sorted; subangular; intergranular permeability.
1,430 – 1,440	Dolostone (90%): light olive gray (5Y 6/1); crystalline; very well indurated; with 1 – 2 mm dolomitic limestone; yellowish gray (5Y 8/1); wackestone inclusions; moderate to low permeability. Limestone (10%): yellowish gray (5Y 8/1); wackestone; moderately soft; well consolidated; moderate permeability.
1,440 – 1,460	Dolostone (50%): light olive gray (5Y 6/1); crystalline; very well indurated; with 1 – 2 mm dolomitic limestone; yellowish gray (5Y 8/1); wackestone inclusions; moderate to low permeability. Limestone (50%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
1,460 – 1,480	Clay (80%): light bluish gray (5B 7/1); soft; moderate plasticity; low permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; moderately soft; moderately consolidated; friable; moderate permeability.
1,480 – 1,490	Limestone: yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.
1,490 – 1,500	Limestone (90%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Mudstone (10%): light olive gray (5Y 6/1); moderately soft; well consolidated; low to moderate permeability.
1,500 – 1,510	Limestone: yellowish gray (5Y 8/1); wackestone; moderately hard to hard; well consolidated; some dolomitization and recrystallization; moderate permeability.
1,510 – 1,520	Limestone (80%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability. Limestone (20%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.
1,520 – 1,530	Limestone: yellowish gray (5Y 8/1); wackestone; moderately hard to hard; well consolidated; some dolomitization and recrystallization; moderate permeability.
1,530 – 1,540	Dolostone: bluish white (5B 9/1) to medium bluish gray (5B 5/1); microcrystalline; very well indurated; with sucrosic; yellowish gray (5Y 8/1); finely crystalline dolomite; slightly sucrosic permeability.
1,540 – 1,550	Sandstone: pale yellowish brown (10 YR 6/2); unconsolidated; quartzite; medium to coarse grained; moderately to well sorted; subangular; intergranular permeability.
1,550 – 1,570	Limestone (50%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability. Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.
1,570 – 1,580	Limestone: yellowish gray (5Y 8/1); grainstone; moderately hard; poorly to moderately consolidated; cementation; intergranular permeability.
1,580 – 1,600	Limestone (90%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability. Limestone (10%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
1,600 – 1,620	Limestone (90%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Limestone (10%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.
1,620 – 1,630	Limestone (90%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Dolostone (10%): light bluish gray (5B 7/1); microcrystalline; very well indurated; moderate to low permeability.
1,630 – 1,650	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.
1,650 – 1,680	Sandstone: pale yellowish brown (10 YR 6/2); unconsolidated; quartzite; medium to coarse grained; moderately to well sorted; subangular; intergranular permeability.
1,680 – 1,710	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Limestone (20%): yellowish gray (5Y 8/1); wackestone; moderately soft to hard; well consolidated; moderate permeability.
1,710 – 1,760	Limestone (50%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability. Dolostone (40%): light olive gray (5Y 6/1) to medium bluish gray (5B 5/1); microcrystalline; very well indurated; with yellowish gray (5Y 8/1) dolomitized wackestone inclusions; indurated; moderate to low permeability. Limestone (10%): yellowish gray (5Y 8/1); wackestone; moderately soft; well consolidated; moderate permeability.
1,760 –1,770	Dolostone (95%): dark yellowish brown (10 YR 4/2) to grayish black (N2); microcrystalline to finely crystalline; very well indurated; microcrystalline calcite inclusions; slightly vuggy with yellowish gray (5Y 8/1) medium crystalline dolomite crystals. Limestone (5%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium to coarse sand; moderate sorting; subangular; intergranular permeability.
1,770 – 1,780	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated; intergranular permeability. Dolostone (20%): dark yellowish brown (10 YR 4/2) to grayish black (N2); microcrystalline to finely crystalline; very well indurated; microcrystalline calcite inclusions; slightly vuggy with yellowish gray (5Y 8/1) medium crystalline dolomite crystals.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
1,780 – 1,790	Limestone: yellowish gray (5Y 8/1); grainstone; unconsolidated; intergranular permeability.
1,790 – 1,800	Sandstone: pale yellowish brown (10YR 6/2); unconsolidated; fine to medium sand; well sorted; subangular; same grade bioclastics present; intergranular permeability.
1,800 – 1,810	Dolostone (80%): pale yellowish brown (10 YR 6/2); finely crystalline; indurated. Limestone (20%): yellowish gray (5Y 8/1); grainstone; intergranular permeability.
1,810 – 1,830	Limestone: yellowish gray (5Y 8/1); packstone; unconsolidated; intergranular permeability.
1,830 – 1,960	Limestone (95%): yellowish gray (5Y 8/1); grainstone; unconsolidated; medium crystalline; moderately sorted; intergranular permeability. Dolostone (5%): grayish black (N2) to black (N1); bioclastic material is the size of coarse sand to very fine pebbles (angular to subangular); low apparent permeability.
1,960 – 1,990	Limestone (95%): pale yellowish brown (10YR 6/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (5%): grayish black (N2) to black (N1); crystalline; unconsolidated; low apparent permeability.
1,990 – 2,020	Limestone (90%): yellowish brown (10YR 6/2) and dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (10%): yellowish gray (5Y 7/2) to light olive gray (5Y 5/2) and grayish black (N2) to black (N1); unconsolidated; crystalline; low apparent permeability.
2,020 – 2,030	Limestone (90%): yellowish brown (10YR 6/2) and dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; some larger fragments are indurated and exhibit a microcrystalline matrix; intergranular permeability. Dolostone (10%): yellowish gray (5Y 7/2) to light olive gray (5Y 5/2) and grayish black (N2) to black (N1); unconsolidated; crystalline to microcrystalline; indurated; low apparent permeability.
2,030 – 2,040	Limestone (90%): yellowish brown (10YR 6/2) and dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (10%): yellowish gray (5Y 7/2) to light olive gray (5Y 5/2) and grayish black (N2) to black (N1); unconsolidated; crystalline; low apparent permeability.
2,040 – 2,060	Limestone (80%): yellowish brown (10YR 6/2) and dark yellowish gray (5Y 7/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (20%): dark yellowish brown (10YR 4/2) and medium light gray (N6) with grayish black (N2) to black (N1); unconsolidated; microcrystalline; indurated; low apparent permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
2,060 – 2,100	Limestone (95%): yellowish brown (10YR 6/2) and dark yellowish gray (5Y 7/2); grainstone; unconsolidated bioclastics; intergranular permeability; some. Dolostone (5%): medium light gray (N6) with some grayish black (N2) to black (N1); microcrystalline; indurated; low apparent permeability.
2,100 – 2,110	Limestone (90%): yellowish brown (10YR 6/2) and dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (10%): dark yellowish brown (10YR 4/2) with grayish black (N2) to black (N1); microcrystalline; low apparent permeability.
2,110 – 2,120	Dolostone (90%): dark yellowish brown (10YR 4/2) with grayish black (N2) to black (N1); larger fragments are indurated and exhibit a microcrystalline matrix; low apparent permeability. Limestone (10%): yellowish brown (10YR 6/2) and dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability.
2,120 – 2,130	Limestone (90%): yellowish brown (10YR 6/2) and dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (10%): dark yellowish brown (10YR 4/2) with grayish black (N2) to black (N1); microcrystalline; low apparent permeability.
2,130 – 2,160	Limestone (60%): dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability. Dolostone (40%): dark gray (N3), grayish black (N2), and black (N1; indurated; low apparent permeability; some small scale vugs noted.
2,160 – 2,200	Limestone (80%): dark yellowish brown (10YR 4/2); grainstone; unconsolidated; bioclastics; intergranular permeability. Dolostone (20%): dark gray (N3) with grayish black (N2) to black (N1); indurated; low apparent permeability; some small scale vugs noted.
2,200 – 2,230	Limestone (60%): dark yellowish brown (10YR 4/2); grainstone; unconsolidated; bioclastics; intergranular permeability. Dolostone (40%): dark gray (N3) and grayish black (N2) to black (N1); indurated with a crystalline to microcrystalline fabric; low apparent permeability.
2,230 – 2,240	Dolostone (60%): dark gray (N3) and grayish black (N2) to black (N1); indurated; crystalline to microcrystalline; low apparent permeability; small scale vugs noted. Limestone (40%): dark yellowish brown (10YR 4/2); grainstone; unconsolidated; bioclastics; intergranular permeability.
2,240 – 2,250	Dolostone (50%): medium light gray (N6) and grayish black (N2) to black (N1); crystalline to microcrystalline; low apparent permeability. Limestone (50%): dark yellowish brown (10YR 4/2); grainstone; unconsolidated bioclastics; intergranular permeability.

*****Depth refers to depth below land surface (bls).

INJECTION WELL 1

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
2,250 – 2,260	Dolostone: mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1); crystalline; well indurated; low apparent permeability.
2,260 – 2,270	Dolostone (60%): mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (40%): dark yellowish brown (10YR 4/2); dolomitic grainstone, unconsolidated bioclasts; intergranular permeability.
2,270 – 2,290	Dolostone (80%): mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (20%): dark yellowish brown (10YR 4/2); dolomitic grainstone, unconsolidated bioclasts; intergranular permeability.
2,290 – 2,300	Dolostone (95%): medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (5%): yellowish gray (5Y 7/2); wackestone, soft, well consolidated; low apparent permeability.
2,300 – 2,310	Dolostone (80%): mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (20%): dark yellowish brown (10YR 4/2); dolomitic grainstone, unconsolidated bioclasts; intergranular permeability.
2,310 – 2,320	Dolostone: mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1); dolograinstone; well indurated; unconsolidated; low apparent permeability.
2,320 –2,360	Dolostone (60%): mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (40%): dark yellowish brown (10YR 4/2); dolomitic grainstone, unconsolidated bioclasts; intergranular permeability.
2,360 – 2,380	Dolostone (70%): mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (20%): dark yellowish brown (10YR 4/2); dolomitic grainstone, unconsolidated bioclasts; intergranular permeability. Limestone (10%): yellowish gray (5Y 7/2); wackestone, soft, well consolidated; low apparent permeability.
2,380 – 2,390	Limestone (70%): yellowish gray (5Y 7/2); packstone, unconsolidated bioclasts; intergranular permeability. Dolostone (20%): mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1) and black (N1); crystalline; well indurated; low apparent permeability. Limestone (10%): yellowish gray (5Y 7/2); wackestone, soft, well consolidated; low apparent permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
2,390 - 2,430	Dolostone (80%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline; well indurated; low apparent permeability. Limestone (20%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability.
2,430 - 2,470	Dolostone (60%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline to microcrystalline; well indurated; low apparent permeability. Limestone (40%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability.
2470 - 2480	Limestone (80%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (20%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline; well indurated; low apparent permeability.
2,480 – 2,500	Dolostone (90%): dark greenish gray (5G 4/1), greenish gray (5GY 6/1) and grayish black (N2); crystalline; well indurated; low apparent permeability. Limestone (10%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts, intergranular permeability.
2,500 – 2,520	Dolostone (70%): dark greenish gray (5G 4/1) and grayish black (N2); crystalline; well indurated; low apparent permeability. Limestone (30%): light olive gray (5Y 6/1); grainstone; unconsolidated bioclasts, intergranular permeability.
2,520 – 2,530	Limestone: light olive gray (5Y 6/1); grainstone; soft; moderately unconsolidated bioclasts, intergranular permeability.
2,530 – 2,560	Limestone (80%): yellowish gray (5Y 8/1); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (20%): dark gray (N3); crystalline; well indurated; low apparent permeability.
2,560 – 2,570	Limestone: light olive gray (5Y 8/1); grainstone; moderately hard to hard; moderately unconsolidated bioclasts, intergranular permeability.
2,570 – 2,610	Limestone: yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts, intergranular permeability.
2,610 – 2,620	Dolostone (90%): olive gray (5Y 3/2)and medium dark gray (N4); crystalline; well indurated; low apparent permeability. Limestone (30%): light olive gray (5Y 6/1); grainstone; unconsolidated bioclasts, intergranular permeability.
2,620 –2,630	Limestone (90%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (10%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1) and grayish black (N2); microcrystalline; well indurated; low apparent permeability.
2,630 – 2,650	Limestone (50%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (50%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline; well indurated; low apparent permeability.

*****Depth refers to depth below land surface (bls).

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	Lithologic Description
2,650 – 2,690	Dolostone (95%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline; very well indurated; low apparent permeability. Limestone (5%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability.
2,690 – 2,720	Limestone (90%): yellowish gray (5Y 7/2) and pale yellowish brown (10YR 6/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (10%): dark yellowish brown (10YR 4/2); microcrystalline; indurated; low apparent permeability.
2,720 – 2,760	Dolostone (60%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline; well indurated; low apparent permeability. Limestone (40%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability.
2,760 – 2,820	Dolostone (80%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline to microcrystalline; very well indurated; low apparent permeability. Limestone (20%): yellowish gray (5Y 7/2); grainstone, unconsolidated bioclasts; intergranular permeability.
2,820 – 2,830	Dolostone: medium bluish gray (5B 5/1); crystalline to microcrystalline; indurated and slightly sucrosic; low apparent permeability.
2,830 – 2,840	Dolostone (80%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline to microcrystalline; very well indurated; some vugs noted; low apparent permeability. Limestone (20%): yellowish gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability.
2,840 – 2,870	Limestone (80%): yellowish gray (5Y 7/2) and pale yellowish brown (10YR 6/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (20%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline; well indurated; low apparent permeability.
2,870 – 2,880	Limestone (90%): yellowish gray (5Y 7/2) and light olive gray (5Y 5/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (10%): medium bluish gray (5B 5/1); microcrystalline; indurated; low apparent permeability.
2,880 – 2,900	Limestone (60%): yellow gray (5Y 7/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (40%): light olive gray (5Y 6/1) and medium bluish gray (5B 5/1); crystalline to microcrystalline; calcite inclusions noted; very well indurated; low apparent permeability.
2,920 – 3,000	Limestone (70%): yellowish gray (5Y 7/2) and pale yellowish brown (10YR 6/2); grainstone; unconsolidated bioclasts; intergranular permeability. Dolostone (30%): dark yellowish brown (10YR 4/2); microcrystalline; indurated; low apparent permeability.

NOTE: Samples were logged while wet. Colors determined by comparison to The Geological Society of America Rock-Color Chart with genuine Munsell color chips (8th printing, 1995). Samples used in compiling the lithologic log came from the chip trays and sample bags. Samples were taken at ten-foot intervals.

*****Depth refers to depth below land surface (bls).

INJECTION WELL 1

THREE OAKS WASTEWATER TREATMENT PLANT INJECTION WELL

Depth* (feet)	**Lithologic Description**

*****Depth refers to depth below land surface (bls).

Appendix G

Pad Monitoring Wells Water Quality

THREE OAKS WWTP - PAD MONITOR WELL WATER QUALITY DATA

Sample	NW Elevation of 21.34 feet NGVD at TOC							NE Elevation of 22.97 feet NGVD at TOC						
Date	Depth to Water (feet BTOC[a])	Water Level (feet NGVD)	Chloride (mg/L)	Specific Conductivity (umhos/cm)	TDS[b] (mg/L)	Temp. (°C)	pH (Std. Units)	Depth to Water (feet BTOC[a])	Water Level (feet NGVD)	Chloride (mg/L)	Specific Conductivity (umhos/cm)	TDS[b] (mg/L)	Temp. (°C)	pH (Std. Units)
02/04/05	ND[c]	ND	ND	495	332	22.5	ND	ND	ND	ND	500	335	21.5	ND
02/04/05	ND	ND	26	469	244	ND	7.77	ND	ND	26	467	248	ND	7.78
02/09/05	7.44[d]	13.90	24	516	346	23.4	7.81	9.00[d]	13.97	32	517	346	22.4	7.97
02/17/05	7.48	#REF!	21	500	335	21.8	ND	9.04	#REF!	23	504	338	21.9	ND
02/23/05	7.55	#REF!	22	480	322	21.3	8.06	9.20	#REF!	28	477	320	22.1	8.08
03/03/05	7.00	#REF!	19	479	321	20.5	7.42	8.59	#REF!	28	479	321	20.8	7.69
03/10/05	6.21	#REF!	20	469	314	20.2	6.79	7.76	#REF!	26	480	322	20.7	7.12
03/17/05	6.80	#REF!	37	490	328	21.0	8.89	8.35	#REF!	23	492	330	21.2	8.52
03/23/05	5.78	#REF!	28	491	329	22.4	8.06	7.34	#REF!	22	492	330	22.6	8.27
03/30/05	5.95	#REF!	26	516	346	23.2	8.13	7.48	#REF!	20	522	350	23.4	8.36
04/06/05	6.26	#REF!	32	453	304	22.9	7.59	7.87	#REF!	20	450	302	23.1	7.97
04/13/05	6.21	#REF!	31	449	301	22.7	7.45	7.75	#REF!	20	449	301	23.0	7.60
04/20/05	6.55	#REF!	26	445	298	23.5	7.65	8.11	#REF!	33	447	299	23.7	7.66
04/28/05	6.10[e]	15.24	36	451	302	23.4	7.38	7.65[e]	15.32	48	451	302	23.5	7.65
05/04/05	6.36	#REF!	38	449	301	22.9	7.92	7.91	#REF!	52	447	299	23.2	7.93
05/11/05	6.66	14.68	32	455	305	24.0	7.57	8.22	14.75	28	453	304	25.3	7.77
05/18/05	6.78	#REF!	23	449	301	24.4	7.86	8.31	#REF!	33	450	302	24.8	7.83
05/25/05	7.28	#REF!	27	450	302	23.4	7.68	8.85	#REF!	28	454	304	24.0	7.65
06/02/05	4.84	#REF!	35	458	307	24.0	7.82	6.41	#REF!	33	464	311	24.8	7.86
06/08/05	5.05	#REF!	33	461	309	25.0	7.65	6.54	#REF!	31	464	311	25.1	7.61
06/15/05	4.55	#REF!	28	452	303	25.8	7.90	6.10	#REF!	22	442	296	26.5	7.95
06/22/05	5.15	#REF!	38	435	291	24.5	7.65	6.66	#REF!	43	522	350	24.9	7.86
06/29/05	5.01	#REF!	36	469	314	25.1	7.77	6.50	#REF!	39	472	316	25.4	7.89
07/06/05	5.42	#REF!	35	443	297	26.4	7.87	6.90	#REF!	30	444	297	26.9	7.77
07/13/05	5.15	#REF!	41	461	308	26.50	7.87	6.66	#REF!	24	463	310	26.70	8.03
07/20/05	4.81	#REF!	33	457	306	27.1	7.74	6.48	#REF!	32	465	312	27.0	7.91
07/27/05	5.02	#REF!	31	444	297	27.5	7.50	6.58	#REF!	30	446	299	27.4	7.60
08/04/05	4.87	#REF!	33	459	307	24.5	7.61	6.44	#REF!	29	432	289	26.4	7.57
08/10/05	5.52	#REF!	34	503	337	27.1	8.15	7.07	#REF!	31	490	328	28.4	7.95
08/17/05	5.72	#REF!	39	438	293	28.4	7.74	7.25	#REF!	45	440	295	28.9	7.86
Minimum	4.55	#REF!	19	435	244.0	20.20	6.79	6.10	#REF!	20	432	248.0	20.70	7.12
Average	5.93	#REF!	30	467	310.5	23.82	7.76	7.48	#REF!	30	470	312.8	24.17	7.85
Maximum	7.55	#REF!	41	516	345.7	27.50	8.89	9.20	#REF!	52	522	349.7	28.40	8.52

Sample	CW Elevation of 21.87 feet NGVD at TOC							CE Elevation of 23.35 feet NGVD at TOC						
Date	Depth to Water (feet BTOC[a])	Water Level (feet NGVD)	Chloride (mg/L)	Specific Conductivity (umhos/cm)	TDS[b] (mg/L)	Temp. (°C)	pH (Std. Units)	Depth to Water (feet BTOC[a])	Water Level (feet NGVD)	Chloride (mg/L)	Specific Conductivity (umhos/cm)	TDS[b] (mg/L)	Temp. (°C)	pH (Std. Units)
02/04/05	ND	ND	ND	495	332	22.5	ND	ND	ND	ND	500	335	22.0	ND
02/04/05	ND	ND	24	469	248	ND	7.70	ND	ND	26	468	232	ND	7.80
02/09/05	7.95[d]	13.92	51	518	347	22.2	7.99	9.37[d]	13.98	49	514	344	22.3	7.98
02/17/05	7.95	#REF!	43	505	338	22.1	ND	9.45	#REF!	32	504	338	22.8	ND
02/23/05	8.13	#REF!	49	476	319	21.9	8.04	9.60	#REF!	33	478	320	22.6	8.06
03/03/05	7.55	#REF!	35	483	324	20.1	7.60	8.97	#REF!	13	485	325	21.3	7.57
03/10/05	6.76	#REF!	33	480	322	21.1	6.24	8.17	#REF!	28	499	334	20.3	7.02
03/17/05	7.31	#REF!	33	496	332	21.3	8.65	8.72	#REF!	25	513	344	21.5	8.61
03/23/05	6.32	#REF!	37	541	362	22.4	8.16	7.70	#REF!	30	531	356	22.7	8.18
03/30/05	6.49	#REF!	32	595	399	23.3	8.27	7.91	#REF!	25	560	375	23.7	8.25
04/06/05	6.85	#REF!	24	462	310	22.3	8.07	8.26	#REF!	31	467	313	22.9	7.88
04/13/05	6.75	#REF!	23	453	304	23.7	7.53	8.18	#REF!	36	459	308	23.8	7.63
04/20/05	7.09	#REF!	29	447	299	22.8	8.11	8.50	#REF!	25	453	304	23.1	7.60
04/28/05	6.63[e]	15.24	35	457	306	23.1	7.32	8.05[e]	15.30	37	459	308	23.4	7.57
05/04/05	6.89	#REF!	41	453	304	23.0	7.91	8.31	#REF!	46	460	308	23.0	7.69
05/11/05	7.20	14.67	33	482	323	24.4	7.68	8.61	14.74	34	450	302	24.9	7.82
05/18/05	7.31	#REF!	30	454	304	24.4	7.93	8.70	#REF!	33	472	316	24.7	7.61
05/25/05	7.81	#REF!	33	465	312	23.2	7.67	9.24	#REF!	32	498	334	24.0	7.87
06/02/05	5.37	#REF!	39	503	337	24.1	7.93	6.82	#REF!	42	518	347	25.0	7.84
06/08/05	5.53	#REF!	35	520	348	24.9	7.68	6.93	#REF!	37	551	369	24.7	7.66
06/15/05	5.10	#REF!	60	508	340	25.4	7.85	6.50	#REF!	33	536	359	27.3	7.67
06/22/05	5.69	#REF!	31	481	322	24.8	7.57	6.94	#REF!	34	500	335	25.1	7.52
06/29/05	5.53	#REF!	36	500	335	25.2	7.84	6.88	#REF!	33	525	352	24.9	7.67
07/06/05	5.94	#REF!	41	484	324	27.3	7.63	7.35	#REF!	24	502	336	27.6	7.35
07/13/05	5.69	#REF!	59	496	332	26.90	7.91	7.05	#REF!	20	518	347	27.20	7.78
07/20/05	5.28	#REF!	39	504	338	26.9	7.83	6.71	#REF!	28	528	354	27.3	7.79
07/27/05	5.60	#REF!	36	493	330	26.8	7.82	6.98	#REF!	27	511	342	27.5	7.54
08/04/05	5.55	#REF!	39	503	337	25.7	7.65	6.80	#REF!	29	523	350	26.8	7.59
08/10/05	6.04	#REF!	37	485	325	27.2	7.38	7.47	#REF!	32	503	337	26.5	7.46
08/17/05	6.29	#REF!	23	479	321	28.5	7.63	7.70	#REF!	44	496	332	27.9	7.76
Minimum	5.12	#REF!	23	447	248.0	20.10	6.24	6.50	#REF!	13	450	232.0	20.30	7.02
Average	6.47	#REF!	37	490	326.0	23.89	7.78	7.87	#REF!	31	499	331.8	24.25	7.74
Maximum	8.13	#REF!	60	595	398.7	27.30	8.65	9.60	#REF!	49	560	375.2	27.60	8.61

Sample	SW Elevation of 21.68 feet NGVD at TOC							SE Elevation of 21.87 feet NGVD at TOC						
Date	Depth to Water (feet BTOC[a])	Water Level (feet NGVD)	Chloride (mg/L)	Specific Conductivity (umhos/cm)	TDS[b] (mg/L)	Temp. (°C)	pH (Std. Units)	Depth to Water (feet BTOC[a])	Water Level (feet NGVD)	Chloride (mg/L)	Specific Conductivity (umhos/cm)	TDS[b] (mg/L)	Temp. (°C)	pH (Std. Units)
02/04/05	ND	ND	ND	645	432	24.2	ND	ND	ND	ND	555	372	24.1	ND
02/04/05	ND	ND	48	604	336	ND	7.66	ND	ND	28	526	288	ND	7.68
02/09/05	7.73[d]	13.95	76	552	370	23.9	7.60	7.90[d]	13.97	26	659	442	24.3	ND
02/17/05	7.76	#REF!	46	652	437	24.0	ND	7.94	#REF!	42	534	358	25.8	ND
02/23/05	7.92	#REF!	42	676	453	22.9	8.02	7.94	#REF!	44	476	319	22.5	8.02
03/03/05	7.28	#REF!	27	627	420	21.9	7.40	7.47	#REF!	33	476	319	21.3	7.49
03/10/05	6.71	#REF!	31	630	422	23.1	7.14	6.58	#REF!	34	523	350	21.7	6.88
03/17/05	7.00	#REF!	36	639	428	23.1	8.49	7.35	#REF!	19	541	362	22.5	8.54
03/23/05	6.51	#REF!	34	626	419	23.4	7.96	6.23	#REF!	48	557	373	23.6	7.98
03/30/05	6.25	#REF!	27	646	433	24.3	8.03	6.41	#REF!	37	585	392	23.5	8.09
04/06/05	6.63	#REF!	26	588	394	23.6	7.65	6.78	#REF!	48	534	358	23.7	7.85
04/13/05	6.50	#REF!	24	577	387	23.8	7.18	6.67	#REF!	42	528	354	23.5	7.06
04/20/05	6.84	#REF!	39	562	377	23.5	7.33	7.00	#REF!	46	504	338	23.3	7.70
04/28/05	6.38[e]	15.30	50	558	374	23.8	7.45	6.56[e]	15.31	59	510	342	23.7	7.52
05/04/05	6.66	#REF!	54	575	385	23.4	7.28	6.83	#REF!	61	509	341	22.5	7.61
05/11/05	6.96	14.72	42	547	366	24.2	7.65	7.14	14.73	40	501	336	24.2	7.68
05/18/05	7.10	#REF!	44	539	361	24.4	7.63	7.23	#REF!	32	498	334	24.0	8.01
05/25/05	7.60	#REF!	35	515	345	23.5	7.51	7.75	#REF!	40	560	375	23.3	7.42
06/02/05	5.15	#REF!	40	570	382	23.4	7.61	5.33	#REF!	32	524	351	23.4	7.63
06/08/05	5.25	#REF!	36	574	385	24.8	7.32	5.42	#REF!	37	572	383	24.4	7.50
06/15/05	4.84	#REF!	41	575	385	24.8	7.76	5.00	#REF!	30	545	365	24.8	7.78
06/22/05	5.42	#REF!	43	579	388	23.0	7.24	5.59	#REF!	44	568	381	24.1	7.45
06/29/05	5.30	#REF!	39	589	395	25.1	7.49	5.47	#REF!	45	567	380	25.4	7.54
07/06/05	5.70	#REF!	46	589	395	26.3	7.67	5.87	#REF!	33	560	375	26.5	7.53
07/13/05	5.44	#REF!	36	599	401	26.5	7.64	5.59	#REF!	27	562	377	26.30	7.66
07/20/05	5.22	#REF!	42	604	405	26.8	7.49	5.36	#REF!	41	574	385	26.7	7.48
07/27/05	5.35	#REF!	39	597	400	26.0	7.61	5.51	#REF!	39	560	375	26.7	7.55
08/04/05	5.26	#REF!	36	582	390	26.3	7.64	5.39	#REF!	37	553	371	26.5	7.61
08/10/05	5.86	#REF!	36	665	446	25.5	7.69	5.94	#REF!	30	547	366	26.4	7.29
08/17/05	6.00	#REF!	35	592	397	26.6	7.30	6.20	#REF!	60	542	363	26.8	7.46
Minimum	4.84	#REF!	24	515	336.0	21.90	7.14	5.00	#REF!	19	476	288.0	21.30	6.88
Average	6.26	#REF!	40	596	396.9	24.27	7.60	6.39	#REF!	38	542	360.7	24.24	7.64
Maximum	7.92	#REF!	76	676	452.9	26.80	8.49	7.94	#REF!	61	659	441.5	26.70	8.54

laboratory analysis

Note[a]: BTOC means below the top of casing

Note[b]: TDS calculated in the field = Specific Conductivity * 0.67

Note[c]: ND indicates no data

Note[d]: Water level measurement taken on February 12, 2005.

Note[e]: Water level measurement taken on April 27, 2005.

Appendix H

Core Lab Reports

Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

October 13, 2005
File Number 05-121

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, Florida 33908

Attention: Mr. Edward McCullers

Subject: Laboratory Testing of Rock Core Samples from Three Oaks Waste Water Treatment Plant Injection Well IW-1

Gentlemen:

As requested, permeability and specific gravity tests have been completed on sixteen rock core samples provided for testing by your firm from the Three Oaks Waste Water Treatment Plant Injection Well IW-1. A total of seventeen samples were received on June 28, 2005. The sample designations are listed below.

Core No.	Depth Interval	Sample No.	Sample Location (from Top of Core)
1	1170' - 1185'	1	17" - 23"
2	1765' - 1780'	2	0" - 5.5"
		3	8" - 18"
		4	18" - 27"
3	1964' - 1979'	5	10" - 15"
		6	29" - 37"
4	2020' - 2036'	7	19" - 24"
		8	28" - 32"
		9	44" - 50"
		10	53" - 60"
		11	73" - 78"
		12	111" - 116"
5	2251' - 2265'	13	7" - 11"
		14	19" - 23"
6	2325' - 2340'	15	11" - 15"
		16	68" - 74"
7	2393' - 2408'	17	20" - 24"

The permeability test results, measured mineral specific gravities (ASTM Standard D 854) and back-calculated total porosities for sixteen samples are presented in the attached tables. Due to the irregular shape and short length of the core samples, each of the requested tests (i.e., vertical

permeability test, horizontal permeability test and unconfined compression test) could not be performed on each sample. Permeability tests on Sample No. 4 and unconfined compression tests on samples 3, 4 and 6 are in progress. The results of these remaining tests will be submitted within 2 weeks.

The test specimens were reported to be from the samples designated herein. The test results are indicative of only the specimens that were actually tested. The test results presented are based upon accepted industry practice as well as the test method(s) listed. Ardaman & Associates, Inc. neither accepts responsibility for, nor makes claims to the final use and purpose of the material.

If you have any questions or require additional testing services, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Shawkat Ali, Ph.D., P.E.
Quality Control Manager

Thomas S. Ingra, P.E.
Laboratory Director
Florida License No. 31987

SA/TSI/ed

T:\Projects\2005\05-121\05-121 Youngquist tsi 001.wpd

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/07/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.81 ☐ Assumed ☒ Measured (ASTM D 854)

B-factor: 88 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 8.4; 13.5; 18.0

INCOMING LABORATORY SAMPLE NO.: S15 C6 2325'-2340'

LABORATORY IDENTIFICATION NO.: 05-121/S15 C6 2325'-2340' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.25	9.92	637.5	1,720.6	1.3	168.4	89	30	160	69	0.6	15	8.29	640.6	+0.48	1.6	167.6	97	3.3×10^{-10}

COMMENTS: Total Core Length = 4.0"; Usable Length = 4.0"; Total Porosity = 0.04; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.81 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 94 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.3; 6.5; 10.1

INCOMING LABORATORY SAMPLE NO.: S15 C6 2325'-2340'

LABORATORY IDENTIFICATION NO.: 05-121/S15 C6 2325'-2340' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.43	5.01	146.6	394.2	1.4	167.8	91	30	160	71	0.3	3	7.45	147.0	+0.33	1.6	167.3	93	3.0×10^{-9}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.04

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/06/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.82 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 76 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4.5; 8.4; 11.4; 14.9

INCOMING LABORATORY SAMPLE NO.: S16 C6 2325'-2340'

LABORATORY IDENTIFICATION NO.: 05-121/S16 C6 2325'-2340' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
6.19	5.01	122.0	305.6	3.8	156.3	86	30	160	34	0.8	2	6.18	121.8	-0.14	4.4	156.5	100	9.4×10^{-9}

COMMENTS: Total Core Length = 6.0"; Usable Length = 5.5"; Total Porosity = 0.11; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation, σ_c = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: RM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/06/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.82 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 58 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.7; 6.1; 9.1; 13.8

INCOMING LABORATORY SAMPLE NO.: S16 C6 2325'-2340'

LABORATORY IDENTIFICATION NO.: 05-121/S16 C6 2325'-2340' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts _____	
	☐ Kneading: No. of Lifts _____ Spring _____ lb. Blows per Lift _____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.65	5.01	150.8	387.0	2.4	160.1	68	30	160	179	0.1	23	7.75	152.8	+1.28	3.8	158.1	95	5.9×10^{-10}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.09

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 06/28/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.83 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 89 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4.3; 7.4; 11.2

INCOMING LABORATORY SAMPLE NO.: S17 C7 2393'-2408'

LABORATORY IDENTIFICATION NO.: 05-121/S17 C7 2393'-2408' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts -	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
5.51	10.11	442.1	1,155.3	2.4	163.1	80	30	160	28	3.8	9	5.46	438.1	-0.90	2.4	164.5	93	1.6×10^{-5}

COMMENTS: Total Core Length = 3.0"; Usable Length = 3.0"; Total Porosity = 0.08; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing. Specimen had visible vertical cracks.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/17/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.83 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 64 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.5; 5.2; 8.5

INCOMING LABORATORY SAMPLE NO.: S17 C7 2393'-2408'

LABORATORY IDENTIFICATION NO.: 05-121/S17 C7 2393'-2408' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	1.3"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts Spring lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.18	3.27	68.8	179.1	2.3	162.3	74	30	160	127	0.2	20	8.06	67.7	-1.61	2.4	165.0	97	8.3×10^{-10}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.08

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{a-g} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: [signature] Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.80 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 100 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.9; 7.5; 11.5; 16.0

INCOMING LABORATORY SAMPLE NO.: S14 C5 2251'-2265'

LABORATORY IDENTIFICATION NO.: 05-121/S14 C5 2251'-2265' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
5.34	10.07	425.1	1,143.8	1.4	167.9	95	30	160	275	0.9	14	5.35	426.5	+0.33	1.6	167.3	100	4.0×10^{-11}

COMMENTS: Total Core Length = 4.0"; Usable Length = 2.5"; Total Porosity = 0.04; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; σ_c = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/11/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.79 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 100 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.6; 7.4; 10.3

INCOMING LABORATORY SAMPLE NO.: S8 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S8 C4 2020'-2036' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts -	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.49	9.92	579.5	1,431.3	4.6	154.1	99	30	160	59	0.3	1	7.52	580.4	+0.16	4.7	153.9	99	5.1×10^{-8}

COMMENTS: Total Core Length = 4.0"; Usable Length = 3.5"; Total Porosity = 0.11; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.79 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 99 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5.2; 8.1; 11.0

INCOMING LABORATORY SAMPLE NO.: S8 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S8 C4 2020'-2036' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.94	5.01	156.6	386.5	4.6	154.0	98	30	130	70	0.3	2	7.98	157.0	+0.22	4.7	153.7	98	6.7×10^{-8}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.12

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/12/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/26/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.70 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 88 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.8; 6.6; 9.0; 12.1

INCOMING LABORATORY SAMPLE NO.: S9 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S9 C4 2020'-2036' k

SAMPLE DESCRIPTION: Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts '	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
9.98	9.95	775.8	1,544.8	13.1	124.2	99	30	160	26	0.3	2	10.03	777.8	+0.25	13.1	123.9	98	2.2×10^{-6}

COMMENTS: Total Core Length = 6.0"; Usable Length = 4.5"; Total Porosity = 0.26; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: [signature] Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/17/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.70 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 100 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.0; 5.5; 9.3

INCOMING LABORATORY SAMPLE NO.: S9 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S9 C4 2020'-2036' k_h

SAMPLE DESCRIPTION: Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts -	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.74	5.00	152.0	301.6	13.1	123.8	98	30	160	30	0.6	1	7.73	151.4	-0.44	13.1	124.3	100	5.0×10^{-6}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.27

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/27/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.73 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 86 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.7; 6.5; 8.9; 12.0

INCOMING LABORATORY SAMPLE NO.: S10 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S10 C4 2020'-2036' k_v

SAMPLE DESCRIPTION: Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
9.86	9.99	772.9	1,509.8	13.4	121.9	92	30	160	38	1.1	1	9.85	769.8	-0.40	13.4	122.4	93	1.4×10^{-6}

COMMENTS: Total Core Length = 7.0"; Usable Length = 5.0"; Total Porosity = 0.28; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density, S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.73 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 76 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.8; 5.2; 7.8

INCOMING LABORATORY SAMPLE NO.: S10 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S10 C4 2020'-2036' k_v

SAMPLE DESCRIPTION: Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.91	5.00	155.2	307.9	13.3	123.8	96	30	160	31	0.3	3	7.93	155.4	+0.12	13.4	123.6	97	3.4×10^{-6}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.27

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/07/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.70 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 95 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5.1; 9.0

INCOMING LABORATORY SAMPLE NO.: S11 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S11 C4 2020'-2036' k_v

SAMPLE DESCRIPTION: Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.25	9.86	553.8	1,119.5	12.5	126.1	100	30	160	39	2.0	12	7.28	554.9	+0.20	12.6	125.9	100	6.5×10^{-6}

COMMENTS: Total Core Length = 4.5"; Usable Length = 3.5"; Total Porosity = 0.25; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: JM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/14/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.70 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 99 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.8; 5.2; 7.8

INCOMING LABORATORY SAMPLE NO.: S11 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S11 C4 2020'-2036' k_h

SAMPLE DESCRIPTION: Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.02	4.99	157.0	317.2	12.4	126.1	99	30	160	31	2.2	1	8.04	157.9	+0.60	12.6	125.3	99	7.6×10^{-6}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.25

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; σ_c = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/02/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.71 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 100 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.1; 6.9; 10.8

INCOMING LABORATORY SAMPLE NO.: S12 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S12 C4 2020'-2036' k

SAMPLE DESCRIPTION: Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.21	9.87	628.8	1,231.2	12.9	122.2	91	30	160	33	3.2	2	8.20	621.6	-1.14	12.8	123.6	94	$1.3x10^{-5}$

COMMENTS: Total Core Length = 5.0"; Usable Length = 3.5"; Total Porosity = 0.28; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.71 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 96 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5.2; 8.1; 11.0

INCOMING LABORATORY SAMPLE NO.: S12 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S12 C4 2020'-2036' k_v

SAMPLE DESCRIPTION: Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.72	5.01	151.8	304.9	12.8	125.4	99	30	16	33	0.7	2	7.72	152.0	+0.15	12.8	125.2	99	2.5×10^{-5}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.26

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: JM Date: 10/13/09

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.80 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 95 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.6; 7.4; 10.3

INCOMING LABORATORY SAMPLE NO.: S13 C5 2251'-2265'

LABORATORY IDENTIFICATION NO.: 05-121/S13 C5 2251'-2265' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts '	
	☐ Kneading: No. of Lifts Spring lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm³)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm³)	t (days)	H (cm)	V_f (cm³)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
3.25	10.10	260.0	719.9	0.4	172.8	96	30	160	129	0.7	1	3.28	260.9	+0.35	0.5	172.2	99	9.1×10^{-8}

COMMENTS: Total Core Length = 3.5"; Usable Length = 2"; Total Porosity = 0.01; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; σ_c = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TW Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 09/13/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.84 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 90 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.7; 5.5; 8.9

INCOMING LABORATORY SAMPLE NO.: S6 C3 1964'-1979'

LABORATORY IDENTIFICATION NO.: 05-121/S6 C3 1964'-1979' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.89	5.01	155.7	397.9	2.7	159.5	69	30	160	70	2.0	6	7.87	155.8	+0.07	2.9	159.4	74	3.2×10^{-9}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.10

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/14/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.75 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 95 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.5; 7.6 11.2

INCOMING LABORATORY SAMPLE NO.: S7 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S7 C4 2020'-2036' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts '	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.54	10.03	595.6	1,374.4	6.4	144.0	92	30	160	32	0.3	1	7.54	589.2	-1.07	6.4	145.6	99	3.9×10^{-7}

COMMENTS: Total Core Length = 4.5"; Usable Length = 3.3"; Total Porosity = 0.16; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient, Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM

Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.75 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 96 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 5.3; 8.1; 11.0

INCOMING LABORATORY SAMPLE NO.: S7 C4 2020'-2036'

LABORATORY IDENTIFICATION NO.: 05-121/S7 C4 2020'-2036' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts 1	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm³)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm³)	t (days)	H (cm)	V_f (cm³)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
6.81	5.00	133.8	313.0	6.2	146.0	98	30	160	32	0.3	2	6.82	134.4	+0.46	6.4	145.3	98	4.5×10^{-7}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.15

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.82 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 89 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.5; 4.8; 6.6

INCOMING LABORATORY SAMPLE NO.: S3 C2 1765'-1780'

LABORATORY IDENTIFICATION NO.: 05-121/S3 C2 1765'-1780' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts '	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm³)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm³)	t (days)	H (cm)	V_f (cm³)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.38	5.01	165.2	444.3	1.3	167.8	74	30	160	92	0.8	12	8.39	165.3	+0.09	1.3	167.7	74	3.0×10^{-10}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.05

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: [signature] Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/06/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.81 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 72 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4.5; 8.4; 11.4; 14.9

INCOMING LABORATORY SAMPLE NO.: S5 C3 1964'-1979'

LABORATORY IDENTIFICATION NO.: 05-121/S5 C3 1964'-1979' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.90	5.01	175.4	480.2	0.4	170.8	42	30	160	30	0.2	2	8.91	175.8	+0.25	0.8	170.4	74	1.2×10^{-8}

COMMENTS: Total Core Length = 3.5"; Usable Length = 3.5"; Total Porosity = 0.03; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/03/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.84 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 84 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.7; 8.9; 14.3

INCOMING LABORATORY SAMPLE NO.: S6 C3 1964'-1979'

LABORATORY IDENTIFICATION NO.: 05-121/S6 C3 1964'-1979' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.97	9.95	697.2	1,788.9	2.9	160.1	76	30	160	61	2.0	34	9.00	697.7	+0.07	2.9	160.0	77	5.6×10^{-10}

COMMENTS: Total Core Length = 7.5"; Usable Length = 7.5"; Total Porosity = 0.10; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/06/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.84 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 96 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4.2; 9.7; 16.8

INCOMING LABORATORY SAMPLE NO.: S1 C1 1170'-1185'

LABORATORY IDENTIFICATION NO.: 05-121/S1 C1 1170'-1185' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
11.50	10.07	915.7	2,324.1	3.2	158.4	76	30	160	29	1.0	2	11.54	916.7	+0.11	3.5	158.2	82	4.1×10^{-9}

COMMENTS: Total Core Length = 6.0"; Usable Length = 4.6"; Total Porosity = 0.11; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation, $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.84 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 92 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.7; 5.2; 7.8

INCOMING LABORATORY SAMPLE NO.: S1 C1 1170'-1185'

LABORATORY IDENTIFICATION NO.: 05-121/S1 C1 1170'-1185' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts -	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.26	5.00	142.8	369.6	3.4	161.5	99	30	160	78	0.4	2	7.26	143.3	+0.31	3.5	161.0	98	9.8×10^{-9}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.09

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20° C; and G_s = Specific gravity.

Checked By: RVJ Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/07/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.81 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 96 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4.2; 9.7; 16.8

INCOMING LABORATORY SAMPLE NO.: S2 C2 1765'-1780'

LABORATORY IDENTIFICATION NO.: 05-121/S2 C2 1765'-1780' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm³)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm³)	t (days)	H (cm)	V_f (cm³)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
7.54	10.06	599.6	1,633.8	0.5	170.0	45	30	160	190	0.4	14	7.60	599.8	+0.04	0.6	170.0	53	2.3×10^{-11}

COMMENTS: Total Core Length = 5.0"; Usable Length = 3.5"; Total Porosity = 0.03; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: [signature] Date: 10/13/05

Form SR-2; Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 08/12/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.81 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 87 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.4; 6.5; 10.2

INCOMING LABORATORY SAMPLE NO.: S2 C2 1765'-1780'

LABORATORY IDENTIFICATION NO.: 05-121/S2 C2 1765'-1780' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts ____	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.09	5.01	159.6	439.4	0.5	171.7	63	30	160	64	0.7	3	8.14	160.4	+0.47	0.6	170.9	65	3.8×10^{-9}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.02

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: [signature] Date: 10/13/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 06/29/05

DATE REPORTED: 10/13/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.82 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 84 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 3.1; 6.0; 9.0

INCOMING LABORATORY SAMPLE NO.: S3 C2 1765'-1780'

LABORATORY IDENTIFICATION NO.: 05-121/S3 C2 1765'-1780' k

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift ____	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
10.36	9.85	790.0	2,115.4	1.3	167.1	68	30	160	133	0.8	26	10.31	785.7	-0.55	1.3	168.0	78	1.8×10^{-10}

COMMENTS: Total Core Length = 11.0"; Usable Length = 9.0"; Total Porosity = 0.05; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

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Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 10/13/05

Form SR-2: Rev. 0

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

November 8, 2005
File Number 05-121

RECEIVED
NOV 10 2005

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Fort Myers, Florida 33908

Attention: Mr. Edward McCullers

Subject: Laboratory Testing of Rock Core Samples from Three Oaks Waste Water Treatment Plant Injection Well IW-1

Gentlemen:

As requested, permeability, specific gravity and unconfined compression tests have been have been completed on rock core samples provided for testing by your firm from Three Oaks Waste Water Treatment Plant Injection Well IW-1. A total of seventeen samples were received on June 28, 2005. Permeability and specific gravity test results for sixteen of the samples were submitted in our letter report dated October 13, 2005.

The permeability test results, measured mineral specific gravity (ASTM Standard D 854) and back-calculated total porosities for the remaining sample (Core 2 - Sample No. 4) are presented on the attached tables.

Sufficient core lengths were available to perform unconfined compression tests on only three of the 17 samples. The results of the unconfined compression tests are summarized in Table 1. The stress-strain curves are presented in Figures 1 through 3.

The test specimens were reported to be from the samples designated herein. The test results are indicative of only the specimens that were actually tested. The test results presented are based upon accepted industry practice as well as the test method(s) listed. Ardaman & Associates, Inc. neither accepts responsibility for, nor makes claims to the final use and purpose of the material.

If you have any questions or require additional testing services, please contact us.

Very truly yours,
ARDAMAN & ASSOCIATES, INC.

Shawkat Ali, Ph.D., P.E.
Quality Control Manager

Thomas S. Ingra, P.E
Laboratory Director
Florida License No. 31987

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 07/26/05

DATE REPORTED: 11/08/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.82 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 97 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 4.7; 9.1; 14.4

INCOMING LABORATORY SAMPLE NO.: S4 C2 1765'-1780'

LABORATORY IDENTIFICATION NO.: 05-121/S4 C2 1765'-1780' k_v

SAMPLE DESCRIPTION: Dolomitic Limestone

Vertical Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	4"	☐ Yes ☒ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts Spring lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
9.53	9.95	740.4	2015.9	0.9	169.9	72	30	160	146	0.8	20	9.53	740.4	0.0	1.1	169.9	85	7.0×10^{-11}

COMMENTS: Total Core Length = 8.5"; Usable Length = 8.5"; Total Porosity = 0.03; Vertical test specimen air-dried and then saturated under vacuum prior to setting up for permeability testing.

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

The test data and all associated project information presented hereon shall be held in confidence and disclosed to other parties only with the authorization of the Client or Ardaman & Associates, Inc. Physical and electronic records of each project are kept for a minimum of 7 years. Test samples are kept in storage for at least 10 working days after mailing of the test report, prior to being discarded, unless a longer storage period is requested in writing and accepted by Ardaman & Associates, Inc.

Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TM Date: 11/08/05

Form SR-2: Rev. 0

ARDAMAN & ASSOCIATES, INC. GEOTECHNICAL TESTING LABORATORY
HYDRAULIC CONDUCTIVITY TEST REPORT

CLIENT: Youngquist Brothers, Inc.

PROJECT: Three Oaks WWTP IW-1

FILE NO.: 05-121

DATE SAMPLE RECEIVED: 06/28/05 SET UP: 09/13/05

DATE REPORTED: 11/08/05

ASTM D 5084 TEST METHOD:

- ☒ A - Constant Head
- ☐ B - Falling Head; Rising Tailwater
- ☐ C - Falling Head; Constant Tailwater
- ☐ E - Constant Volume; Falling Head

PERMANENT: ☒ Deaired Tap Water ☐ Other

G_s: 2.82 ☐ Assumed ☒ Measured [ASTM D 854]

B-factor: 59 % ☐ Beginning of Test; ☒ End of Test

$\Delta\sigma_c$ (psi): 2.9; 6.1; 8.3

INCOMING LABORATORY SAMPLE NO.: S4 C2 1765'-1780'

LABORATORY IDENTIFICATION NO.: 05-121/S4 C2 1765'-1780' k_h

SAMPLE DESCRIPTION: Dolomitic Limestone

Horizontal Test Specimen

SPECIMEN PREPARATION		
Type	Diameter (inch)	Diameter Trimmed
☐ Undisturbed Sample	-	☐ Yes ☐ No
☐ Drive Cylinder	-	☐ Yes ☐ No
☒ Rock Core	2"	☒ Yes ☐ No
☐ Compacted	☐ Tamped Uniform Lifts: No. of Lifts	
	☐ Kneading: No. of Lifts ____ Spring ____ lb. Blows per Lift	
☐ Other	-	

Initial Conditions							Test Conditions					Final Conditions						Hydraulic Conductivity
H (cm)	D (cm)	V_o (cm^3)	WDS (g)	w_c (%)	γ_d (pcf)	S (%)	$\bar{\sigma}_c$ (psi)	u_b (psi)	i_{avg}	Q (cm^3)	t (days)	H (cm)	V_f (cm^3)	$\Delta V/V_o$ (%)	w_c (%)	γ_d (pcf)	S (%)	k_{20} (cm/sec)
8.03	5.03	159.3	432.4	1.1	169.4	77	30	160	161	0.6	32	8.02	158.7	-0.4	1.1	170.0	87	5.6×10^{-10}

COMMENTS: Cross cored from vertical specimen. Total Porosity = 0.04

Particle-Size Analysis		U.S. Standard Sieve Size	Gravel			Coarse Sand	Medium Sand		Fine Sand			Silt & Clay
☐ ASTM D 422 ☐ ASTM D 1140-Method B			3/4"	3/8"	No. 4	No. 10	No. 20	No. 40	No. 60	No. 100	No. 140	No. 200
Dry Mass (g)	-	Soil Passing (%, dry wt. basis)	-	-	-	-	-	-	-	-	-	-

Where: H = Specimen height; D = Specimen diameter; V_o = Initial volume; WDS = Dry mass; w_c = Moisture content (ASTM D 2216); γ_d = Dry density; S = Saturation; $\bar{\sigma}_c$ = Isotropic effective confining stress; u_b = Back-pressure; i_{avg} = Average hydraulic gradient; Q = Flow volume; t = Test duration; V_f = Final volume; $\Delta V/V_o$ = Volume change; k_{20} = Saturated hydraulic conductivity at 20°C; and G_s = Specific gravity.

Checked By: TW Date: 11/08/05

Form SR-2: Rev. 0

Youngquist Brothers, Inc.
File Number 05-121
November 8, 2005

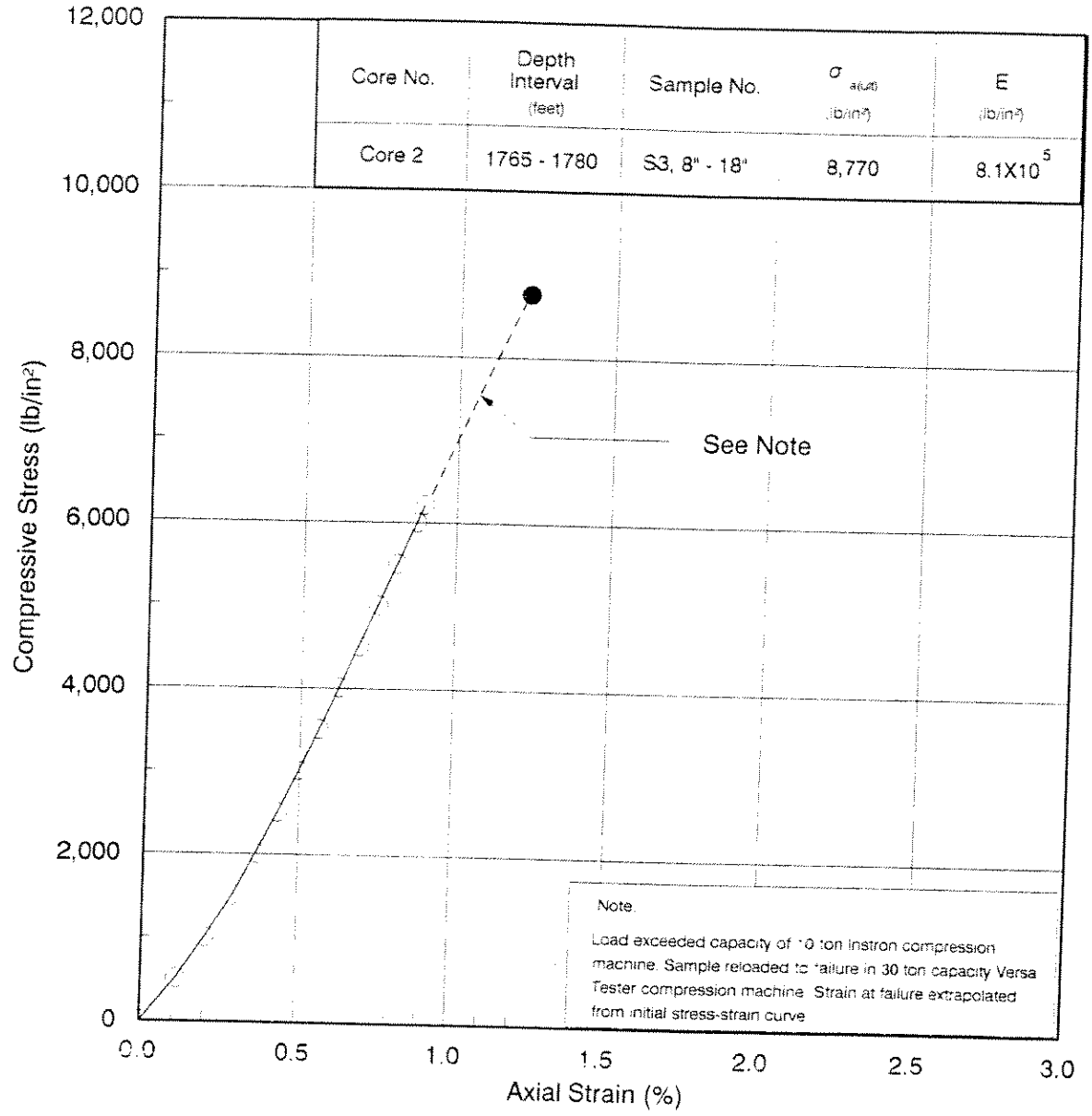
Table 1

UNCONFINED COMPRESSION TEST RESULTS
THREE OAKS WASTE WATER TREATMENT PLANT INJECTION WELL IW-1

Core No.	Depth Interval (ft)	Sample No.	Sample Location (from top of core)	Specimen Dimensions			w_c (%)	γ_d (lb/ft^3)	Loading Rate (cm/min)	t_f (minute)	Unconfined Compressive Strength, σ_u(ult) (lb/in^2)	Young's Modulus E (lb/in^2)*
				Length L (cm)	Diameter D (cm)	L/D						
2	1765 - 1780	3	8" - 18"	10.02	5.01	2.02	0.3	172.0	0.013	9.7	8,770	8.1×10^5
2	1765 - 1780	4	18" - 27"	9.96	5.02	1.99	0.3	170.4	0.013	13.7	11,530	7.3×10^5
3	1964 - 1979	6	29" - 37"	9.38	5.01	1.87	1.0	161.2	0.013	9.2	7,800	7.2×10^5

Where: w_c = Moisture content; γ_d = Dry density; and t_f = Time to failure.

* Young's modulus calculated from slope of the straight-line portion of the stress-strain curve.



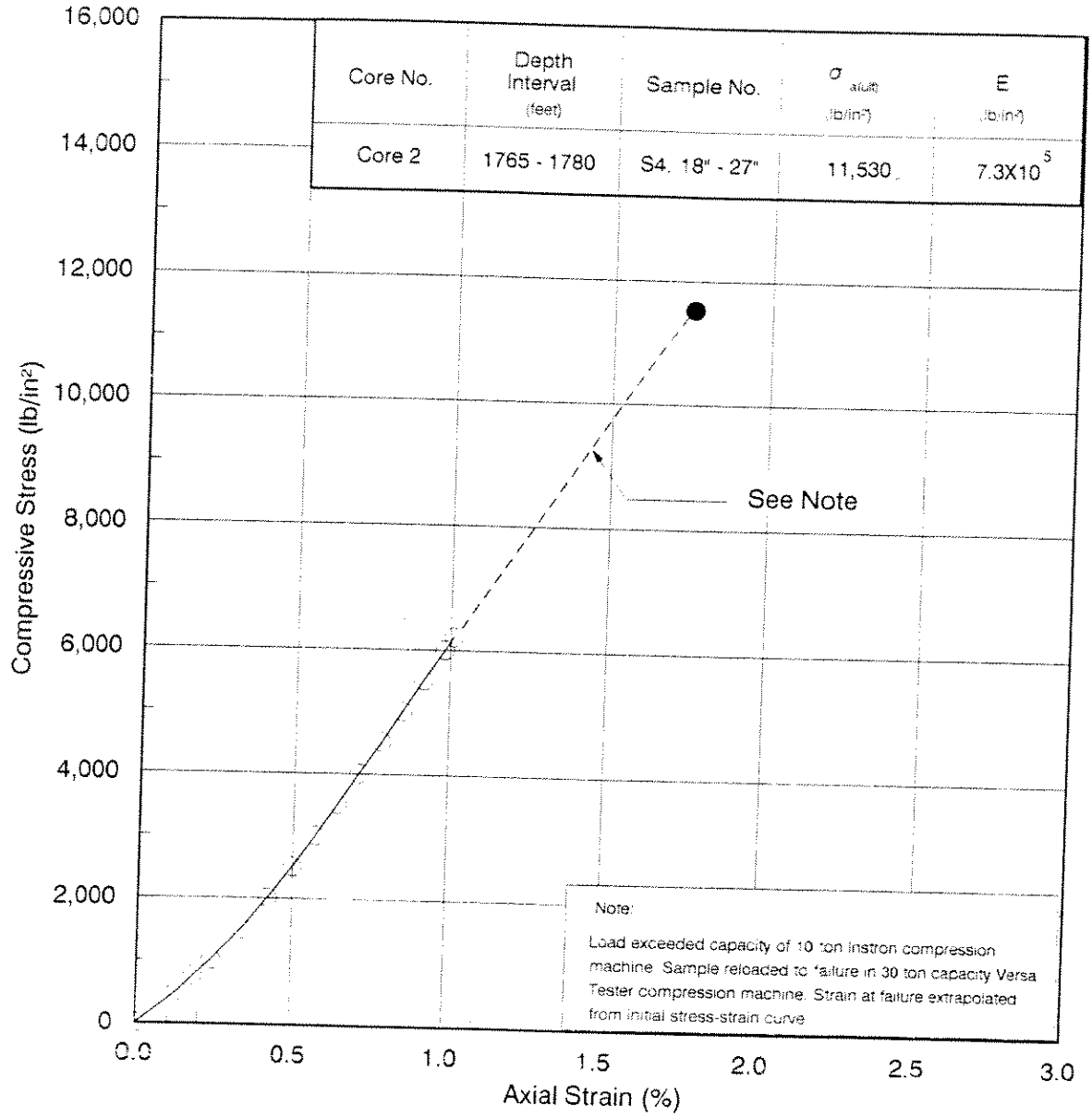
UNCONFINED COMPRESSION TEST

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

THREE OAKS WASTEWATER TREATMENT PLANT
INJECTION WELL IW-1

YOUNGQUIST BROTHERS, INC.
FORT MYERS, FLORIDA

DRAWN BY	SA	CHECKED BY	SA	DATE	11-08-05
JOB NO.	05-121	APPROVED BY		FIGURE	1



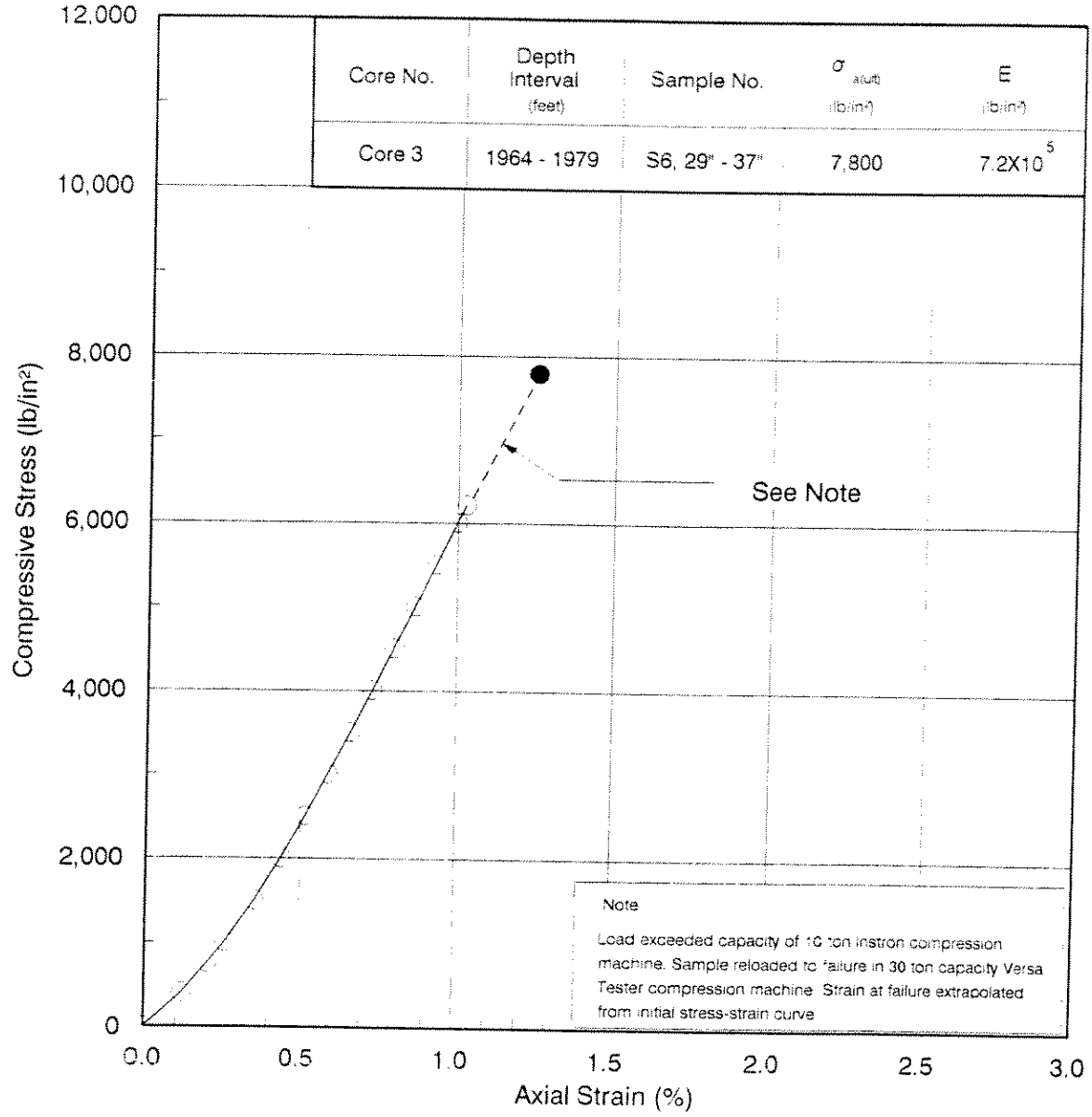
UNCONFINED COMPRESSION TEST

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

THREE OAKS WASTEWATER TREATMENT PLANT
INJECTION WELL IW-1

YOUNGQUIST BROTHERS, INC
FORT MYERS, FLORIDA

SA	CHECKED BY SA		11-08-05
05-121			2



UNCONFINED COMPRESSION TEST

Ardaman & Associates, Inc.
Geotechnical, Environmental and Materials Consultants

THREE OAKS WASTEWATER TREATMENT PLANT
INJECTION WELL W-1

YOUNGQUIST BROTHERS, INC.
FORT MYERS, FLORIDA

DRAWN BY	CHECKED BY	DATE
SA	SA	11-08-05

FILE NO.	APPROVED BY	FIG. NO.
05-121		3

Appendix I

Core Lithologic Descriptions

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 1,170 feet bls to 1,185 feet bls

DATE: 2-17-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

Core Number 1

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4-inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 15 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 9.6 feet

Percent Of Core Sample Length Recovered: 64%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
1,170 to 1,179.6	9.6	Dolostone. Light gray (N7). Massive bedding. Microcrystalline texture. Slightly sucrosic porosity. Moderate to low permeability. Very well indurated. 80% of Vuggy pore spaces included with yellowish gray (5Y 8/1), very well indurated, dolomitic limestone (wackestone).	RPM = 15 WOB: 7,000 pounds 20 - 70 psi
1,179.6 to 1,185	5.4	No Recovery.	

FORM NO. 05-02

Observer's Initials: HK, RAW

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 1,765 feet bls to 1,780 feet bls

DATE: 2-20-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

Core Number 2

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4-inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 15 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 4.25 feet

Percent Of Core Sample Length Recovered: 28%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
1,765 to 1,769.25	4.25	Dolostone. Medium light gray (N6). Massive bedding. Very fine crystalline texture. Slightly vuggy porosity. Low apparent permeability. Very well indurated.	RPM = 15 WOB: 8,000 pounds 30 - 110 psi
1,769.25 to 1,780	10.75	No Recovery.	

FORM NO. 05-02

Observer's Initials: HK, RAW

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 1,964 Feet bls to 1,978 Feet bls

DATE: 3-15-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

3

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4 inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 14 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 4.75 feet

Percent Of Core Sample Length Recovered: 34%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
1,964 to 1,966	2.0	Limestone. Pale yellowish brown (10YR 6/2). Massive bedding. Very finely crystalline texture. Low porosity. Low apparent permeability. Very well indurated.	RPM = 6-24 WOB: 5-10K lbs 30 psi
1,966 to 1,968.75	2.75	Limestone. Pale yellowish brown (10YR 6/2). Massive bedding. Crystalline texture. Moderately vuggy porosity. Low apparent permeability. Very well indurated.	RPM = 24 WOB: 10K lbs 30 psi
1,968.75 to 1,978	9.25	No Recovery.	RPM = 23-28 WOB: 7-10K lbs 25-30 psi

FORM NO. 05-02

Observer's Initials: GY, AS

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 2,020 Feet bls to 2,036 Feet bls

DATE: 3-16-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

Core Number 4

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4 inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 16 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 10.8 feet

Percent Of Core Sample Length Recovered: 68%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,020 to 2,021.5	1.5	Limestone. Dark yellowish brown (105YR 4/2). Massive bedding, laminated with inclusions. Low porosity. Low apparent permeability. Moderately well indurated.	RPM = 15-16 WOB: 5-7K lbs 30-90 psi
2,021.5 to 2,023	1.5	Limestone. Yellowish gray (5Y 8/1) and dark yellowish brown (105YR 4/2). Massive bedding with light gray (N7) laminations and inclusions. Low porosity. Low apparent permeability. Moderately well indurated.	RPM = 15-18 WOB: 5-7K lbs 30-90 psi
2,023 to 2,027	4.0	Limestone. Yellowish gray (5Y 8/1). Massive bedding with light gray (N7) laminations and inclusions. Low porosity. Low apparent permeability. Moderately well indurated.	RPM = 15-18 WOB: 5-7K lbs 30-90 psi
2,027 to 2,030	3.0	Limestone. Dark yellowish brown (105YR 4/2). Massive bedding, somewhat less laminated and included than above. Low porosity. Low apparent permeability. Moderately well indurated.	RPM = 15-18 WOB: 5-8K lbs 30-100 psi

FORM NO. 05-02

Observer's Initials: HK, RAW

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,030 to 2,031	1.0	Limestone. Yellowish gray (5Y 8/1). Massive bedding, partly unconsolidated section. Low porosity. Moderate apparent permeability. Moderately indurated.	RPM = 15-18 WOB: 5-8K lbs 30-100 psi
2,031 to 2,036	5.0	No Recovery.	

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 2,251 Feet bls to 2,265 Feet bls

DATE: 3-19-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

Core Number: 5

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4 inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 14 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 4.75 feet

Percent Of Core Sample Length Recovered: 34%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,251 to 2,255.75	4.75	Dolostone. Medium light gray (N6) to medium gray (N5). Massive bedding. Slightly vuggy low apparent primary porosity and moderate apparent secondary porosity. Low apparent permeability. Well indurated.	RPM = 15 WOB: 7-9K 30-35 psi
2,255.75 to 2,265	9.25	No Recovery.	

FORM NO. 05-02

Observer's Initials: HK, RAW

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 2,325 Feet bls to 2,340 Feet bls

DATE: 3-21-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

Core Number: 6

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4 inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 15 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 7.5 feet

Percent Of Core Sample Length Recovered: 50%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,325 to 2,325.5	0.5	Dolostone. Medium gray (N5) to medium dark gray (N4). Massive bedding. Crystalline texture. Vuggy, low apparent primary porosity and moderate apparent secondary porosity. Low apparent permeability. Well indurated.	RPM = 23 WOB: 5-8K lbs 30-100 psi
2,325.5 to 2,331	5.5	Dolostone. Mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2) and medium bluish gray (5B 5/1). Massive bedding. Crystalline texture. Vuggy, low apparent primary porosity and moderate apparent secondary porosity. Low apparent permeability. Well indurated.	RPM = 23 WOB: 8-10K lbs 20-140 psi
2,331 to 2,332.5	1.5	Dolostone. Mottled grayish orange (10YR 7/4) to dusky yellowish brown (10YR 2/2). Massive bedding. Crystalline texture. Vuggy, low apparent primary porosity and moderate apparent secondary porosity. Low apparent permeability. Well indurated.	RPM = 32 WOB: 6-10K lbs 60-90 psi

FORM NO. 05-02

Observer's Initials: HK, RAW

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,332.5 to 2,340	7.5	No Recovery.	

MWH

IW-1 CORE DESCRIPTION

CORED INTERVAL: 2,393 Feet bls to 2,408 Feet bls

DATE: 3-23-05

THREE OAKS WWTP, DEEP INJECTION WELL SYSTEM

JOB NUMBER: 3220139.010101

Core Number: 7

CONTRACTOR: Youngquist Brothers, Inc.

Diameter: 4 inch

PROJECT MGR: Mark Chandler

Length Of Cored Interval: 15 feet

OWNER: Lee County Utilities

Length Of Core Sample Recovered: 5 feet

Percent Of Core Sample Length Recovered: 33%

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,393 to 2,395	2	Dolostone. Light olive gray (5Y 6/1) and medium bluish gray (5B 5/1). Massive bedding. Micro-crystalline texture. Low primary porosity and moderate secondary porosity. Low apparent permeability. Well indurated.	RPM = 12 WOB: 7-8K lbs 30 psi
2,395 to 2,395.5	0.5	Dolostone. Medium bluish gray (5B 5/1) and light olive gray (5Y 6/1). Massive bedding. Micro-crystalline texture. Low apparent primary porosity and moderate apparent secondary porosity. Low apparent permeability. Very well indurated.	RPM = 14 WOB: 6-7K lbs 30 psi

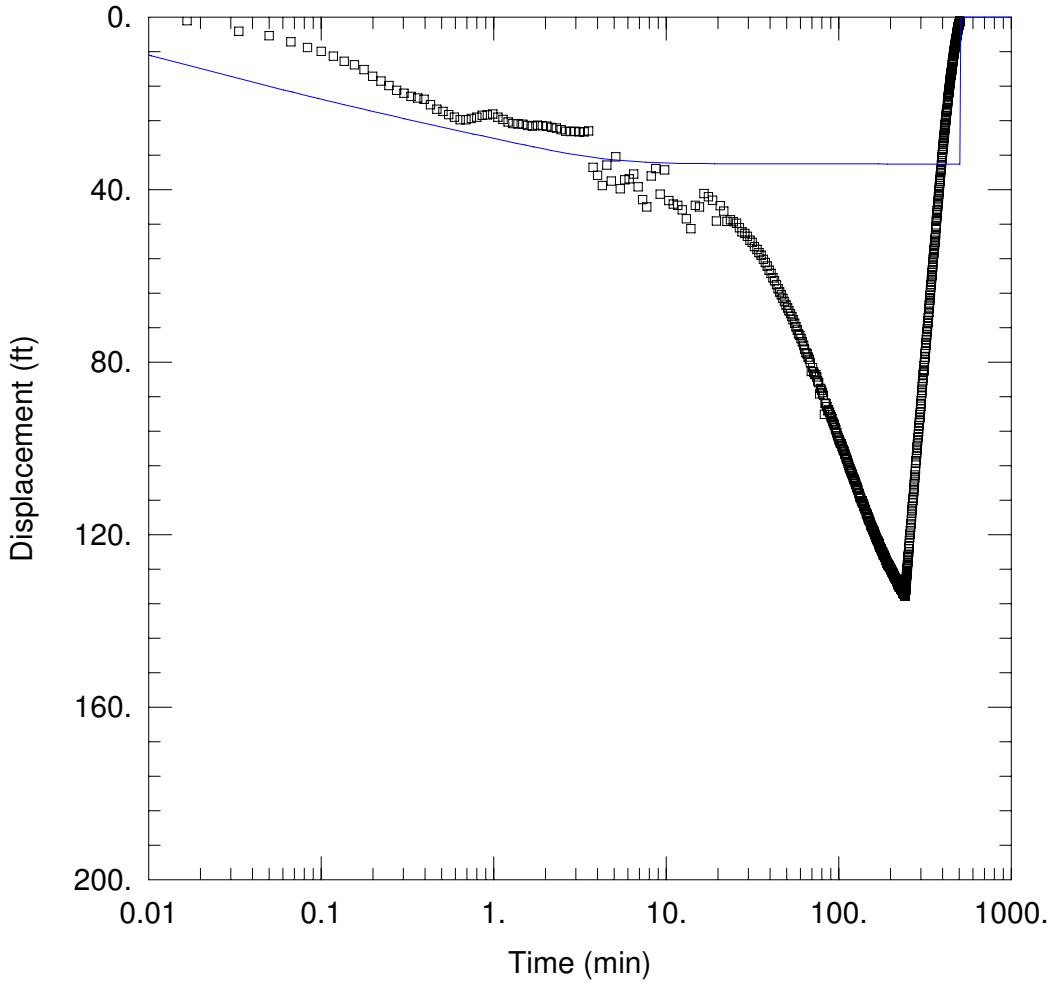
FORM NO. 05-02

Observer's Initials: HK, GY

DEPTH (feet below pad)	DEPTH INTERVAL (feet)	DESCRIPTION	DRILLING COMMENTS
2,395.5 to 2,398	2.5	Dolostone. Light olive gray (5Y 6/1) and medium bluish gray (5B 5/1). Massive bedding. Crystalline texture. Low primary porosity and moderately vuggy, sucrosic secondary porosity. Low apparent permeability. Well indurated.	RPM = 14-15 WOB: 5-8K 30 psi
2,398 to 2,408		No Recovery.	

Appendix J

Packer Test Graphical Analyses



PACKER TEST 1 (1,440 TO 1,480) FEET BLS

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

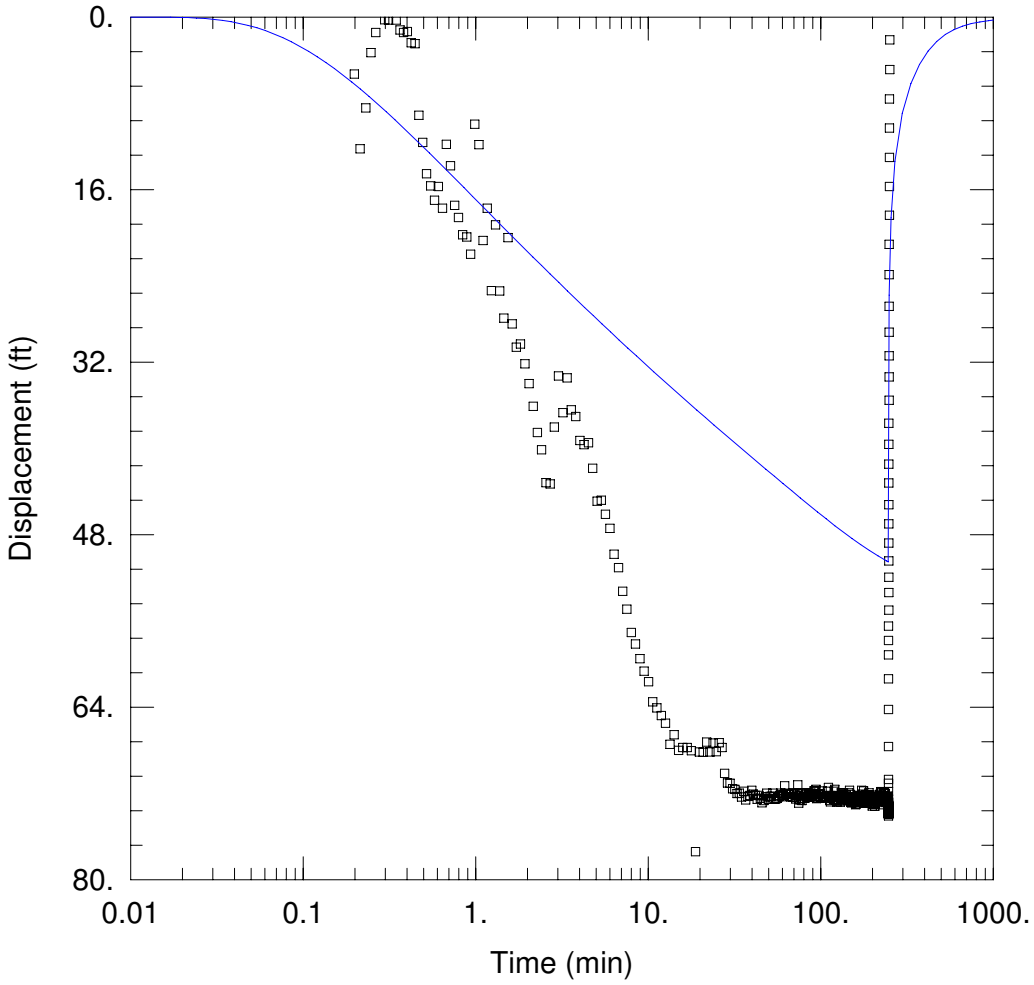
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 4.387 ft^2/day
r/B = 0.1
T' = 1440. ft^2/day

S = 0.0002367
ß = 0.1
S' = 0.001



PACKER TEST 2 (1,150 TO 1,190) FEET BLS

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/26/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

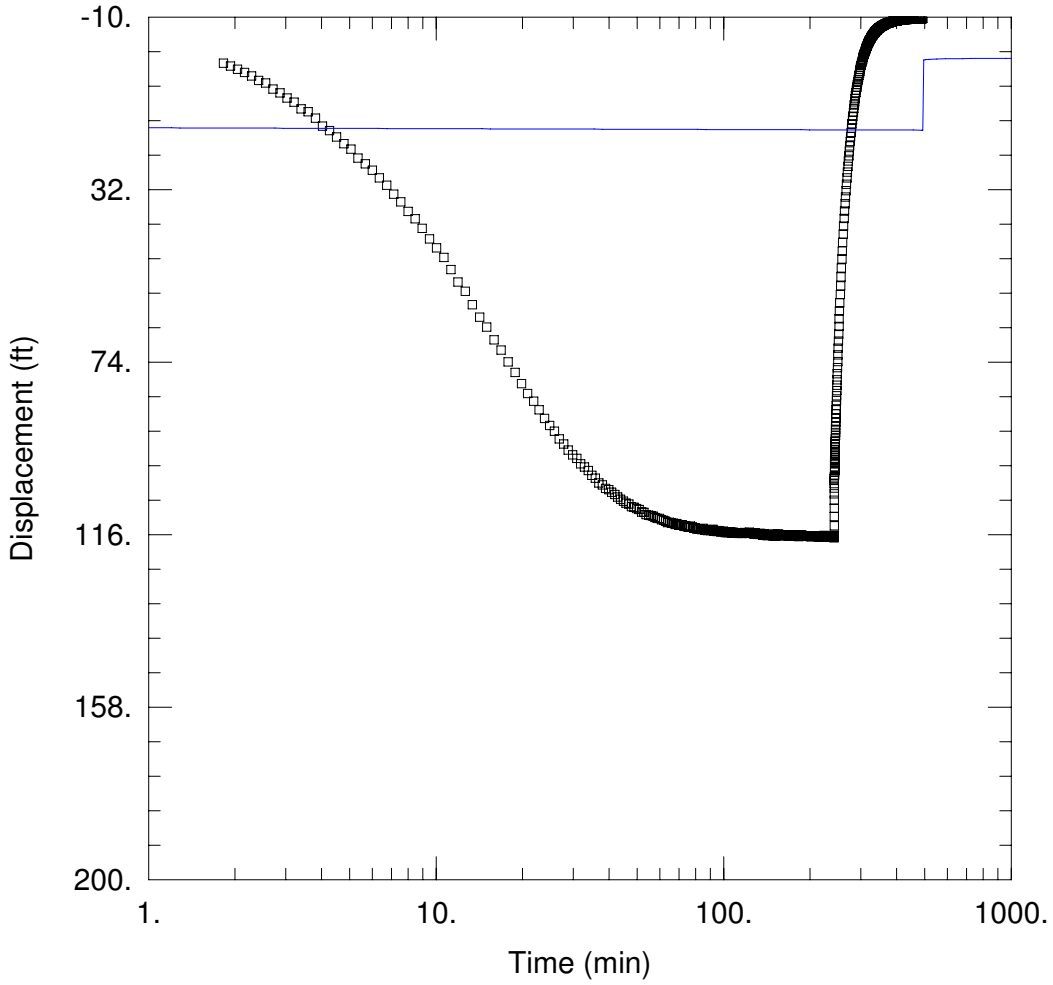
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 56.83 ft^2/day
r/B = 0.1
T' = 1440. ft^2/day

S = 0.04782
ß = 0.1
S' = 0.001



PACKER TEST 3 (1,630 TO 1,670) FEET BLS

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

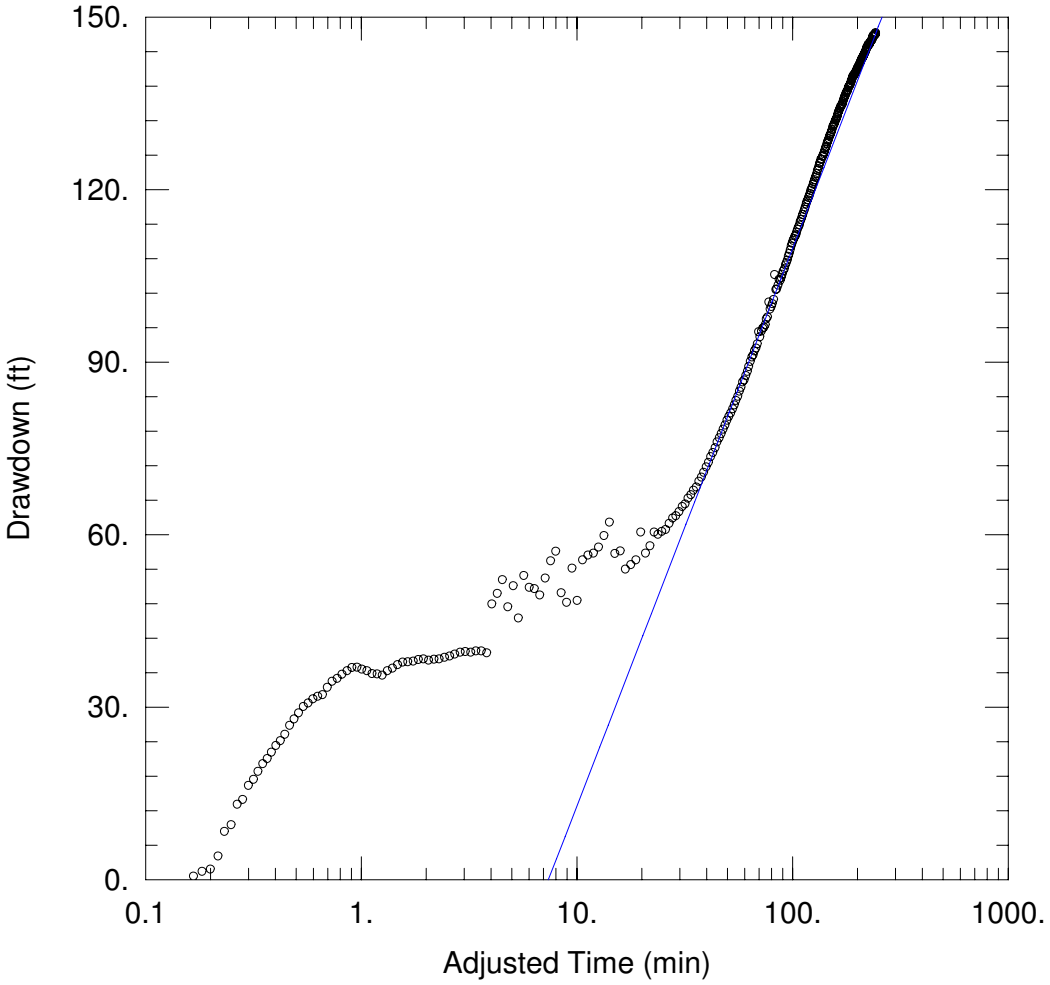
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 39.23 ft^2/day
r/B = 0.1
T' = 1440. ft^2/day

S = 4.472E-6
ß = 0.1
S' = 0.001



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

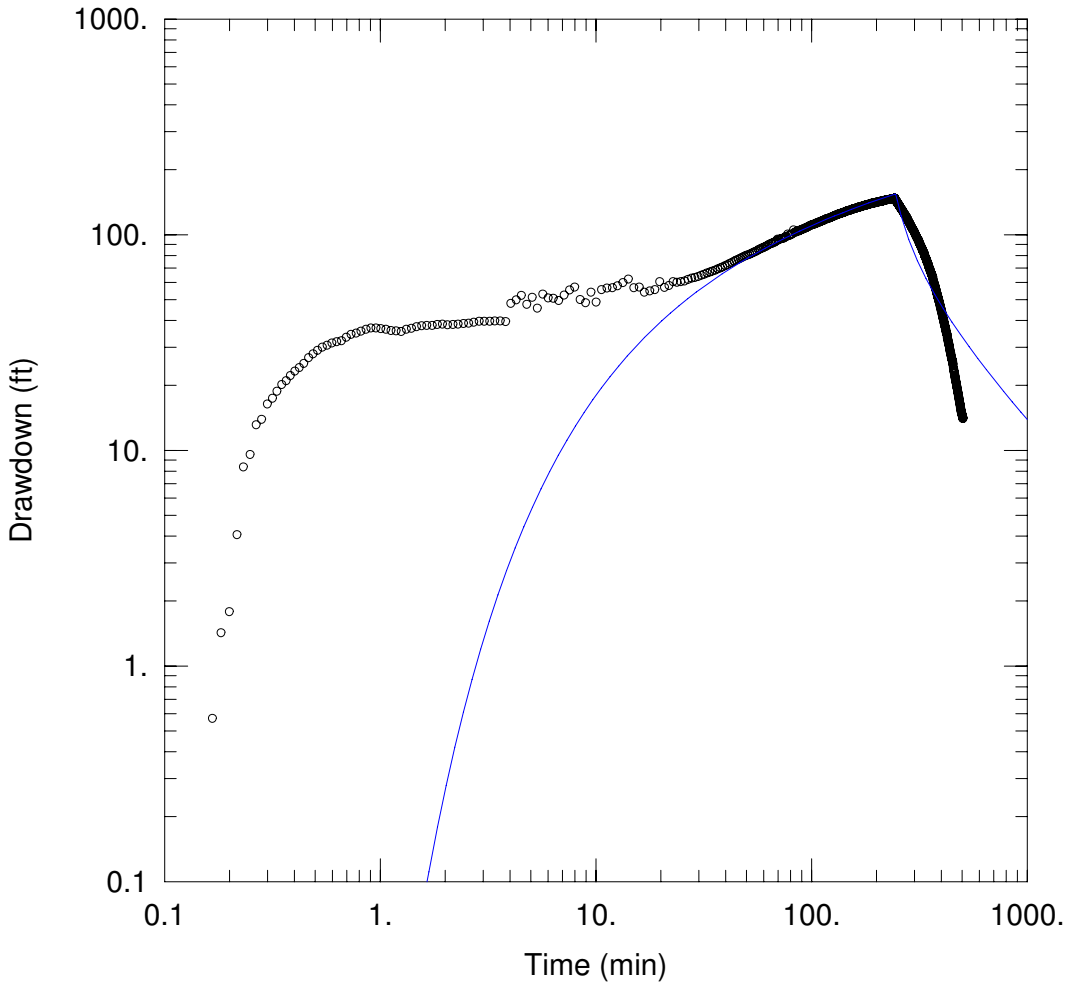
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 0.7276 ft^2/day

S = 0.134



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

PROJECT INFORMATION

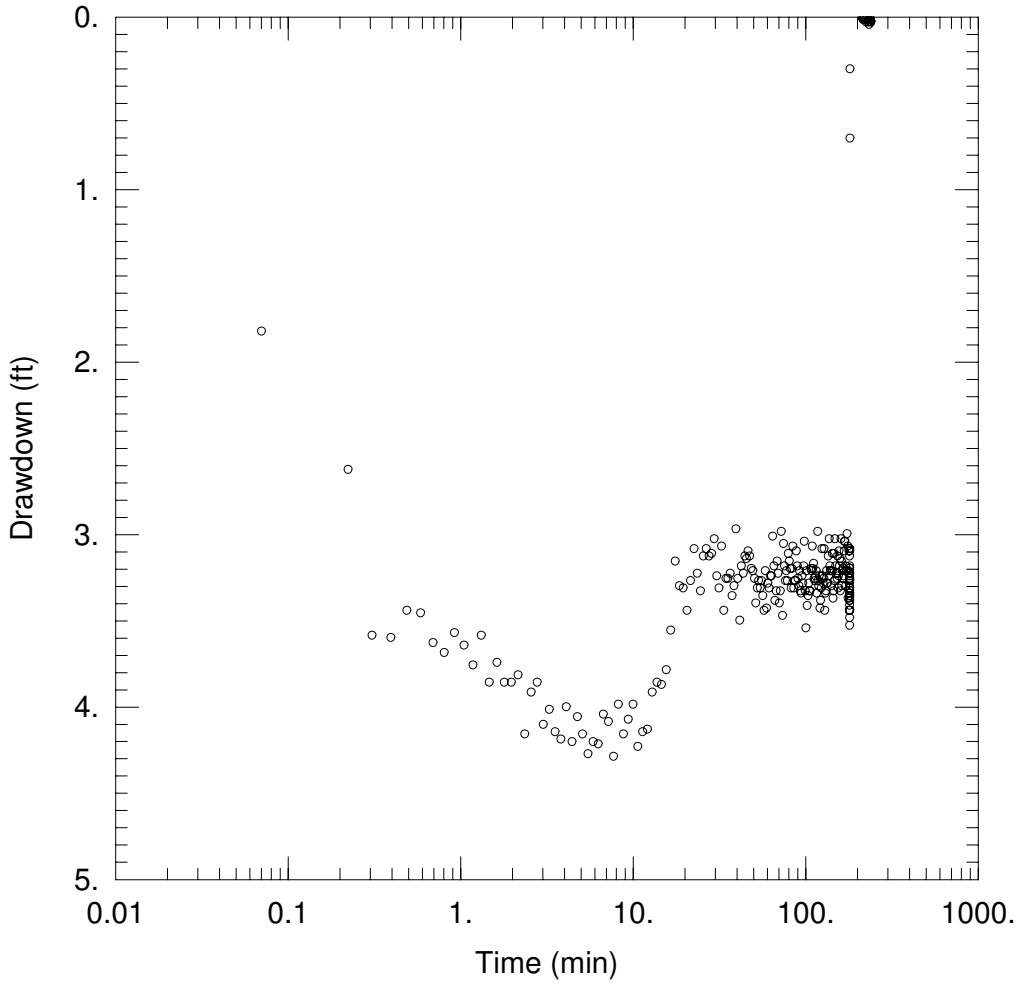
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 0.5684 ft^2/day
ß = 0.005955
b = 40. ft

S = 0.1902
Kz/Kr = 1.



PACKER TEST 1 (1,149 FT BLS TO 1,200 FT BLS)

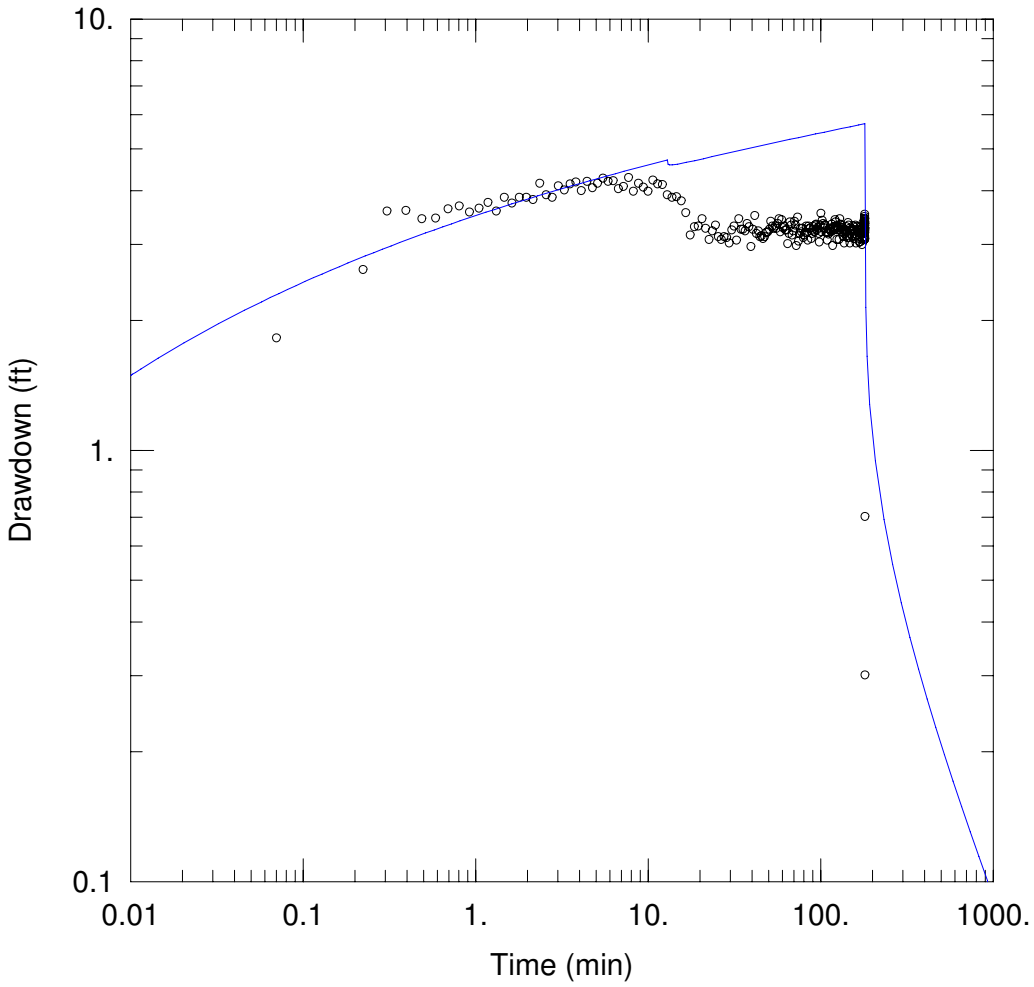
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/1/05

AQUIFER DATA

Saturated Thickness: 51. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 1 (1,149 FT BLS TO 1,200 FT BLS)

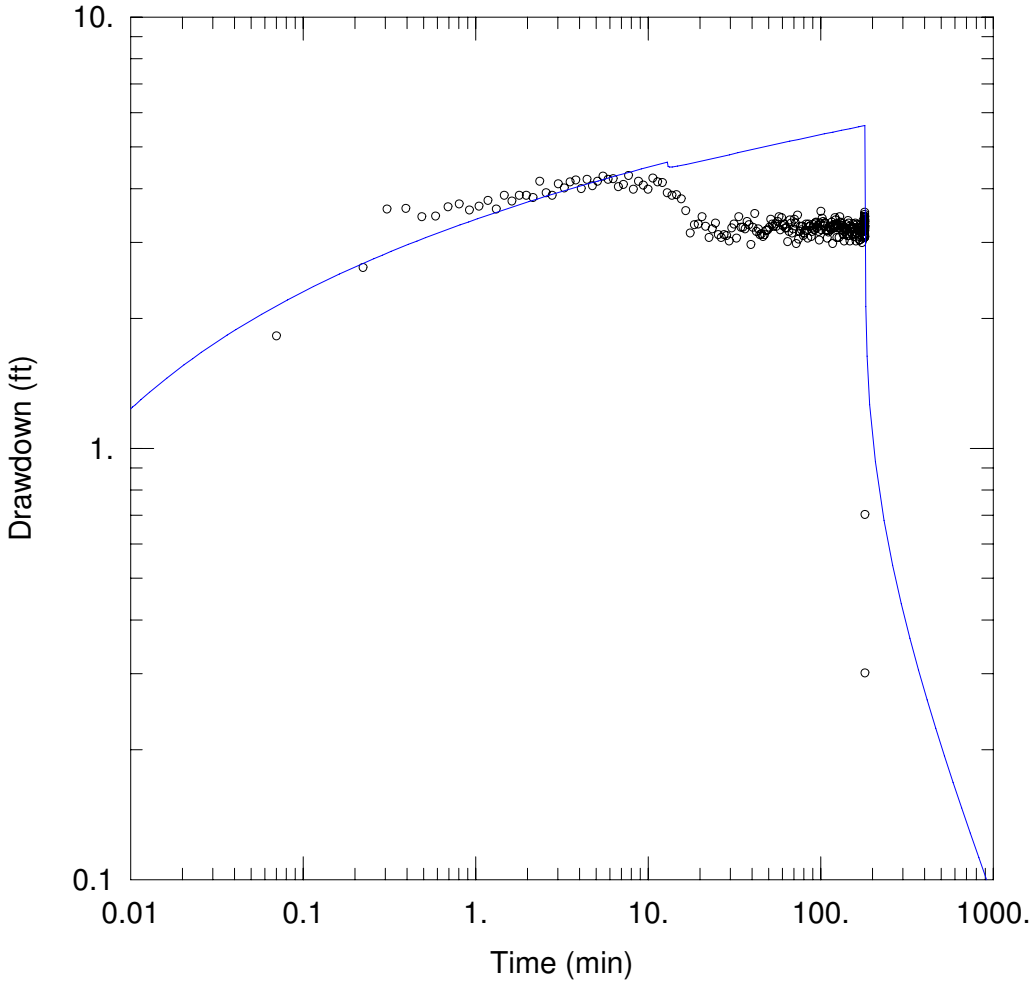
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/1/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 1824.1 ft^2/day
S = 2.771E-5
ß = 10.
Kz/Kr = 1.
b = 51. ft



PACKER TEST 1 (1,149 FT BLS TO 1,200 FT BLS)

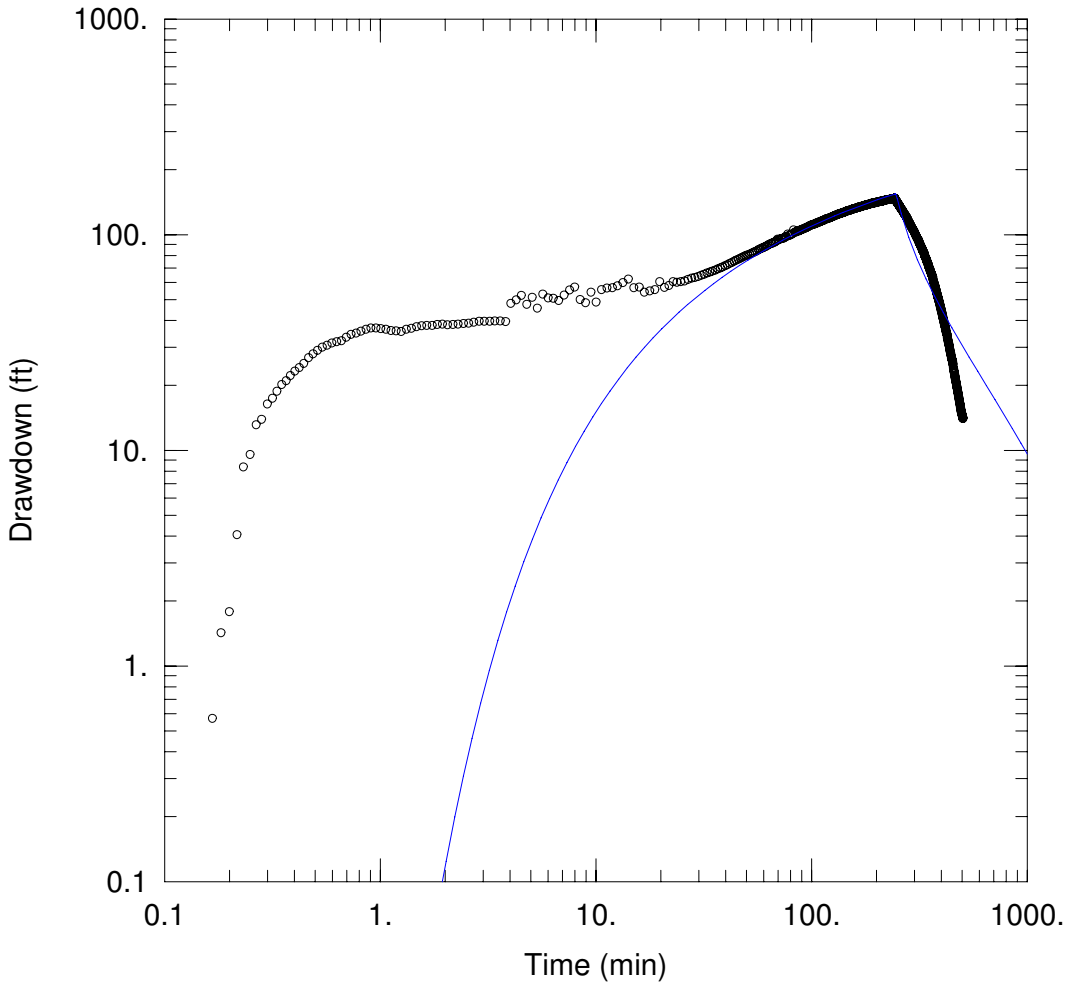
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/1/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 3719.7 ft^2/day
S = 0.07156
r/B = 1.003E-5
Kz/Kr = 1.
b = 51. ft



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

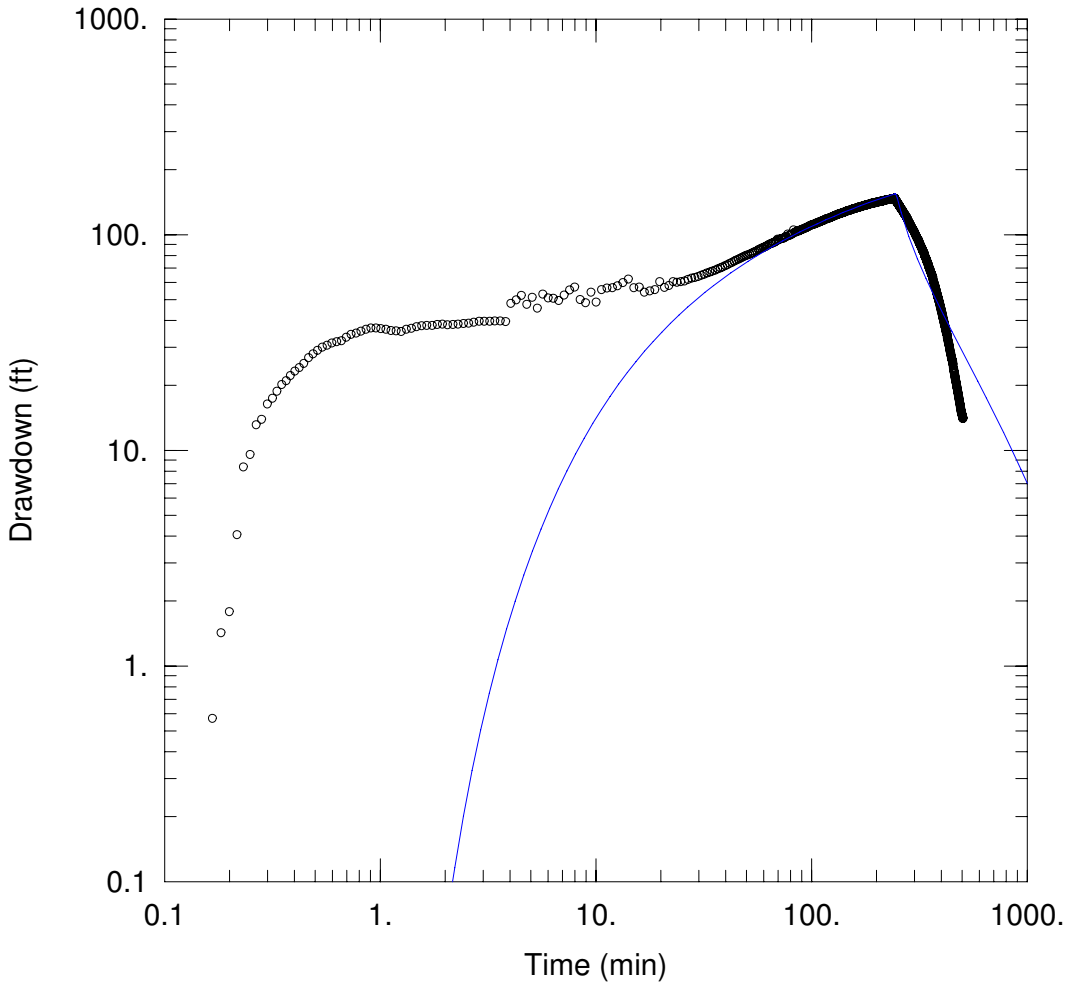
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 0.5224 ft^2/day
S = 0.2101
r/B = 0.147
Kz/Kr = 1.
b = 40. ft



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

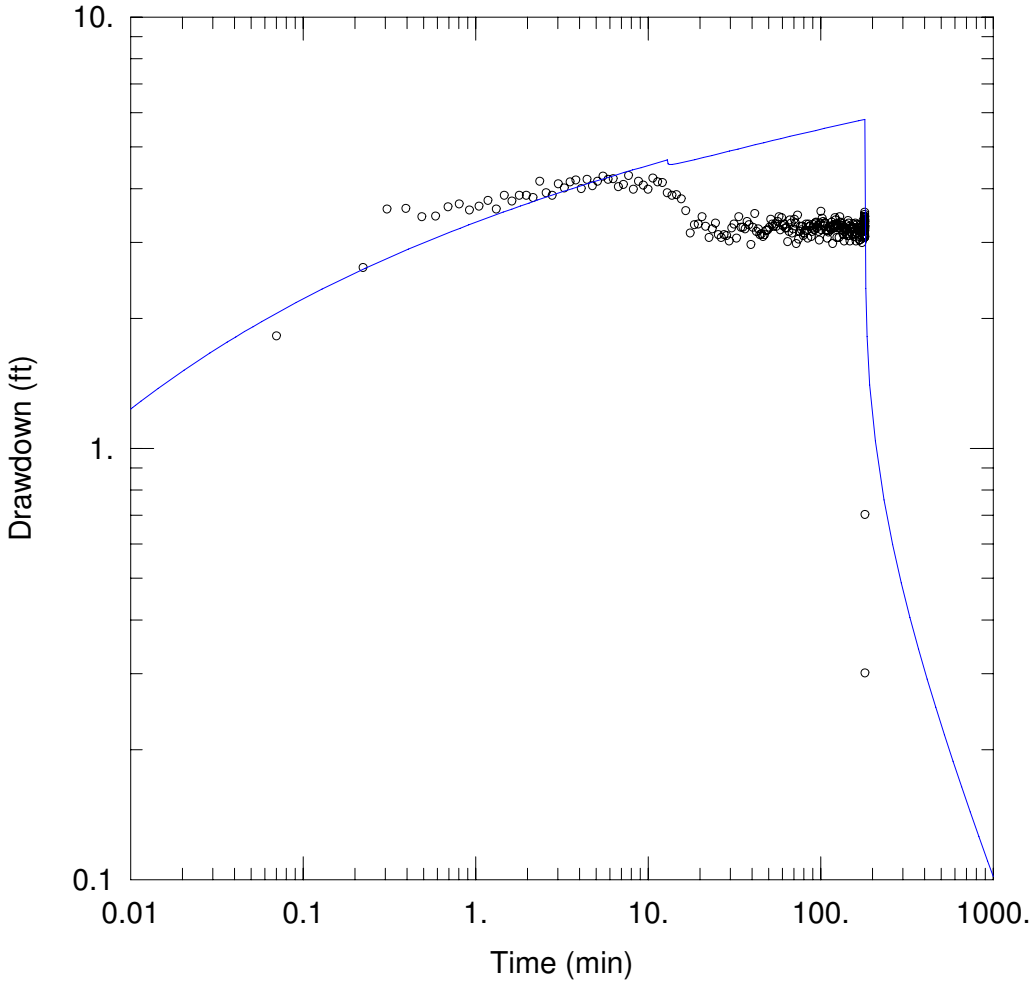
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 0.4596 ft^2/day
r/B = 0.2244
T' = 1.44E+8 ft^2/day

S = 0.1979
ß = 0.04105
S' = 1.0E-10



PACKER TEST 1 (1,149 FT BLS TO 1,200 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/1/05

AQUIFER DATA

Saturated Thickness: 51. ft

Anisotropy Ratio (Kz/Kr): 1.

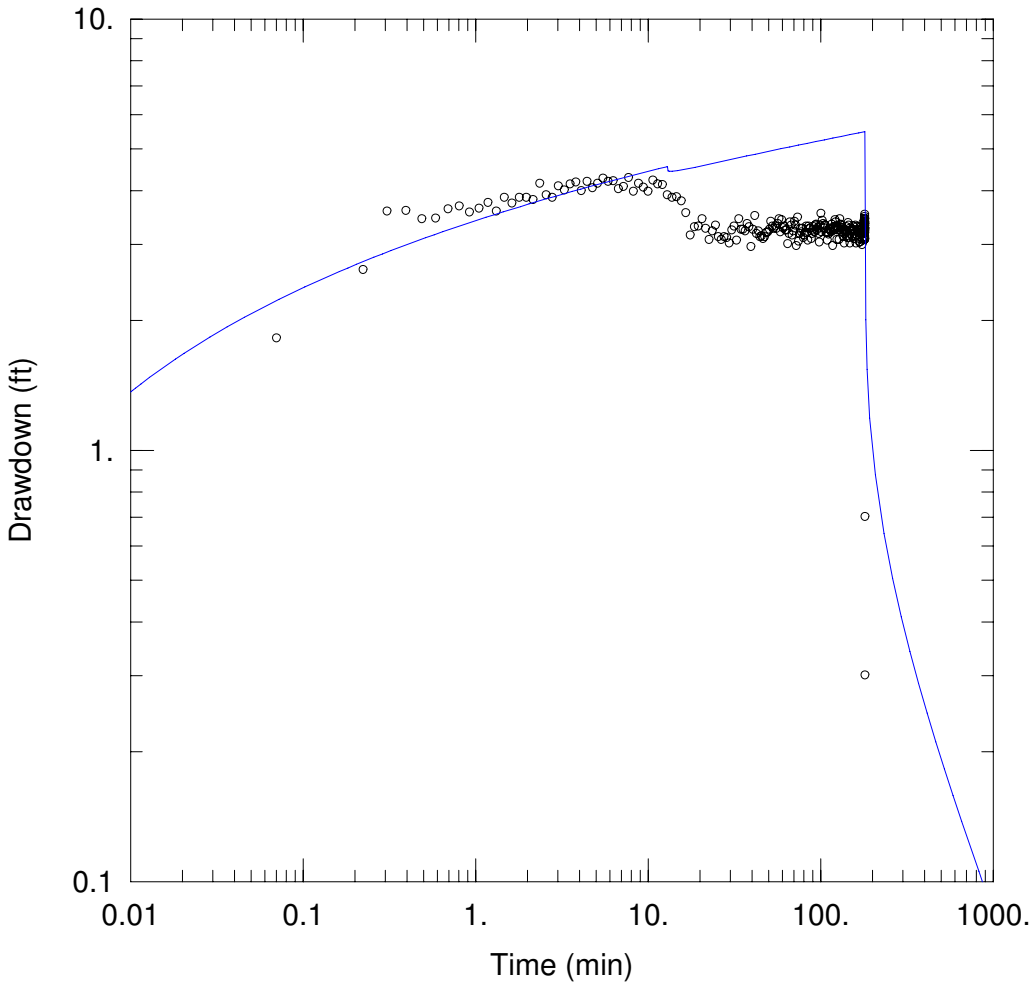
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 1654.7 ft^2/day
r/B = 1.0E-5
T' = 1.44E+8 ft^2/day

S = 6.919E-5
ß = 10.
S' = 1.0E-10



PACKER TEST 1 (1,149 FT BLS TO 1,200 FT BLS)

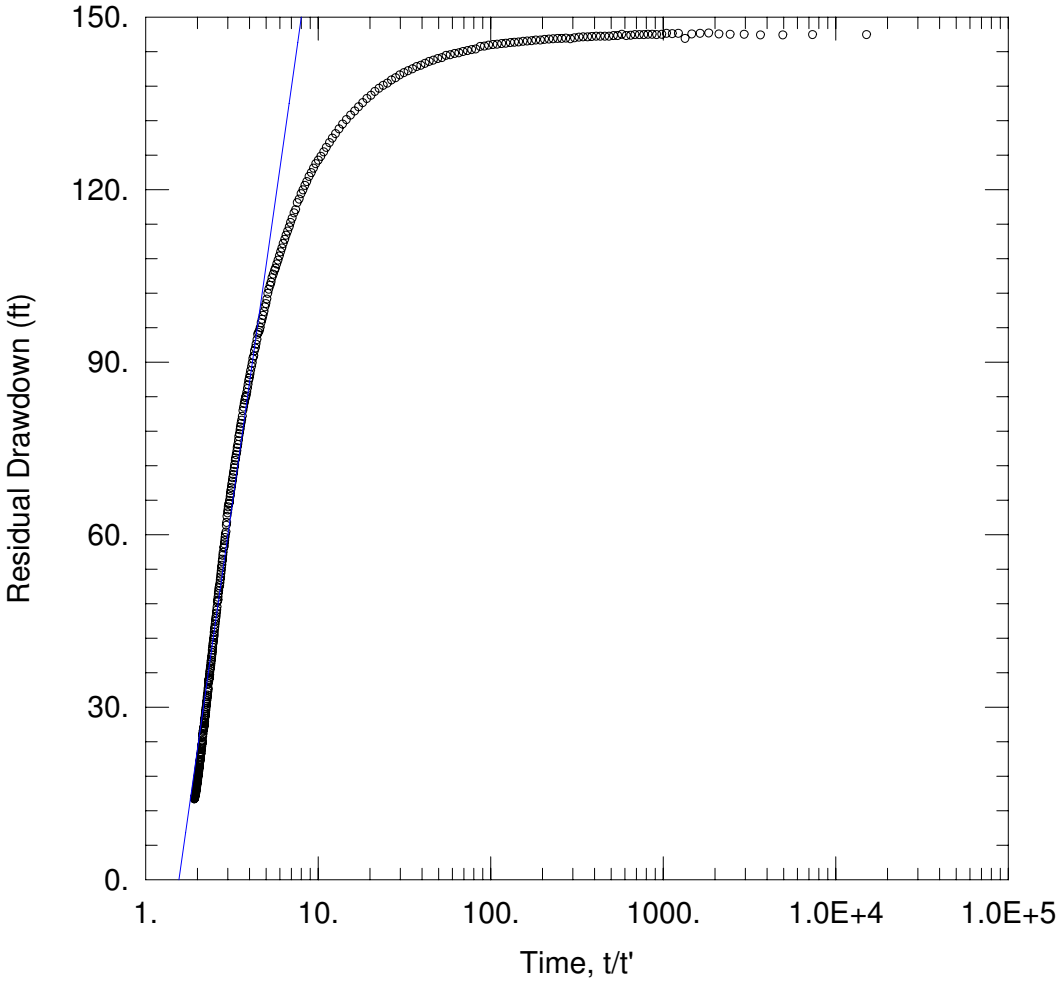
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/1/05

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 3949.7 ft^2/day
S = 0.04737
Kz/Kr = 1.
b = 51. ft



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

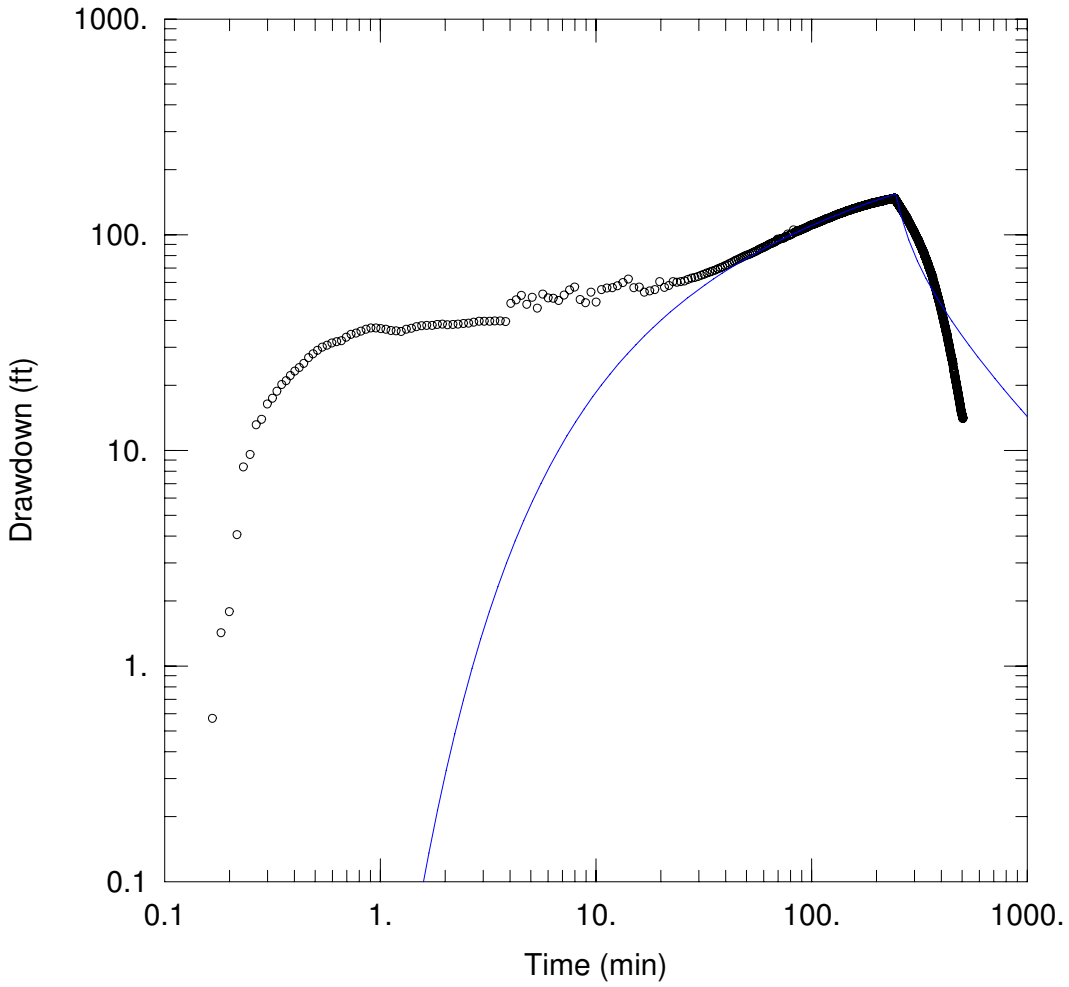
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 0.3339 ft^2/day

S/S' = 1.559



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

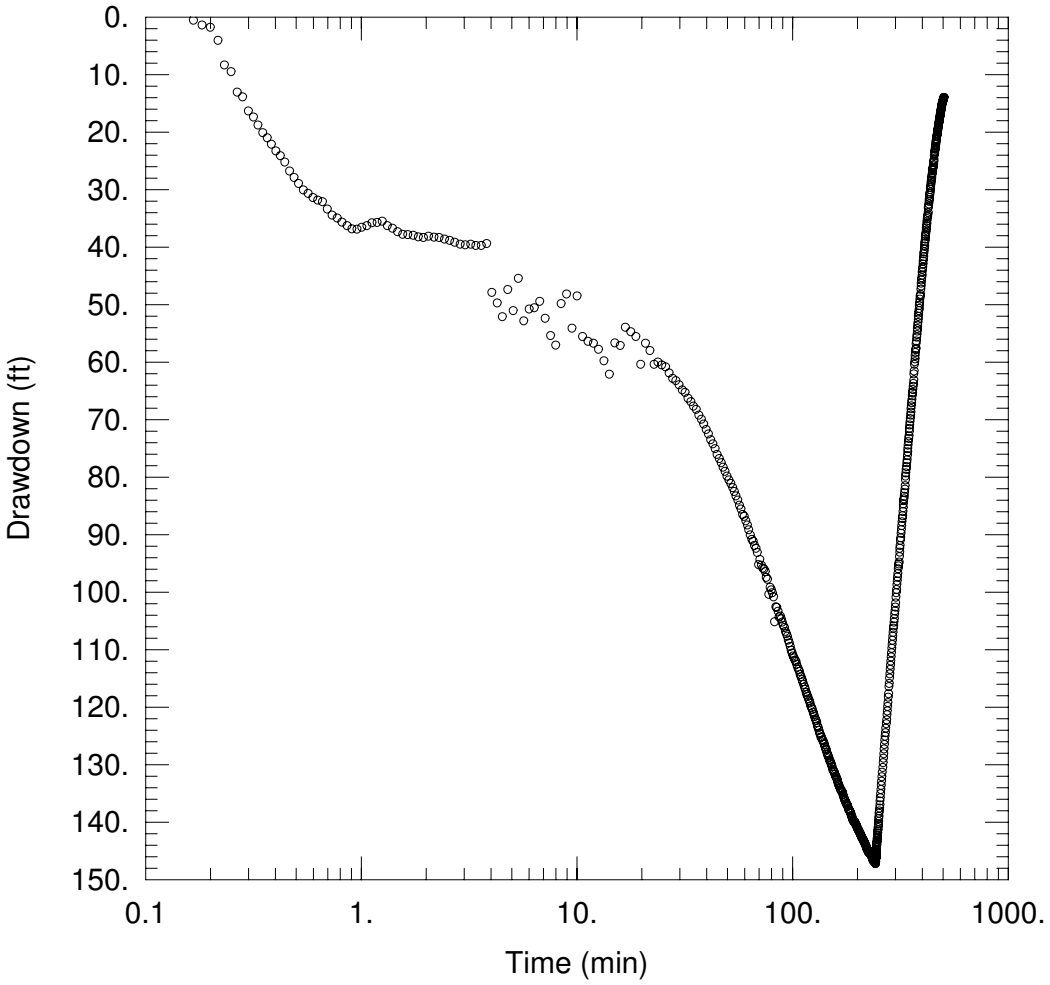
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

SOLUTION

Aquifer Model: Confined
Solution Method: Theis

T = 0.5897 ft^2/day
S = 0.1895
Kz/Kr = 1.
b = 40. ft



PACKER TEST 1 (1,440 FT BLS TO 1,480 FT BLS)

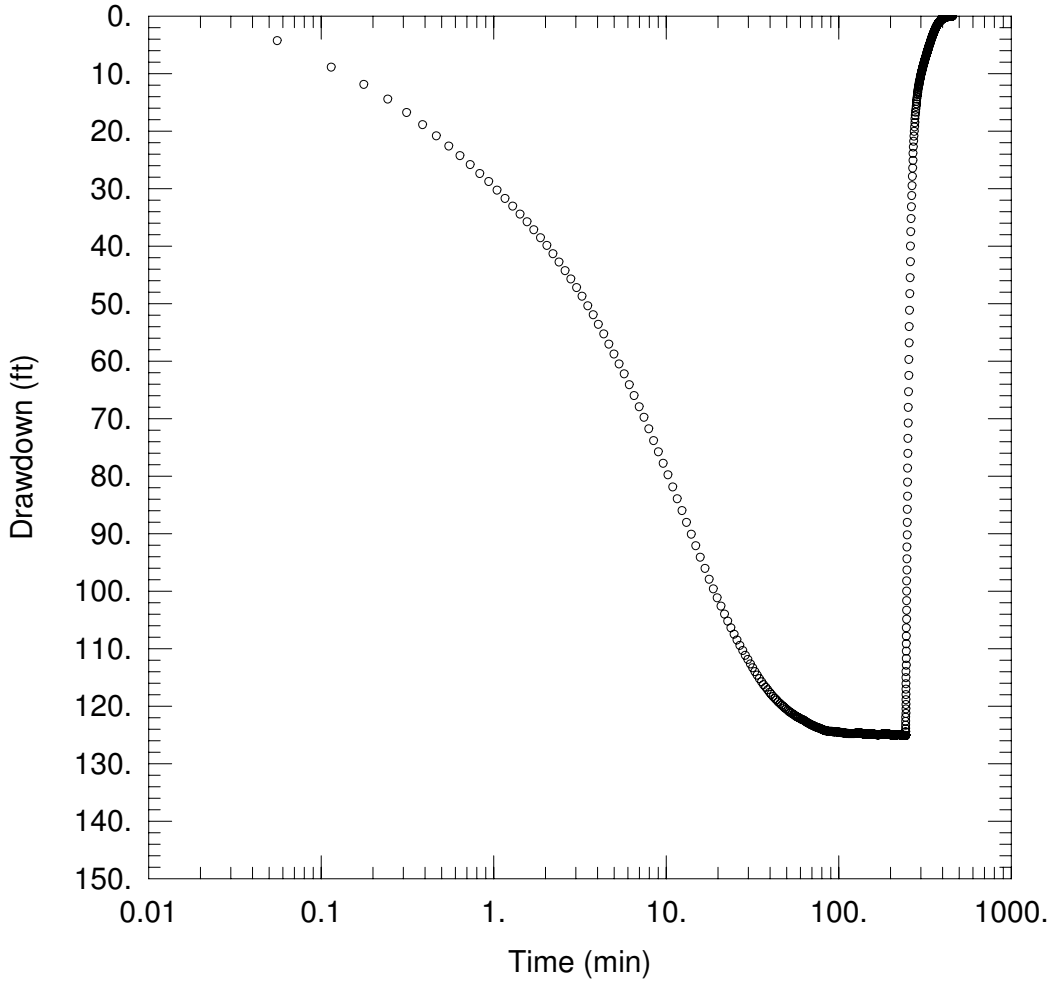
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/24/2005

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 2 (1,460 FT BLS TO 1,510 FT BLS)

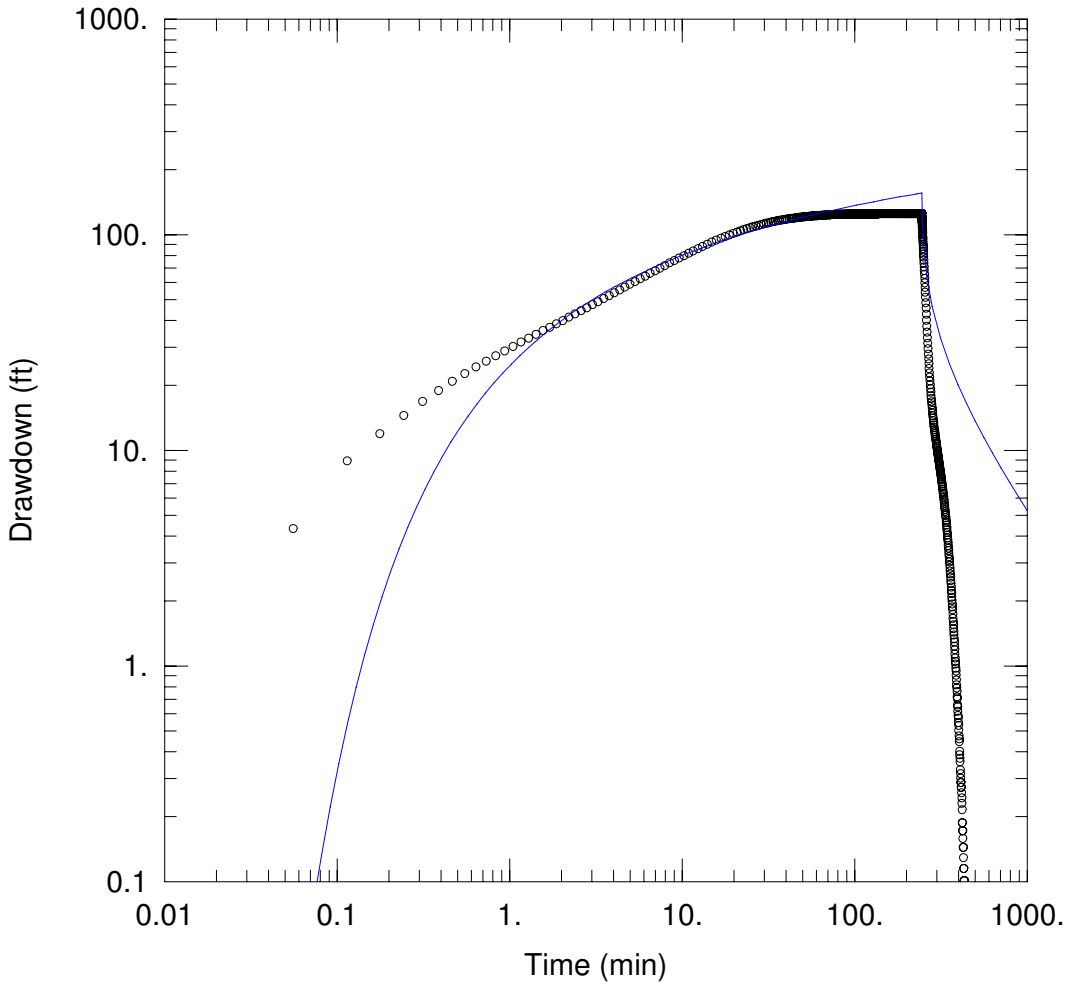
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/6/05

AQUIFER DATA

Saturated Thickness: 50. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 2 (1,460 FT BLS TO 1,510 FT BLS)

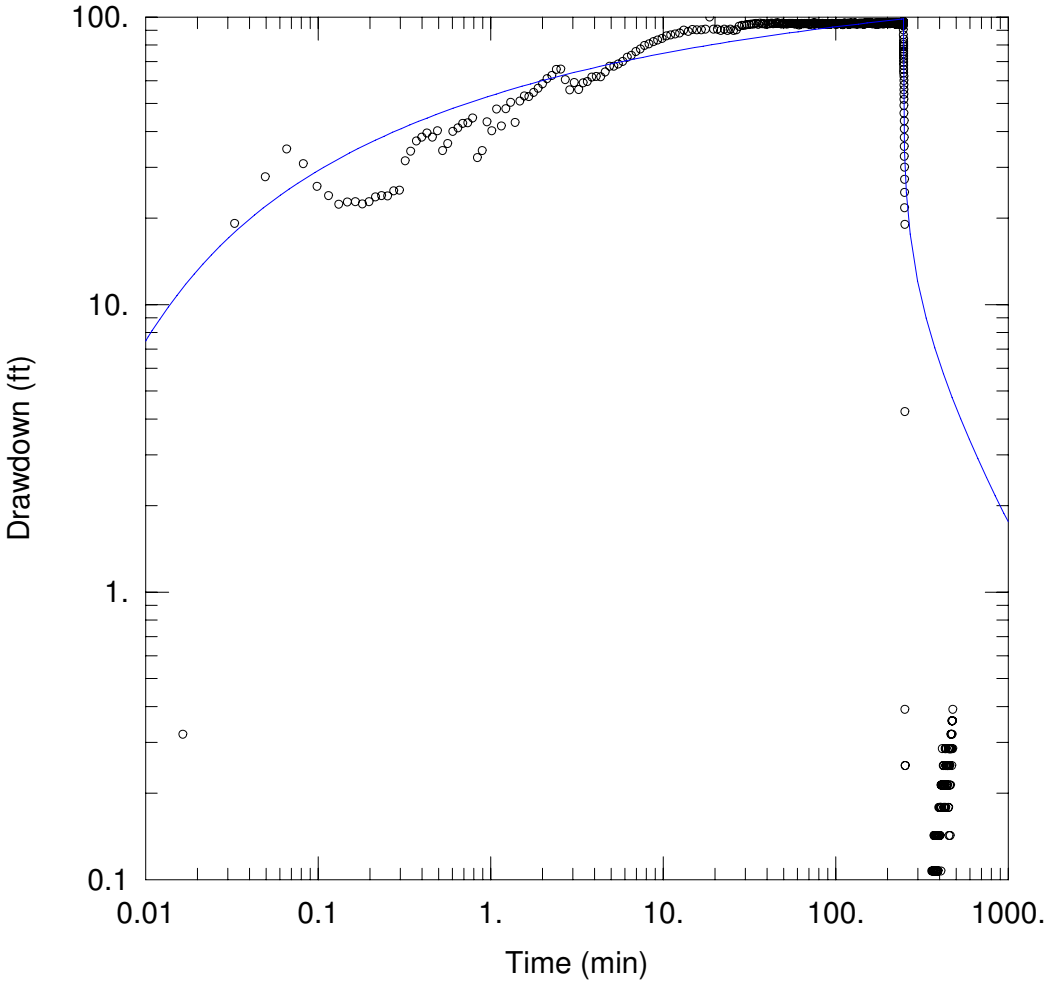
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 5.771 ft^2/day
ß = 0.01667
b = 50. ft
S = 0.07949
Kz/Kr = 1.



PACKER TEST 2 (1,150 FT BLS TO 1,190 FT BLS)

PROJECT INFORMATION

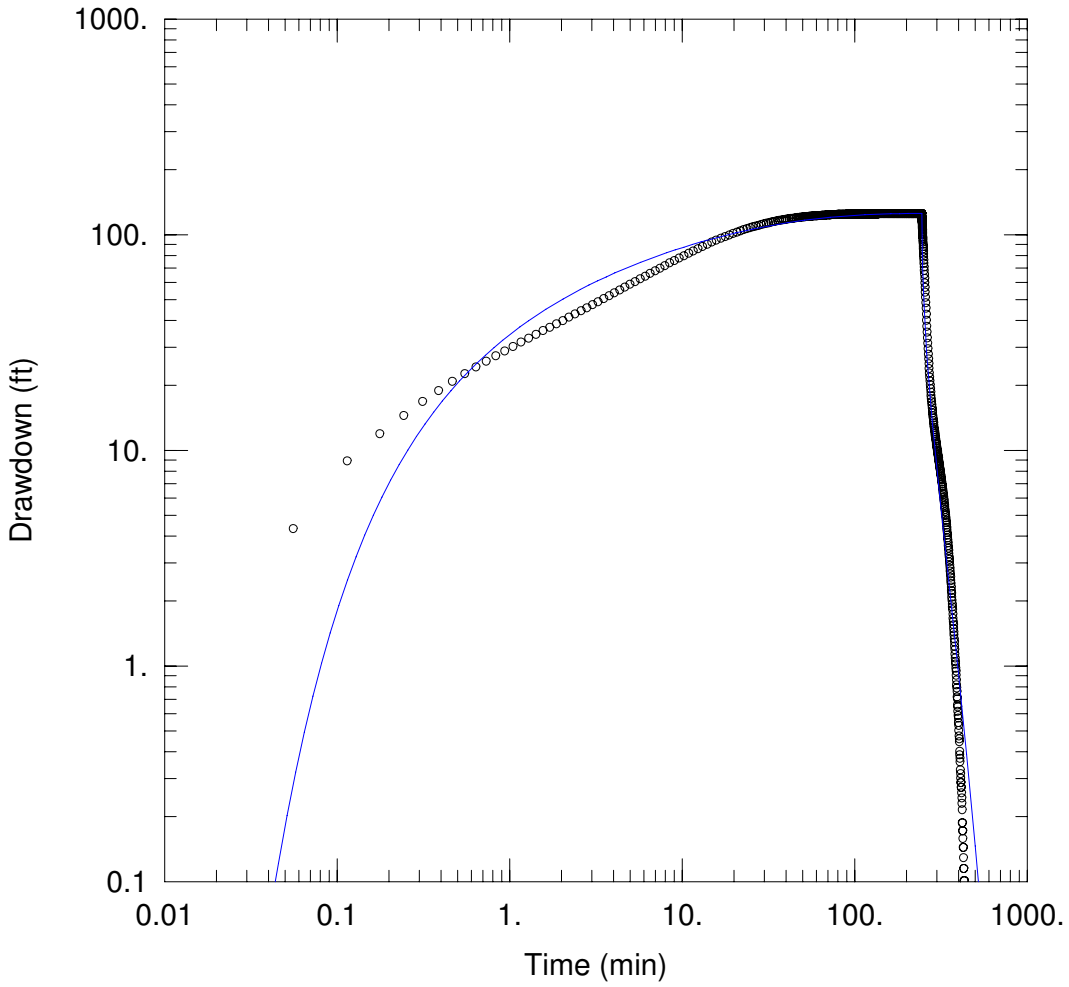
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/25/2005 to 2/26/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 53.28 ft^2/day
ß = 0.008411
b = 40. ft

S = 0.01007
Kz/Kr = 1.



PACKER TEST 2 (1,460 FT BLS TO 1,510 FT BLS)

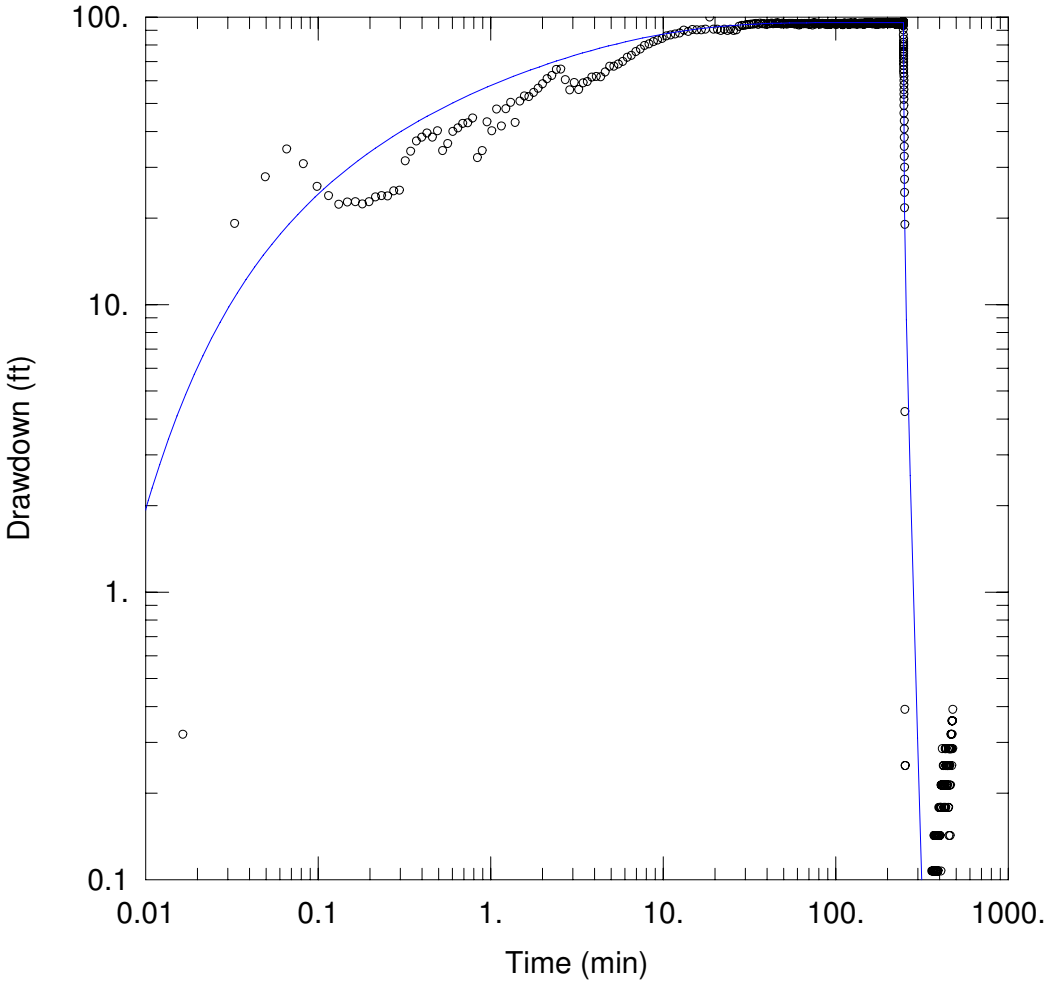
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/6/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 6.507 ft^2/day
S = 0.05049
r/B = 0.1
Kz/Kr = 1.
b = 50. ft



PACKER TEST 2 (1,150 FT BLS TO 1,190 FT BLS)

PROJECT INFORMATION

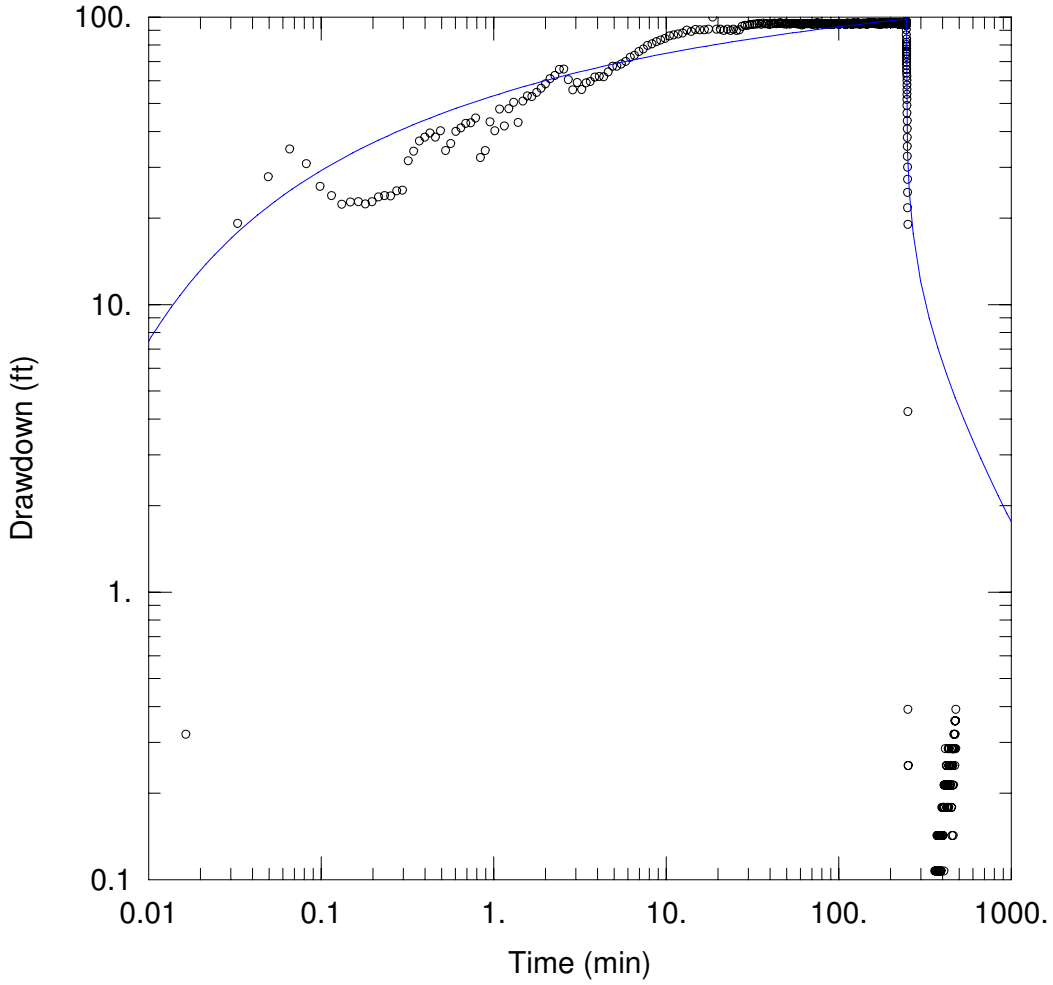
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/25/2005 to 2/26/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 39.1 ft^2/day
r/B = 0.05335
b = 40. ft

S = 0.02367
Kz/Kr = 1.



PACKER TEST 2 (1,150 FT BLS TO 1,190 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/25/2005 to 2/26/05

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

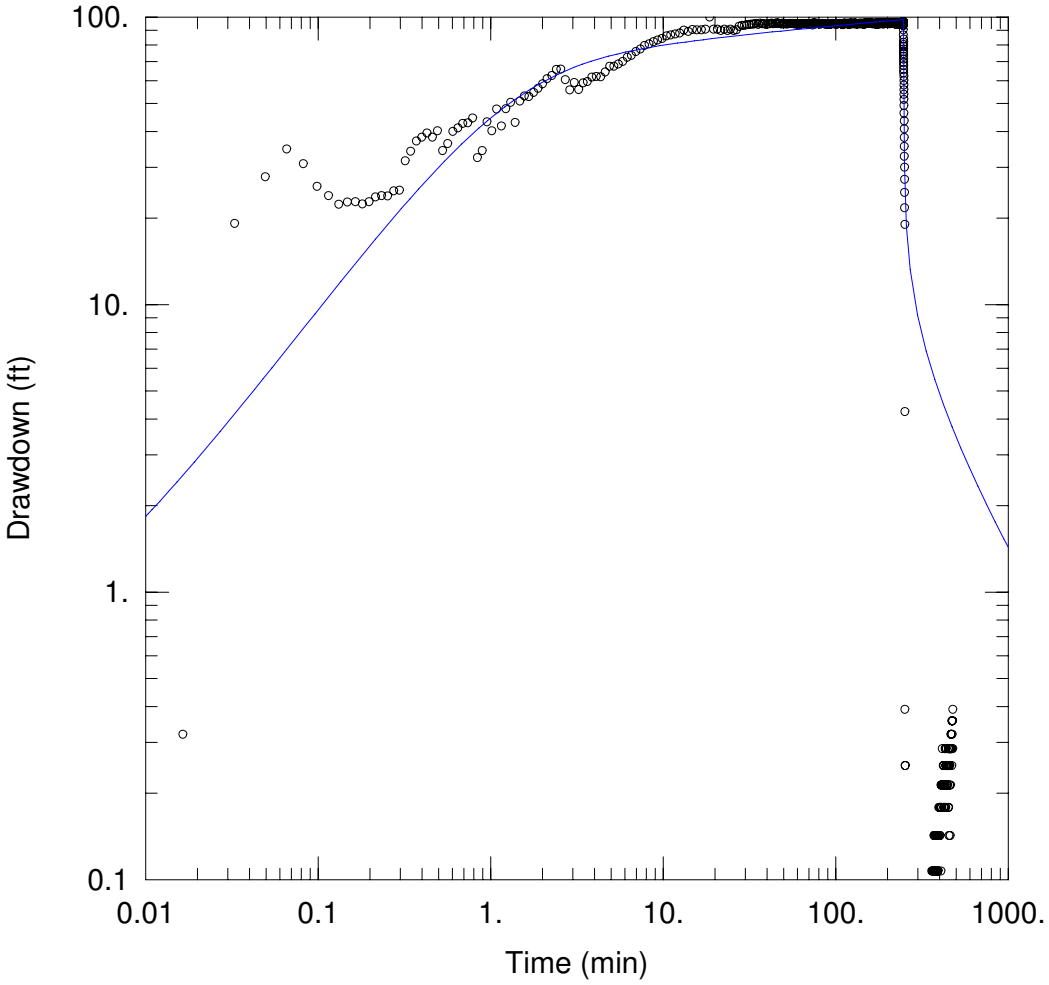
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 53.26 ft^2/day
r/B = 1.0E-5
T' = 7.066E+7 ft^2/day

S = 0.01008
ß = 0.008433
S' = 1.0E-10



PACKER TEST 2 (1,150 FT BLS TO 1,190 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/25/2005 to 2/26/05

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

SOLUTION

Aquifer Model: Confined

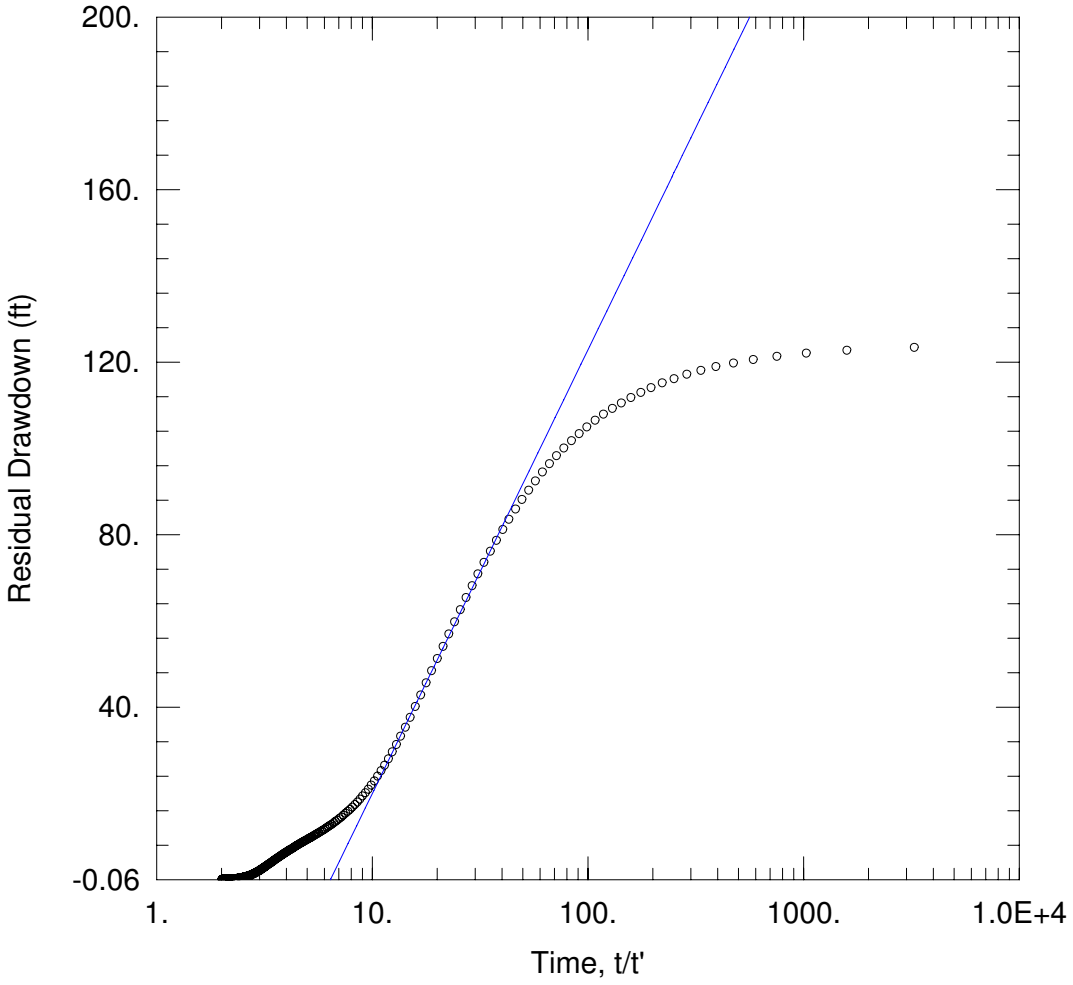
Solution Method: Papadopulos-Cooper

T = 122.4 ft^2/day

S = 2.367E-6

r(w) = 10. ft

r(c) = 0.2189 ft



PACKER TEST 2 (1,460 FT BLS TO 1,510 FT BLS)

PROJECT INFORMATION

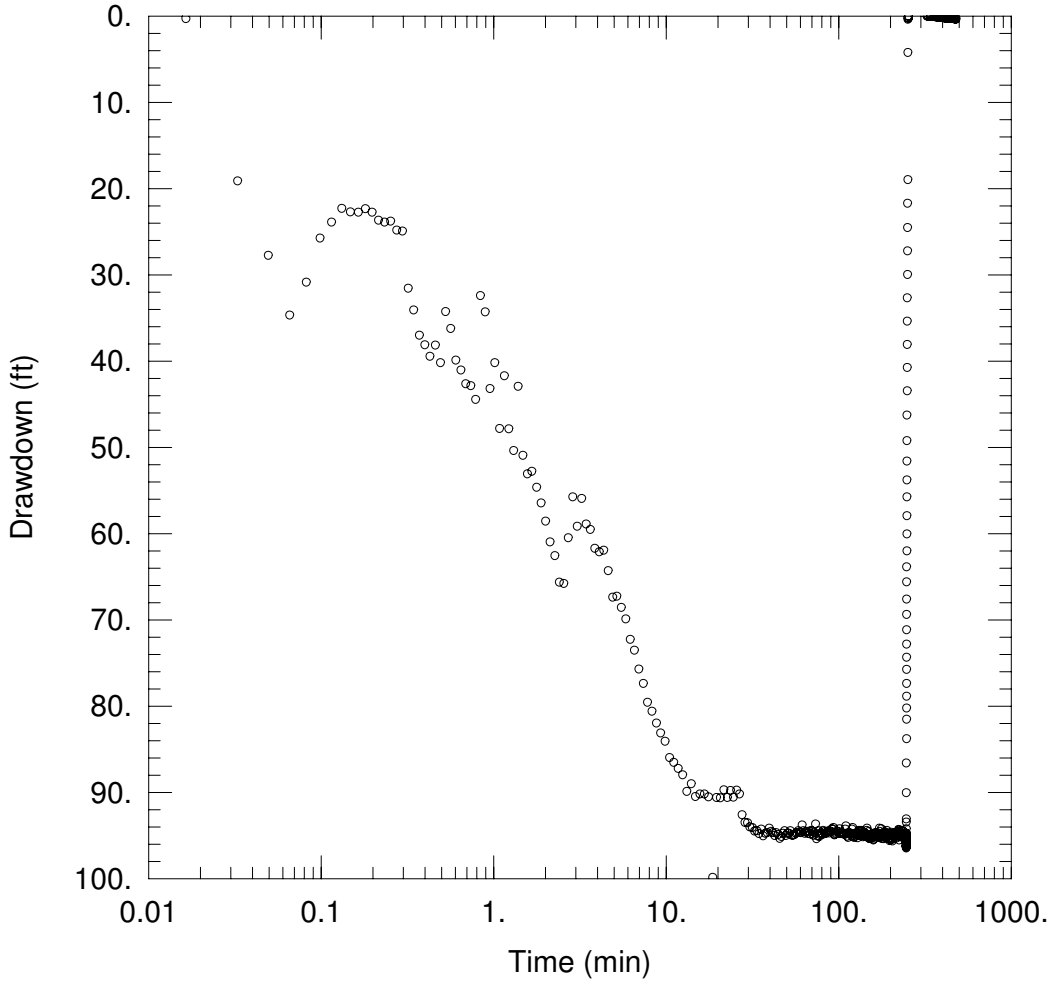
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/6/05

AQUIFER DATA

Saturated Thickness: 50. ft
Anisotropy Ratio (Kz/Kr): 1.

SOLUTION

Aquifer Model: Confined
Solution Method: Theis (Recovery)
T = 3.771 ft^2/day
S/S' = 6.408



PACKER TEST 2 (1,150 FT BLS TO 1,190 FT BLS)

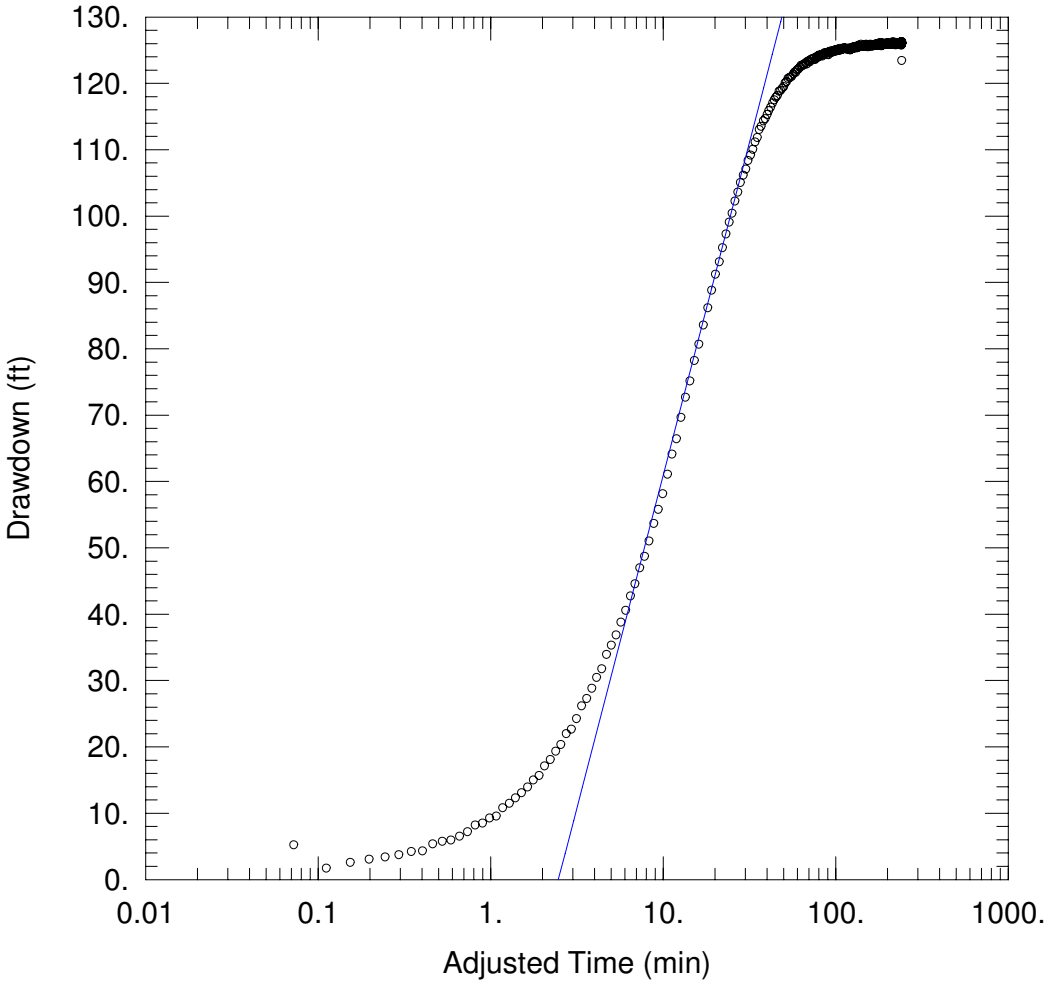
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/25/2005 to 2/26/05

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 3 (1,630 FT BLS TO 1,670 FT BLS)

PROJECT INFORMATION

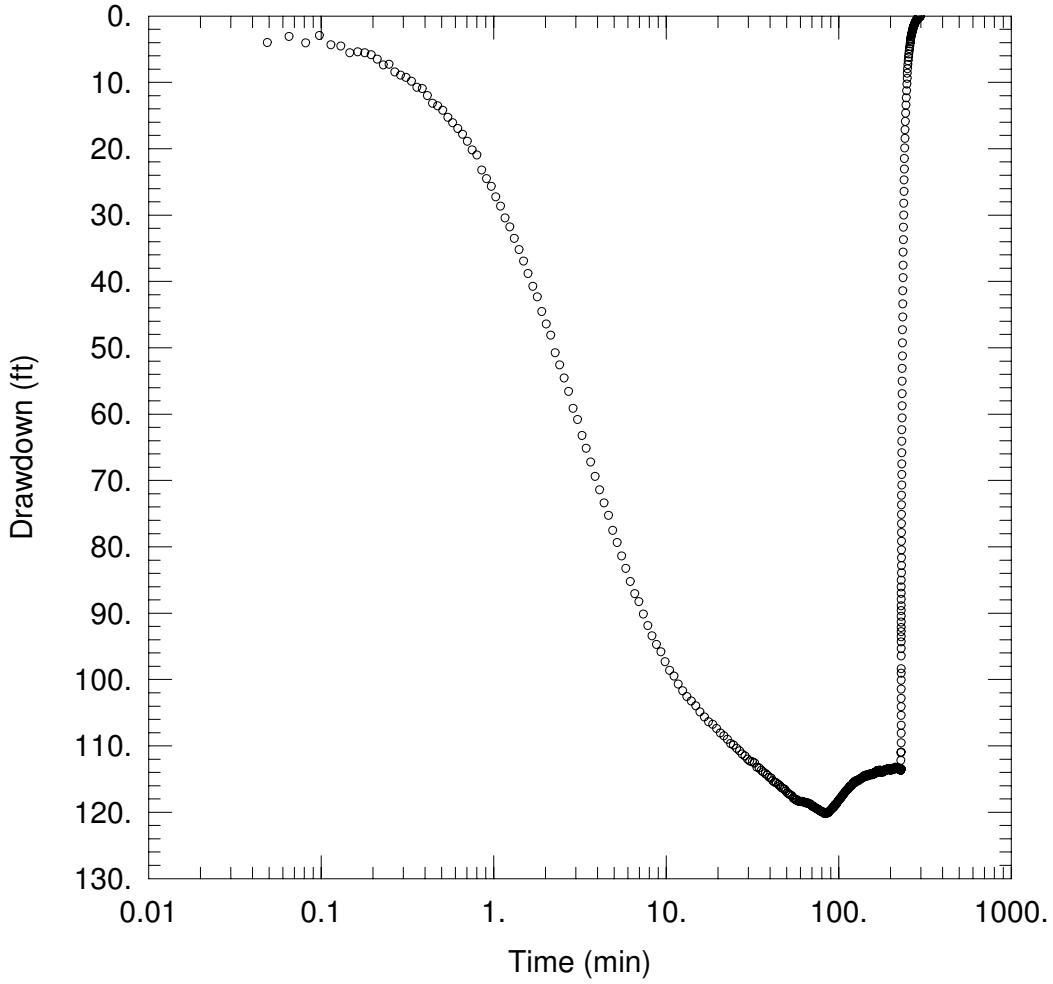
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/05

AQUIFER DATA

Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 1.

SOLUTION

Aquifer Model: Confined
Solution Method: Cooper-Jacob
T = 3.094 ft^2/day
S = 0.1905



PACKER TEST 3 (1,510 FT BLS TO 1,600 FT BLS)

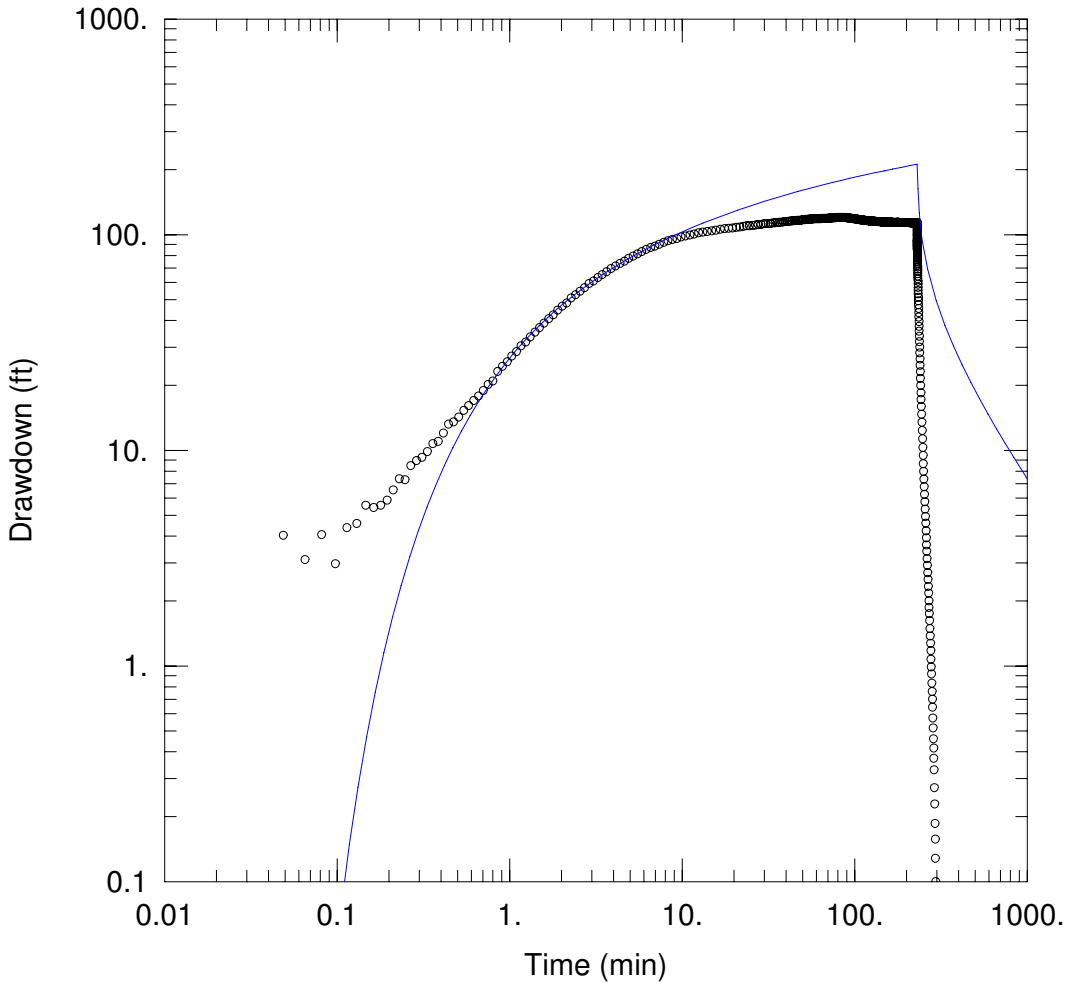
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/7/05

AQUIFER DATA

Saturated Thickness: 90. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 3 (1,510 FT BLS TO 1,600 FT BLS)

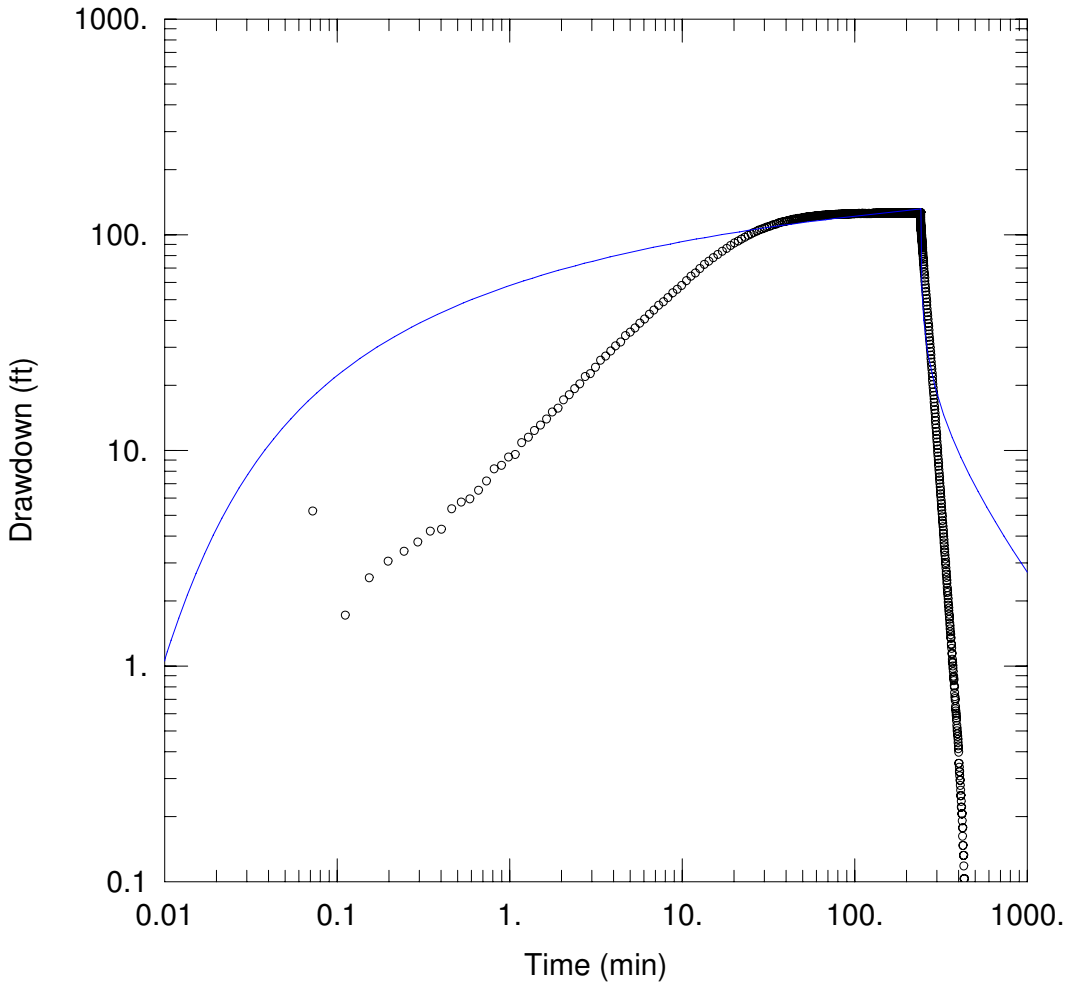
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/7/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 11.77 ft^2/day
S = 0.2123
ß = 0.01202
Kz/Kr = 1.
b = 90. ft



PACKER TEST 3 (1,630 FT BLS TO 1,670 FT BLS)

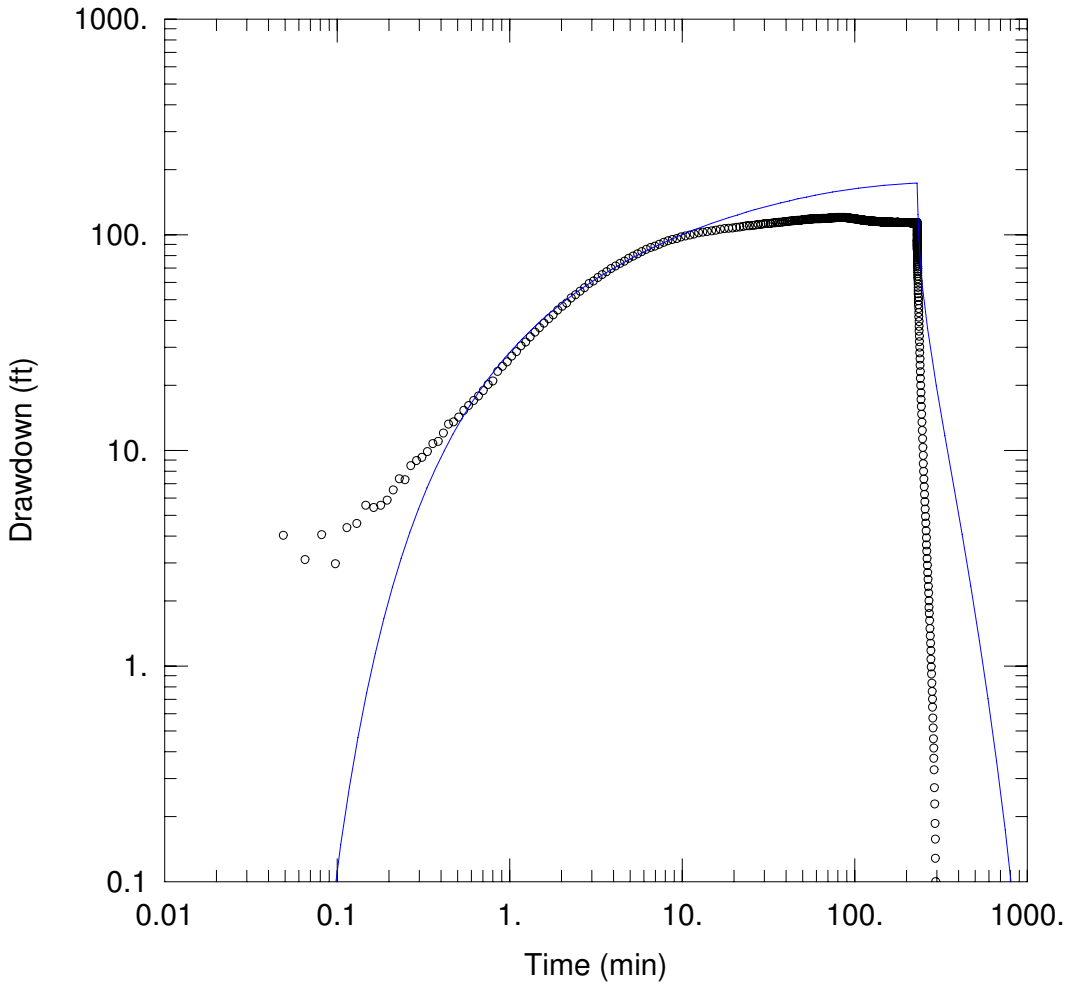
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 7.548 ft^2/day
S = 0.006189
ß = 0.01262
Kz/Kr = 1.
b = 40. ft



PACKER TEST 3 (1,510 FT BLS TO 1,600 FT BLS)

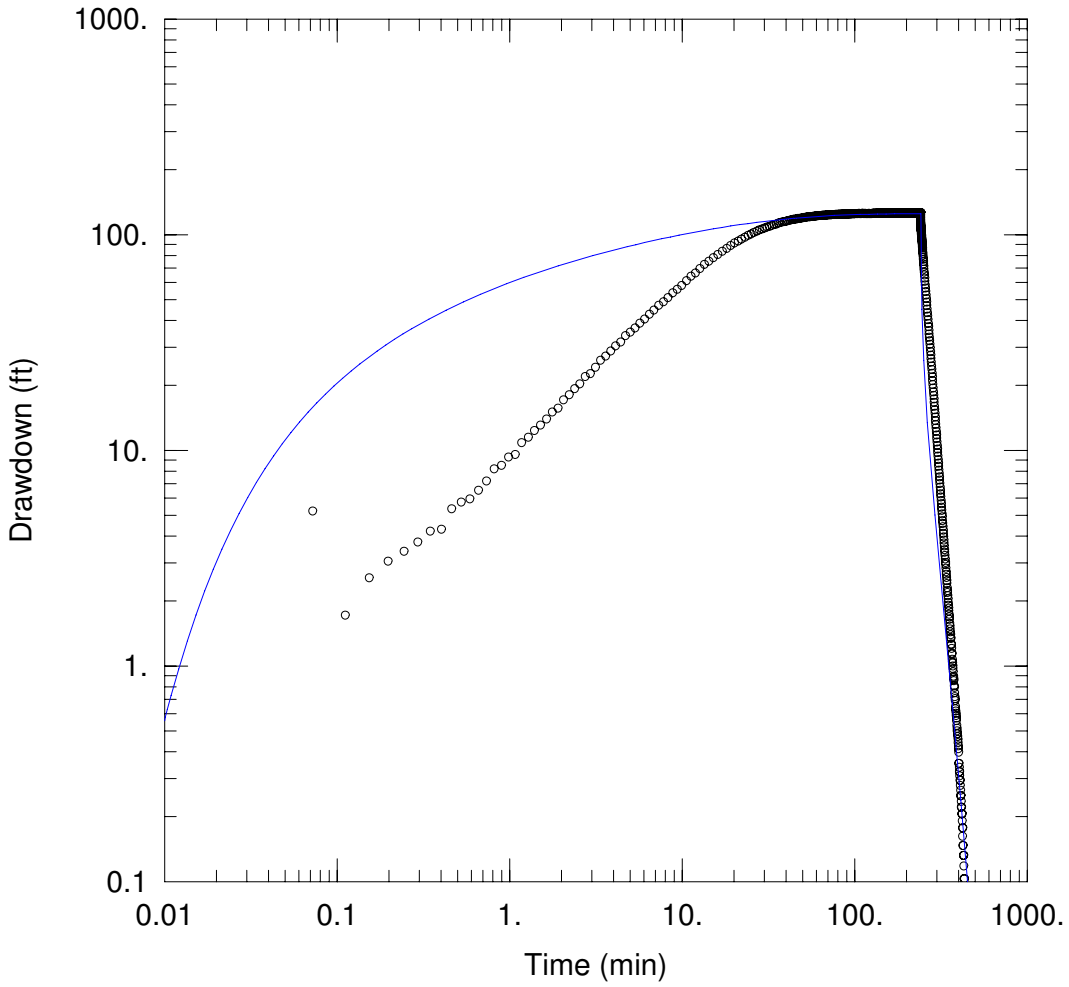
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/7/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 13.07 ft^2/day
S = 0.203
r/B = 0.1
Kz/Kr = 1.
b = 90. ft



PACKER TEST 3 (1,630 FT BLS TO 1,670 FT BLS)

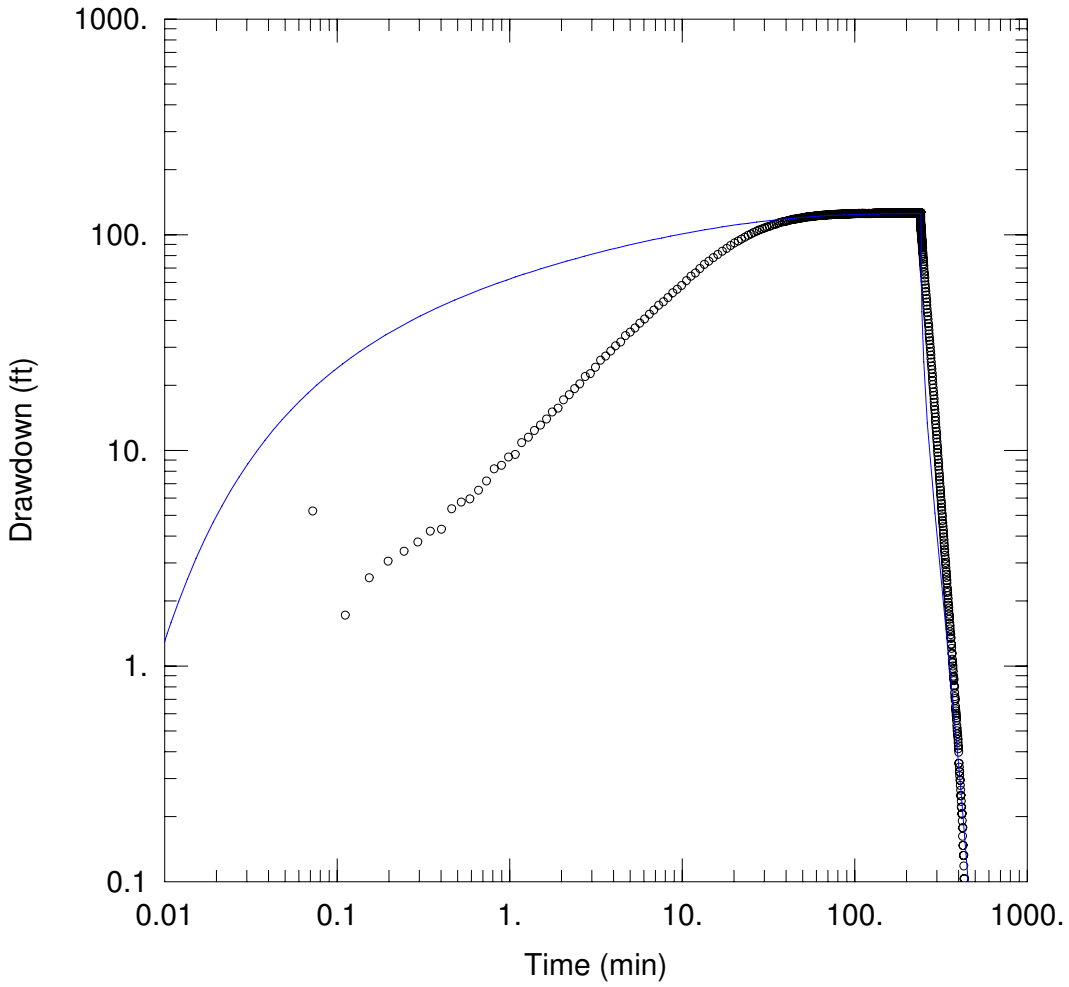
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 7.137 ft^2/day
S = 0.007523
r/B = 0.04103
Kz/Kr = 1.
b = 40. ft



PACKER TEST 3 (1,630 FT BLS TO 1,670 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/05

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.

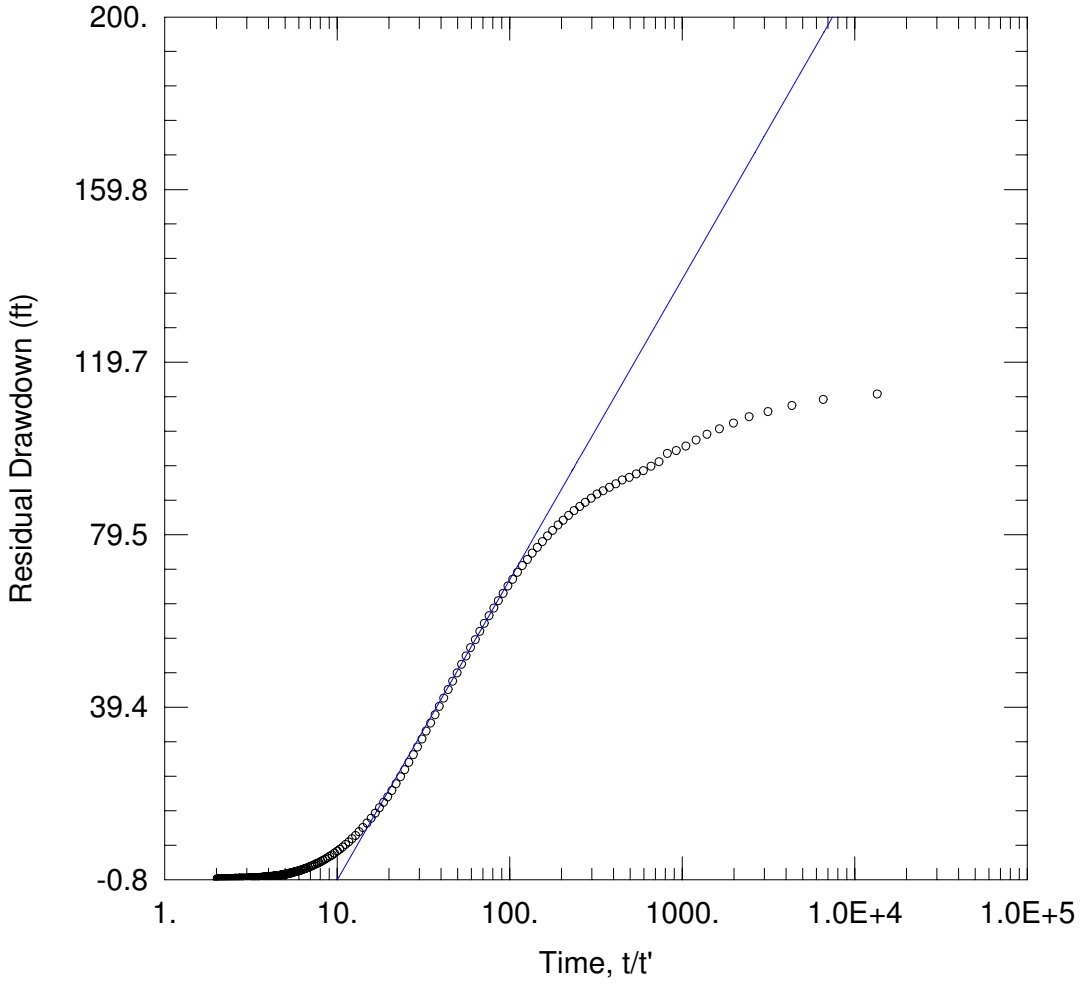
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 7.414 ft^2/day
r/B = 0.03576
T' = 1.44E+8 ft^2/day

S = 0.005713
ß = 0.004268
S' = 1.



PACKER TEST 3 (1,510 FT BLS TO 1,600 FT BLS)

PROJECT INFORMATION

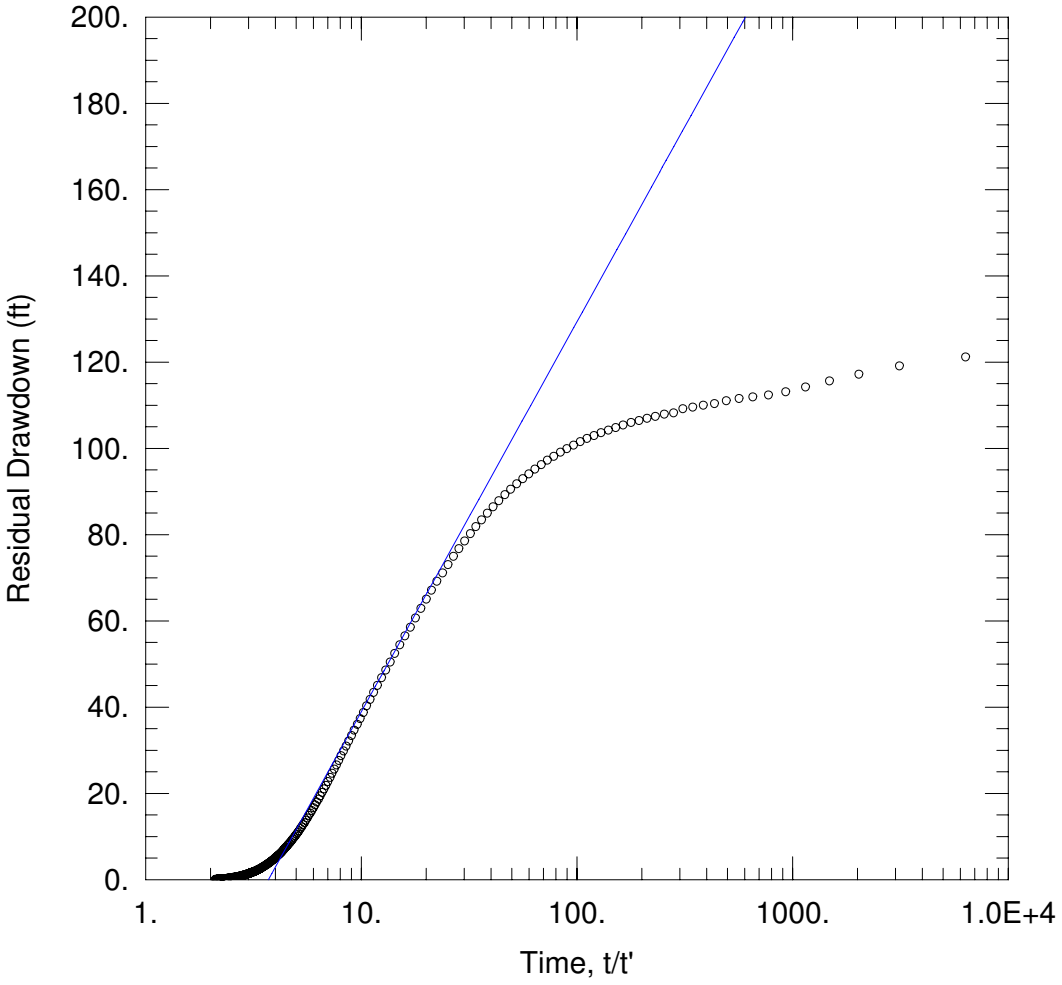
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: DZMW-1
Test Date: 7/7/05

AQUIFER DATA

Saturated Thickness: 90. ft
Anisotropy Ratio (Kz/Kr): 1.

SOLUTION

Aquifer Model: Confined
Solution Method: Theis (Recovery)
T = 15.63 ft^2/day
S/S' = 10.31



PACKER TEST 3 (1,630 FT BLS TO 1,670 FT BLS)

PROJECT INFORMATION

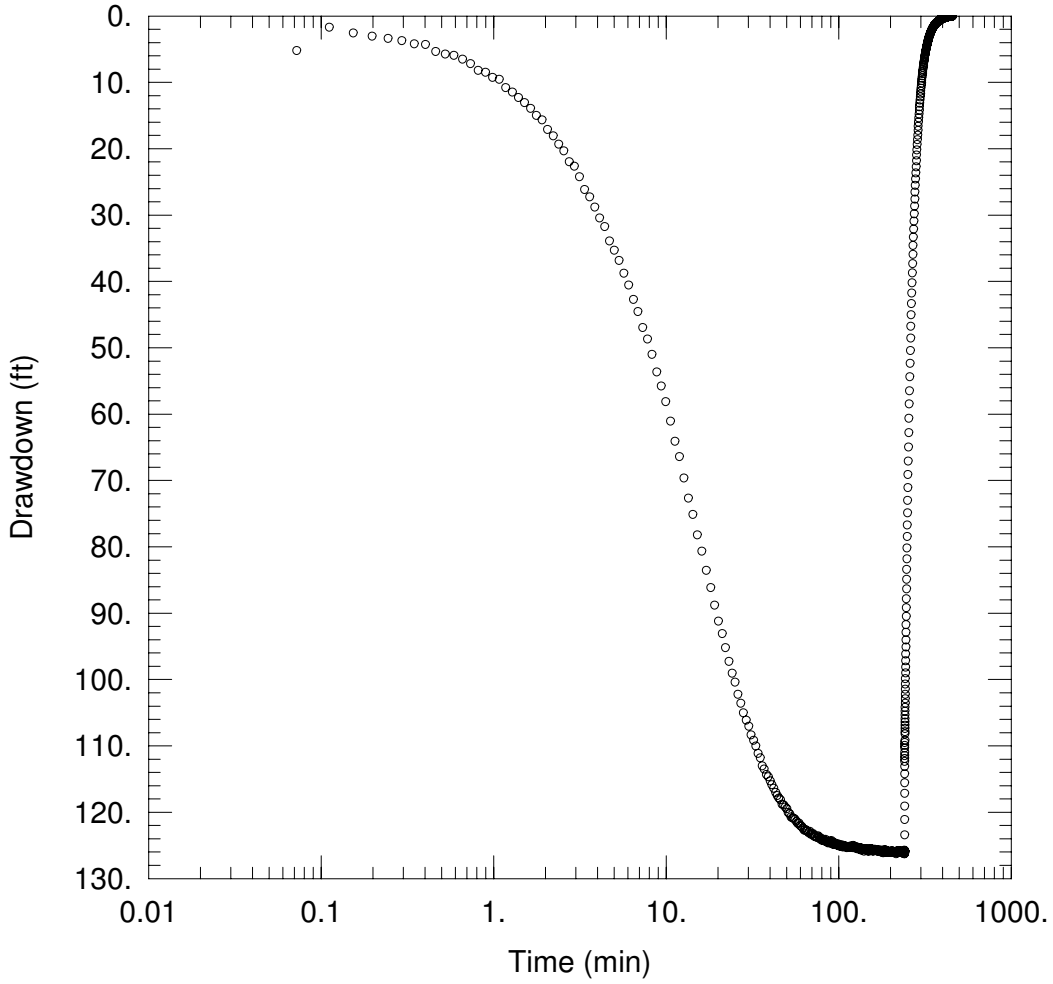
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/05

AQUIFER DATA

Saturated Thickness: 40. ft
Anisotropy Ratio (Kz/Kr): 1.

SOLUTION

Aquifer Model: Confined
Solution Method: Theis (Recovery)
T = 3.434 ft^2/day
S/S' = 3.711



PACKER TEST 3 (1,630 FT BLS TO 1,670 FT BLS)

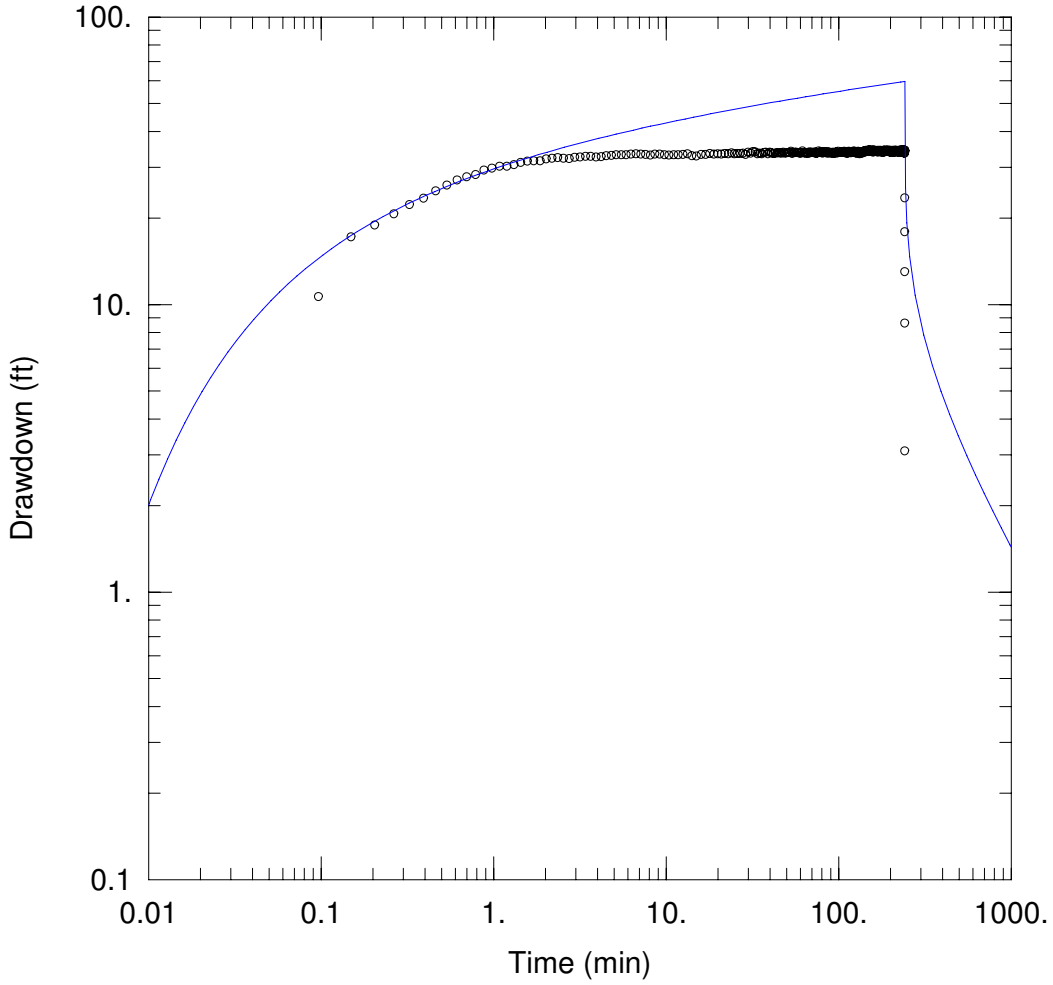
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 2/27/05

AQUIFER DATA

Saturated Thickness: 40. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 4 (2,271 FT BLS TO 2,299 FT BLS)

PROJECT INFORMATION

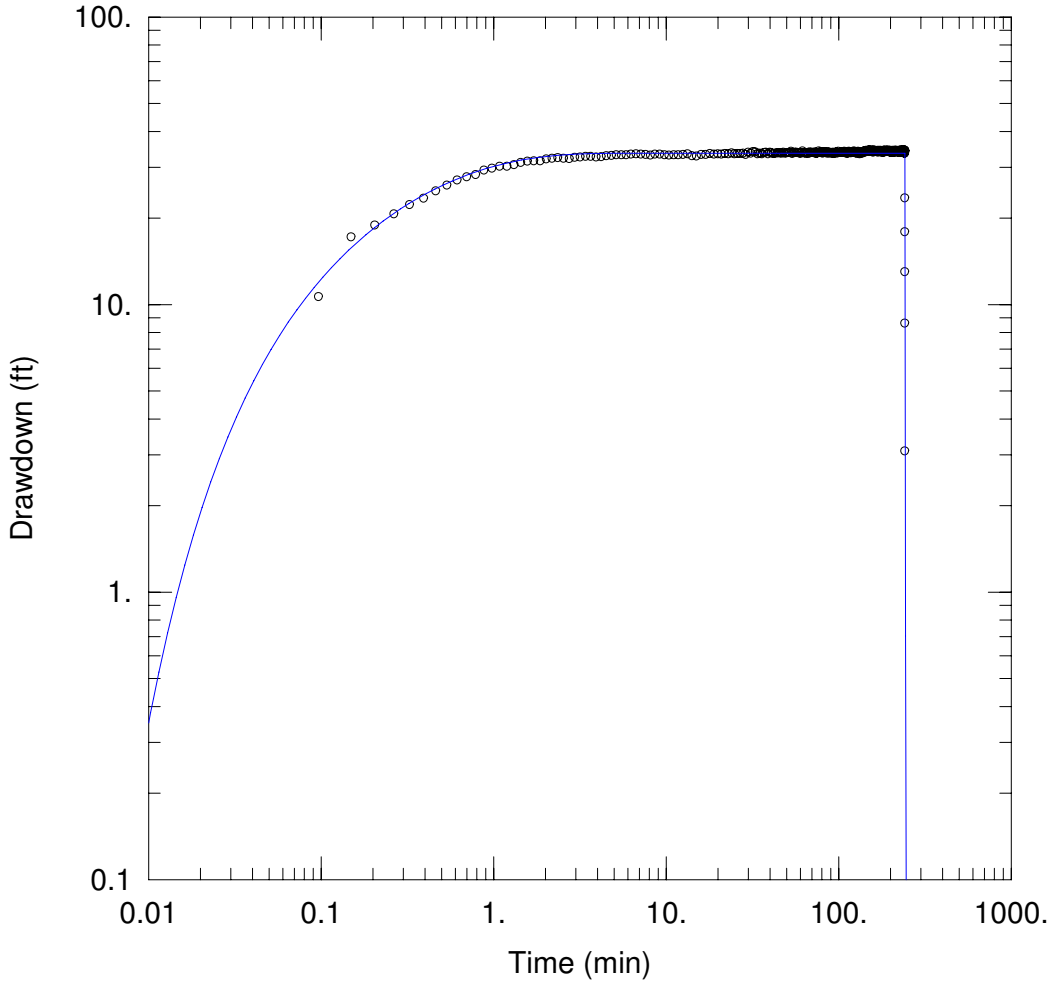
Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/3/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 135.6 ft^2/day
ß = 0.1
b = 28. ft

S = 0.0565
Kz/Kr = 1.



PACKER TEST 4 (2,271 FT BLS TO 2,299 FT BLS)

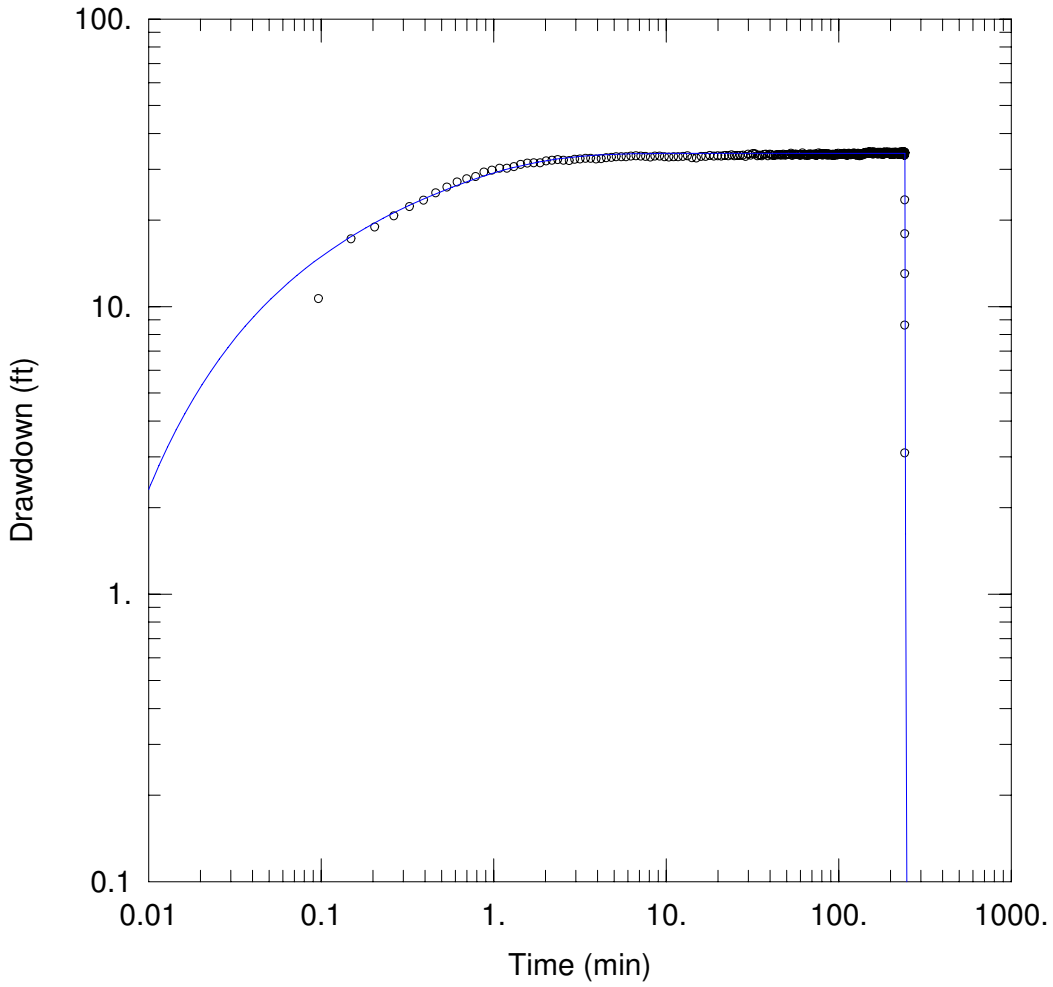
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/3/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 119.1 ft^2/day
S = 0.1247
r/B = 0.2798
Kz/Kr = 1.
b = 28. ft



PACKER TEST 4 (2,271 FT BLS TO 2,299 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/3/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

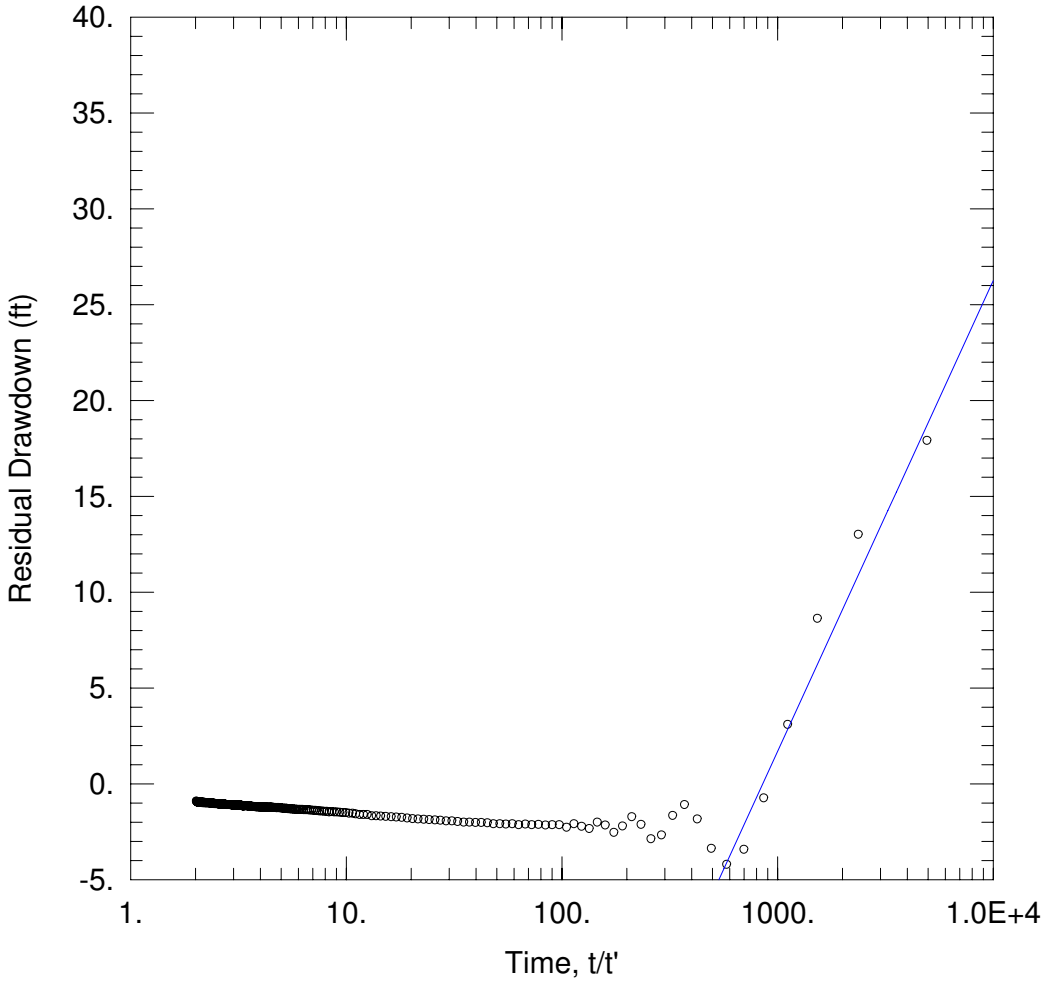
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 151.9 ft^2/day
r/B = 0.1794
T' = 1.44E+8 ft^2/day

S = 0.05599
ß = 0.07057
S' = 1.



PACKER TEST 4 (2,271 FT BLS TO 2,299 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/3/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

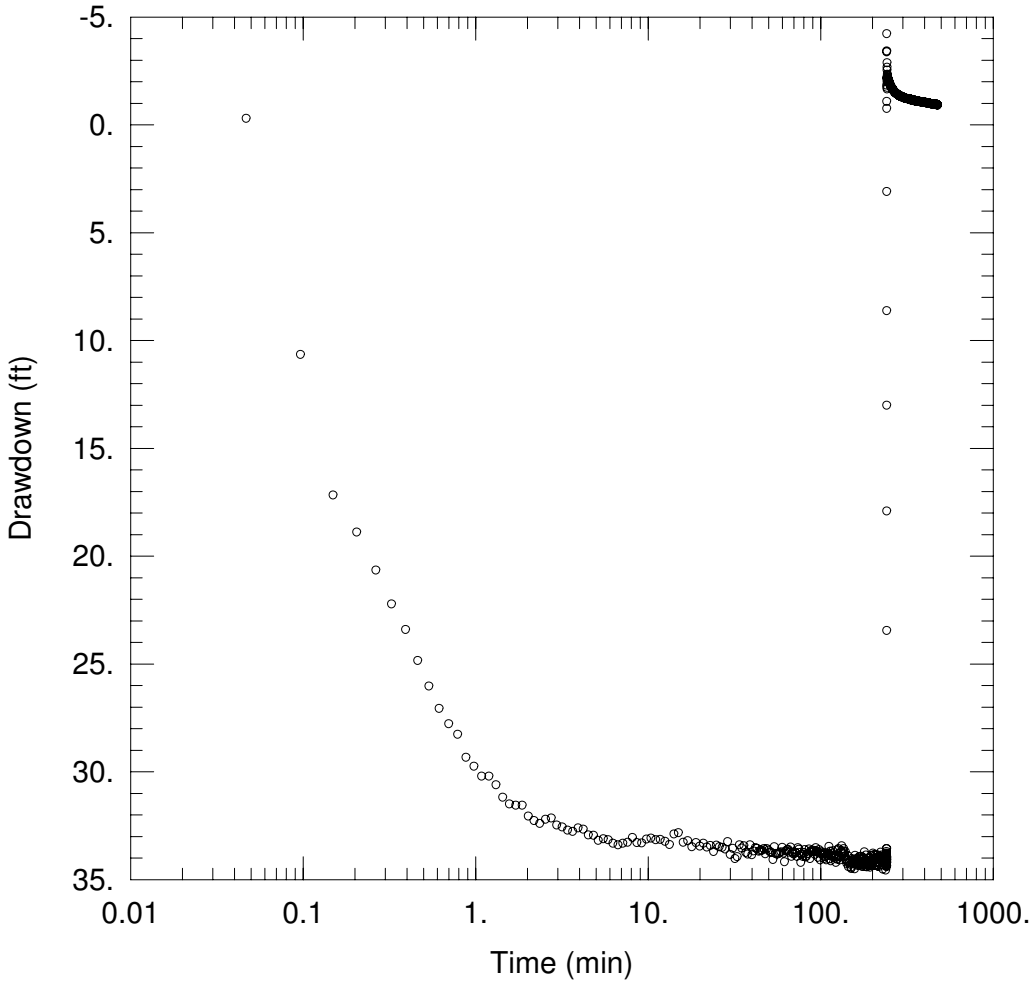
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 130.7 ft^2/day

S/S' = 853.9



PACKER TEST 4 (2,271 FT BLS TO 2,299 FT BLS)

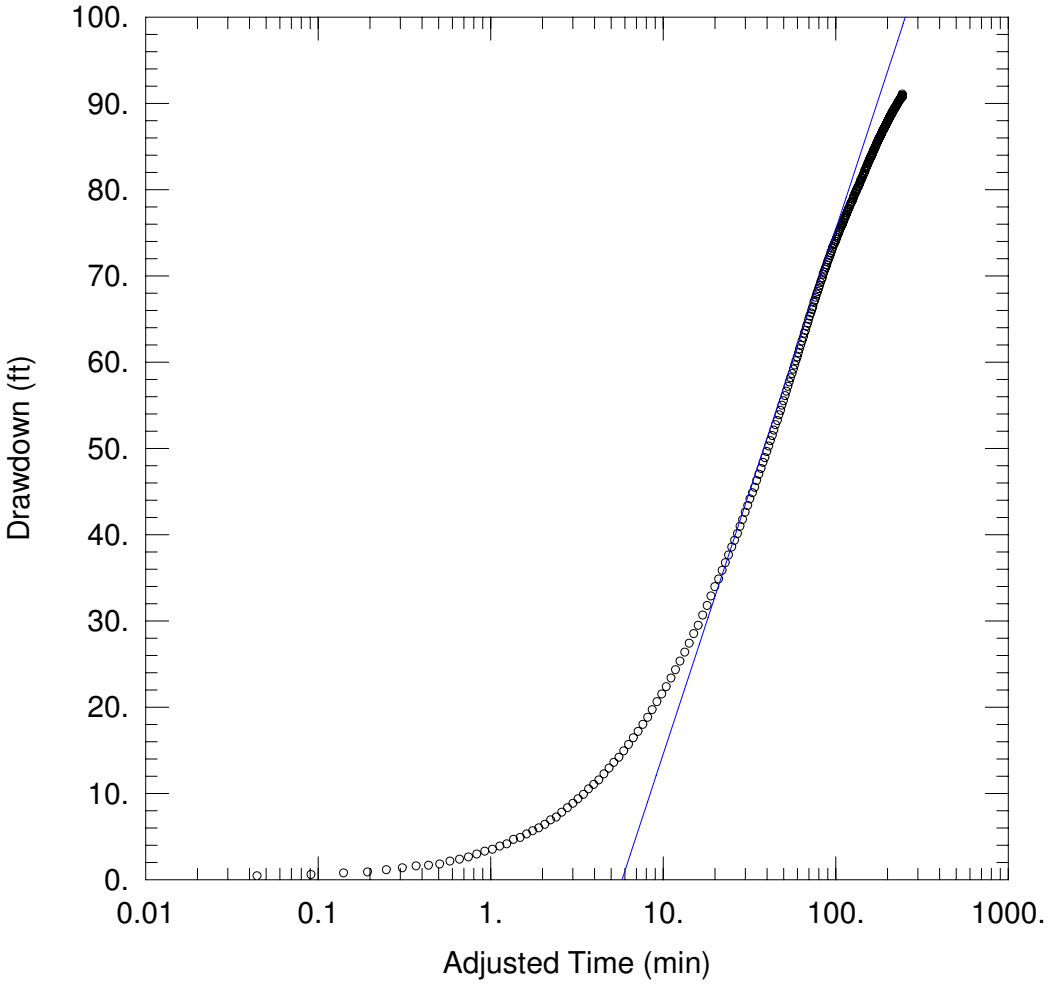
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/3/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 5 (2,072 FT BLS TO 2,100 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/4/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

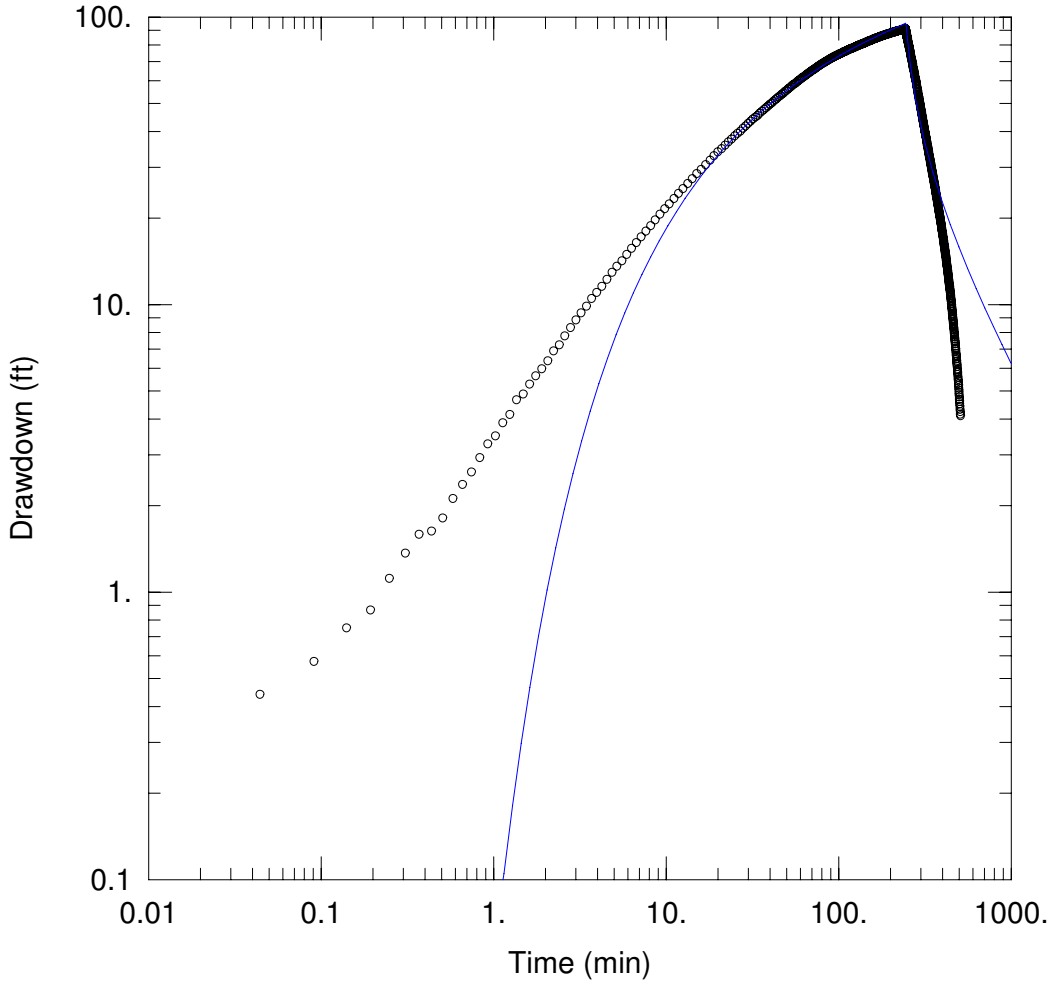
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 0.9851 ft^2/day

S = 0.1418



PACKER TEST 5 (2,072 FT BLS TO 2,100 FT BLS)

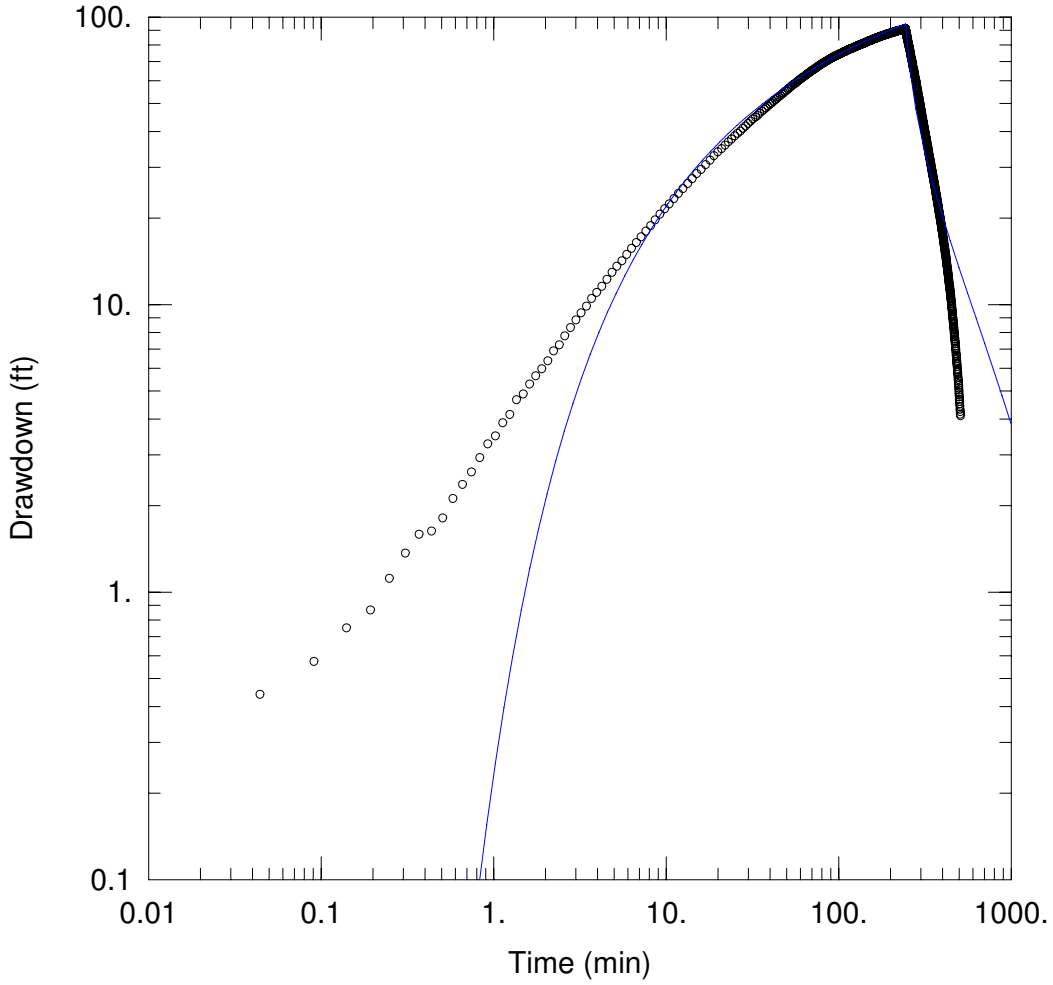
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/4/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 0.6702 ft^2/day
S = 0.14
ß = 0.1
Kz/Kr = 1.
b = 28. ft



PACKER TEST 5 (2,072 FT BLS TO 2,100 FT BLS)

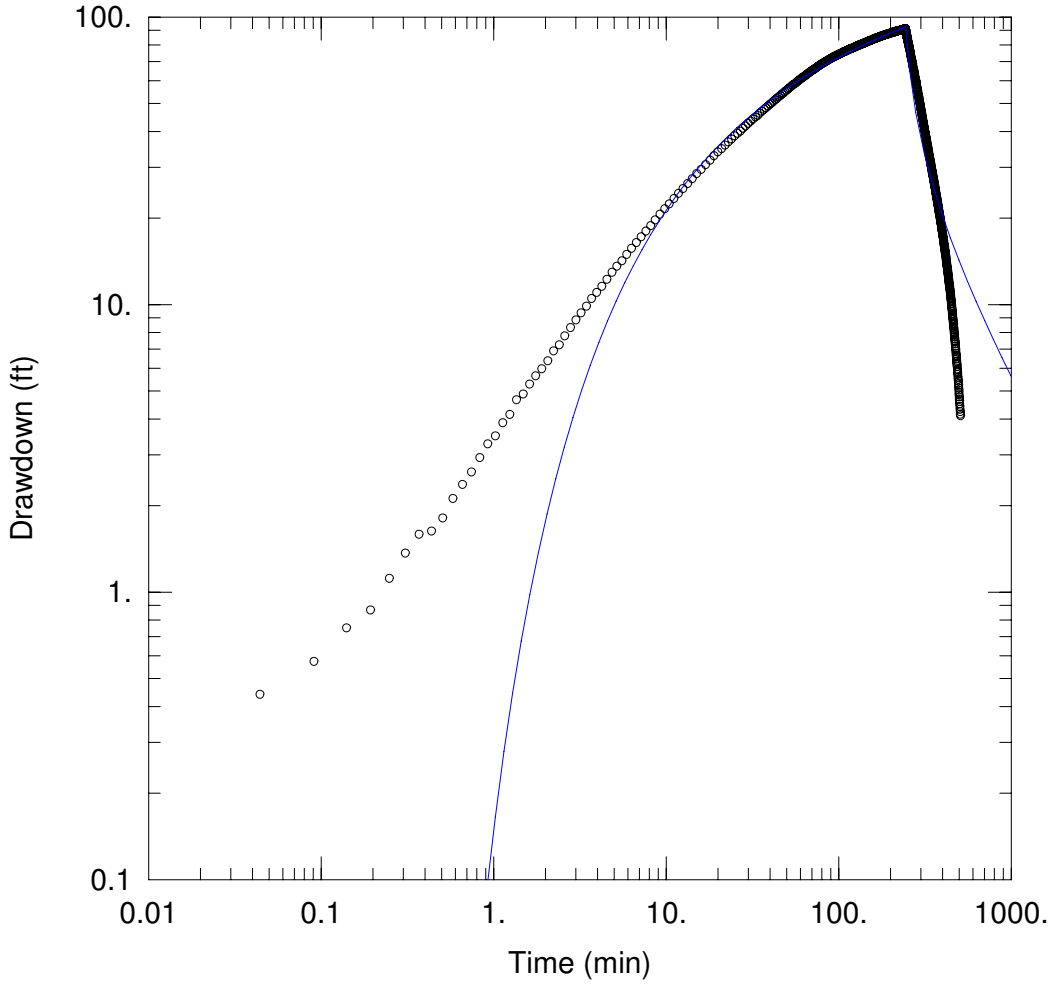
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/4/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 0.9825 ft^2/day
S = 0.1448
r/B = 0.1
Kz/Kr = 1.
b = 28. ft



PACKER TEST 5 (2,072 FT BLS TO 2,100 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/4/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

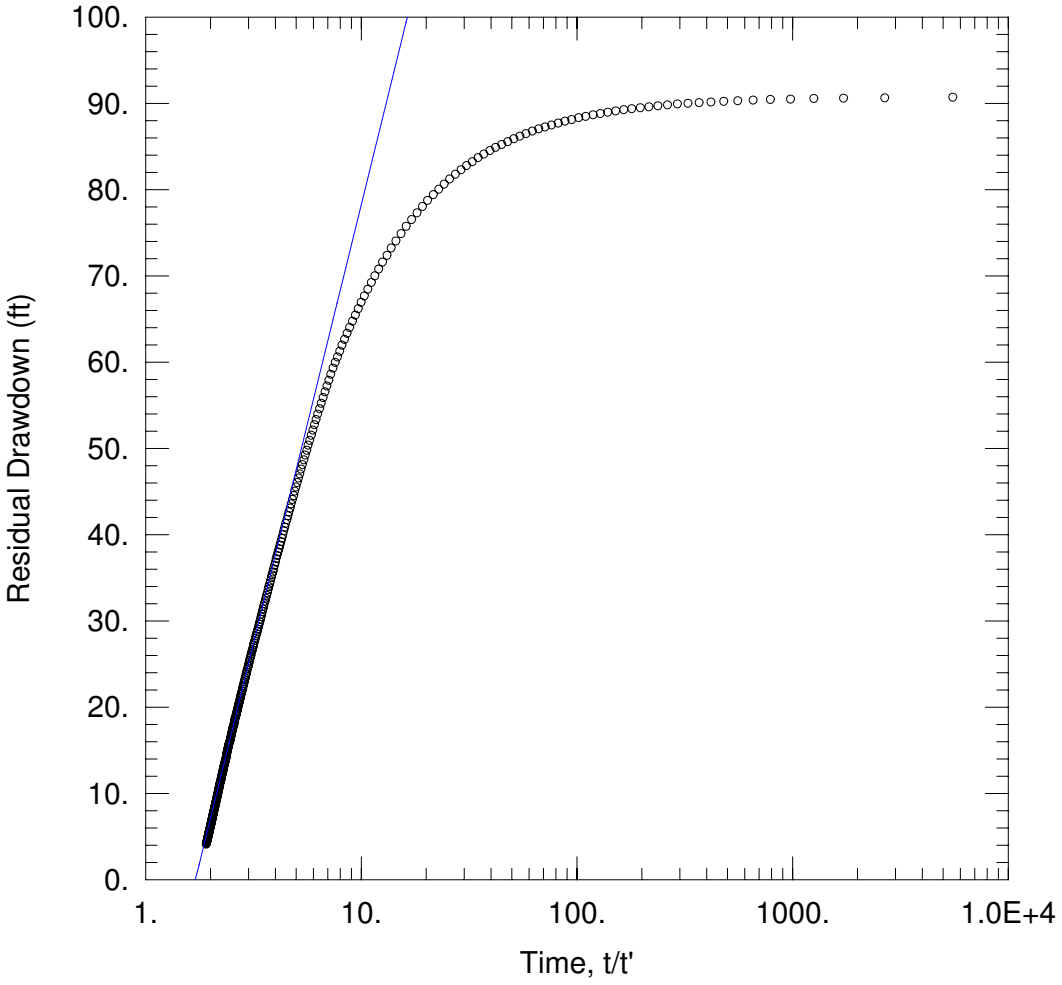
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 0.7333 ft^2/day
r/B = 0.05
T' = 36.15 ft^2/day

S = 0.1196
ß = 0.1
S' = 3.125E-7



PACKER TEST 5 (2,072 FT BLS TO 2,100 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/4/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

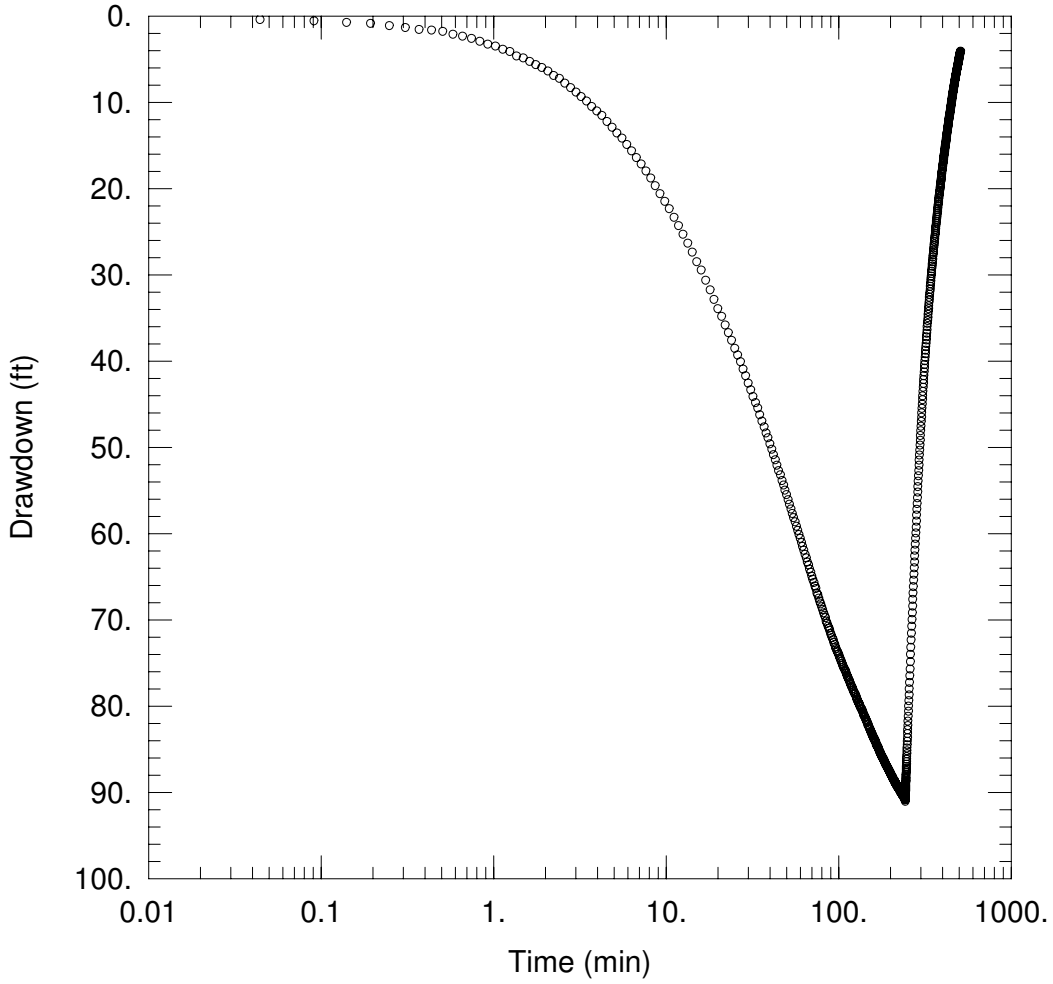
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 0.5894 ft^2/day

S/S' = 1.702



PACKER TEST 5 (2,072 FT BLS TO 2,100 FT BLS)

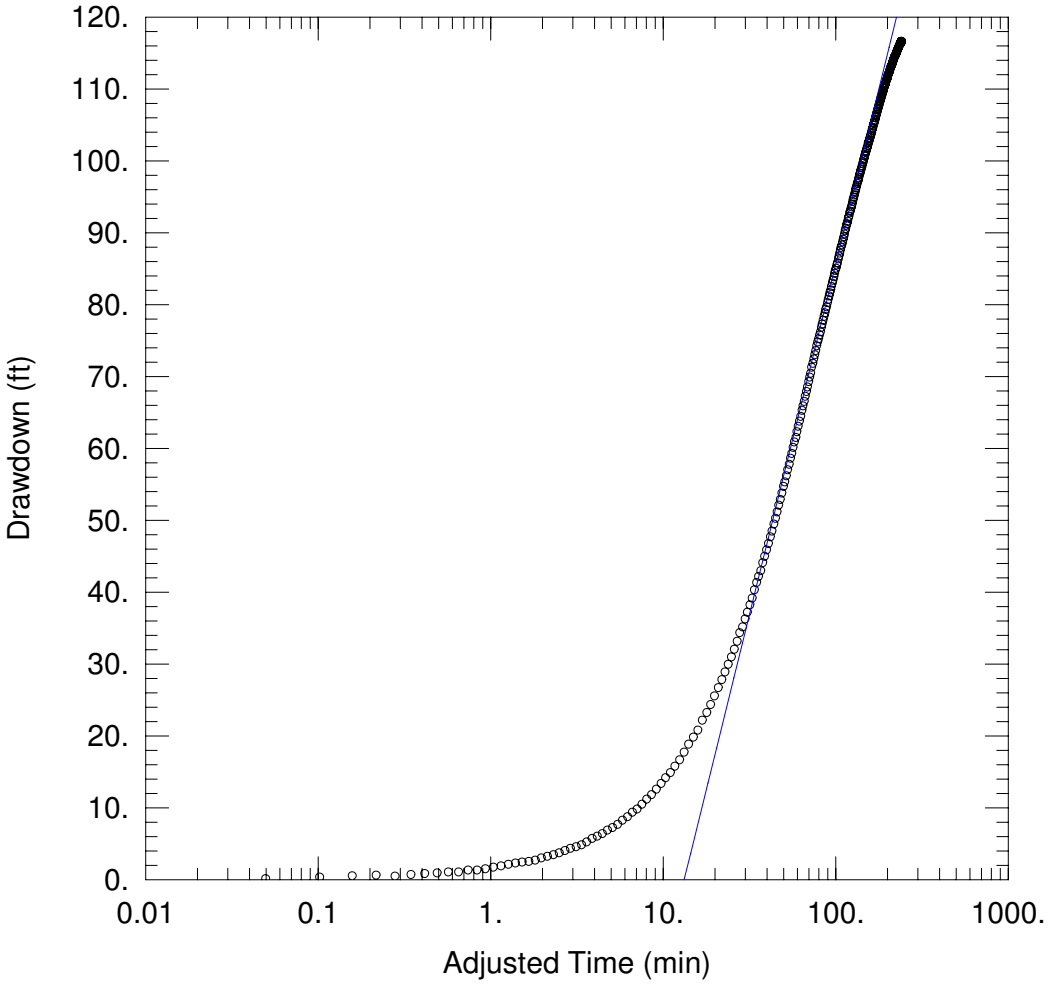
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/4/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 6 (1,920 FT BLS TO 1,948 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/5/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

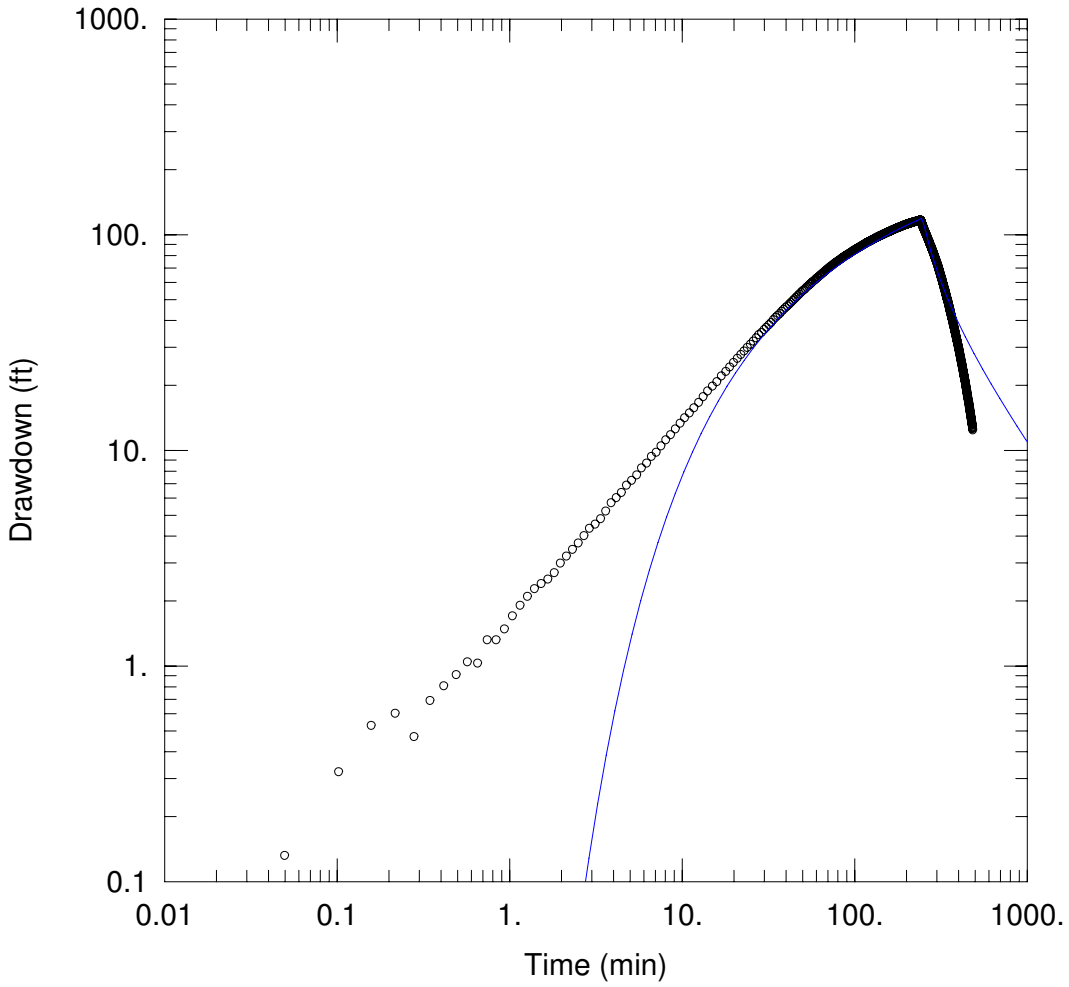
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 0.7237 ft^2/day

S = 0.239



PACKER TEST 6 (1,920 FT BLS TO 1,948 FT BLS)

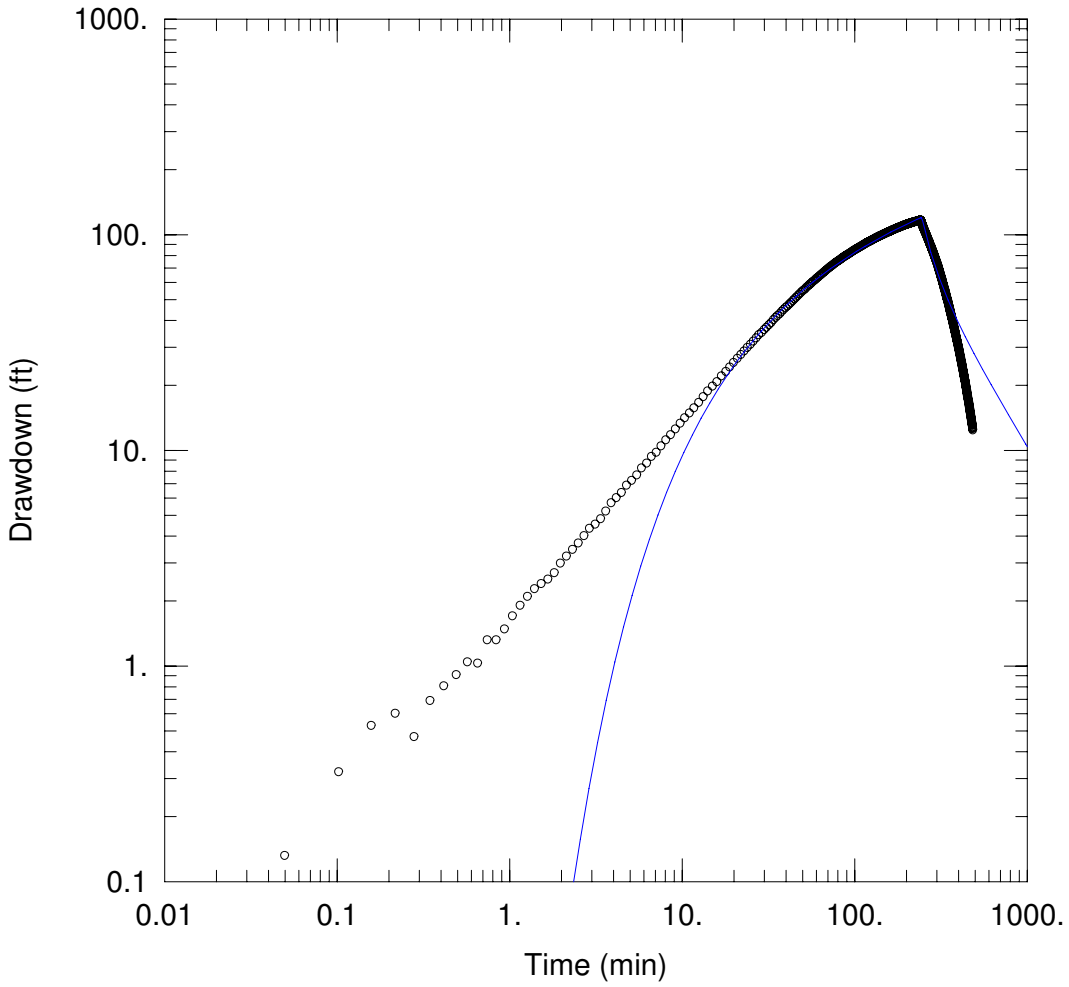
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/5/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush

T = 0.4693 ft^2/day
S = 0.2619
ß = 0.1
Kz/Kr = 1.
b = 28. ft



PACKER TEST 6 (1,920 FT BLS TO 1,948 FT BLS)

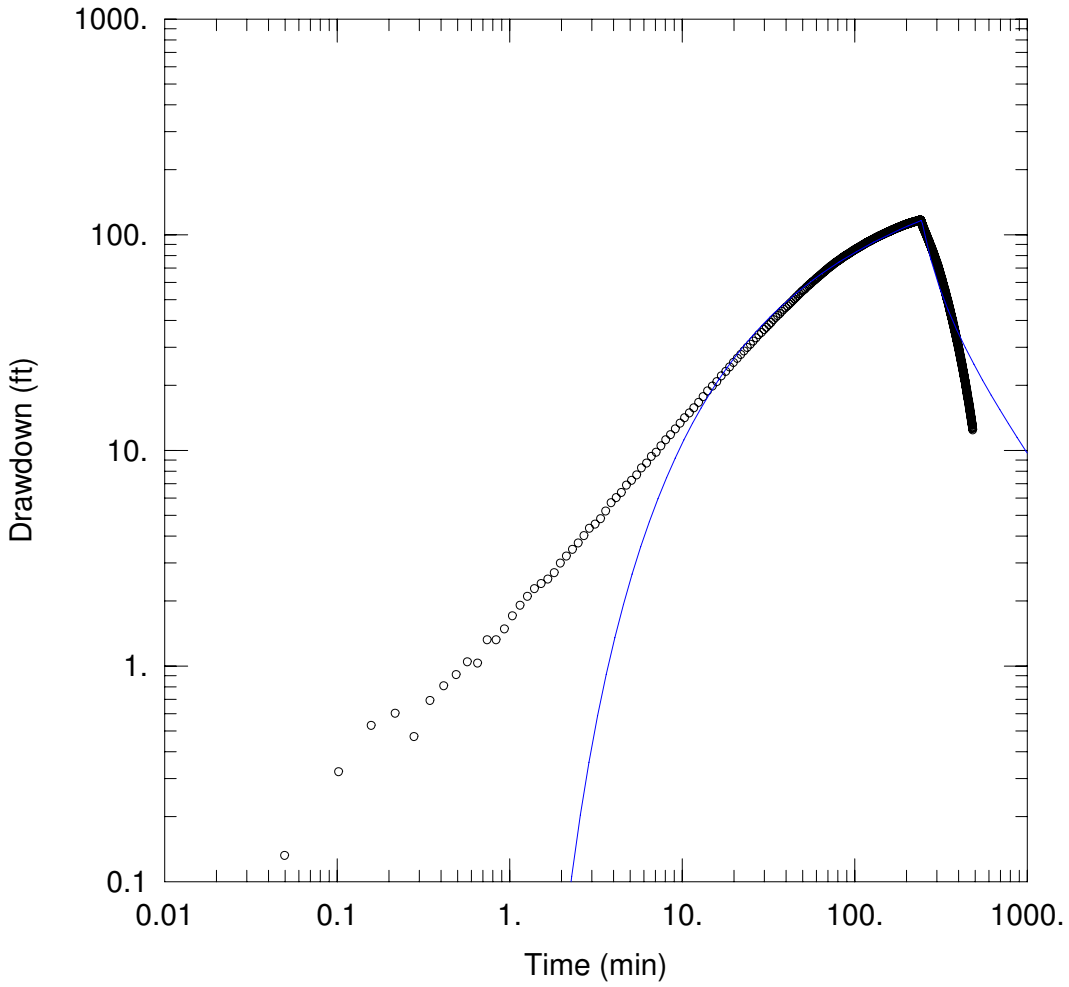
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/5/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 0.6528 ft^2/day
S = 0.3055
r/B = 0.1
Kz/Kr = 1.
b = 28. ft



PACKER TEST 6 (1,920 FT BLS TO 1,948 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/5/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

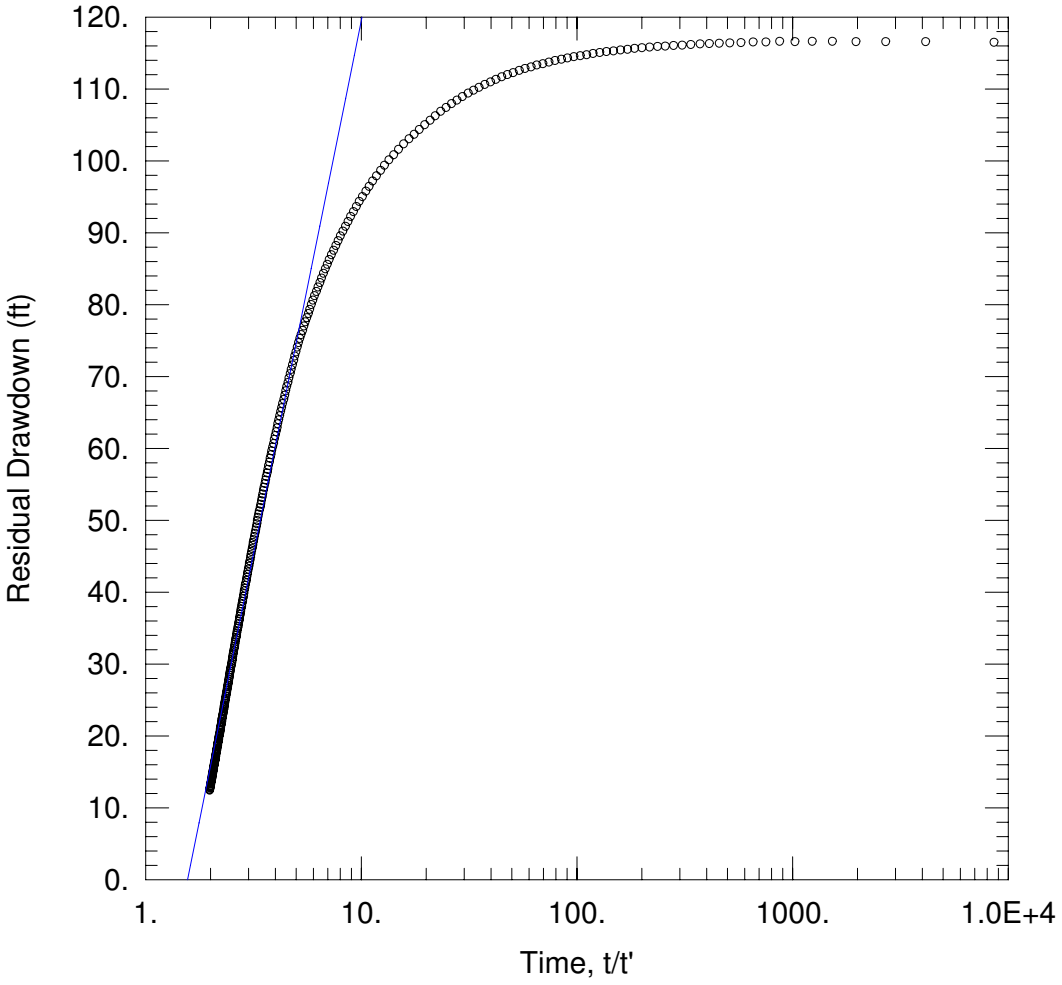
SOLUTION

Aquifer Model: Leaky

Solution Method: Neuman-Witherspoon

T = 0.5213 ft^2/day
r/B = 0.04597
T' = 549.6 ft^2/day

S = 0.2263
ß = 0.1
S' = 2.334E-6



PACKER TEST 6 (1,920 FT BLS TO 1,948 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/5/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.

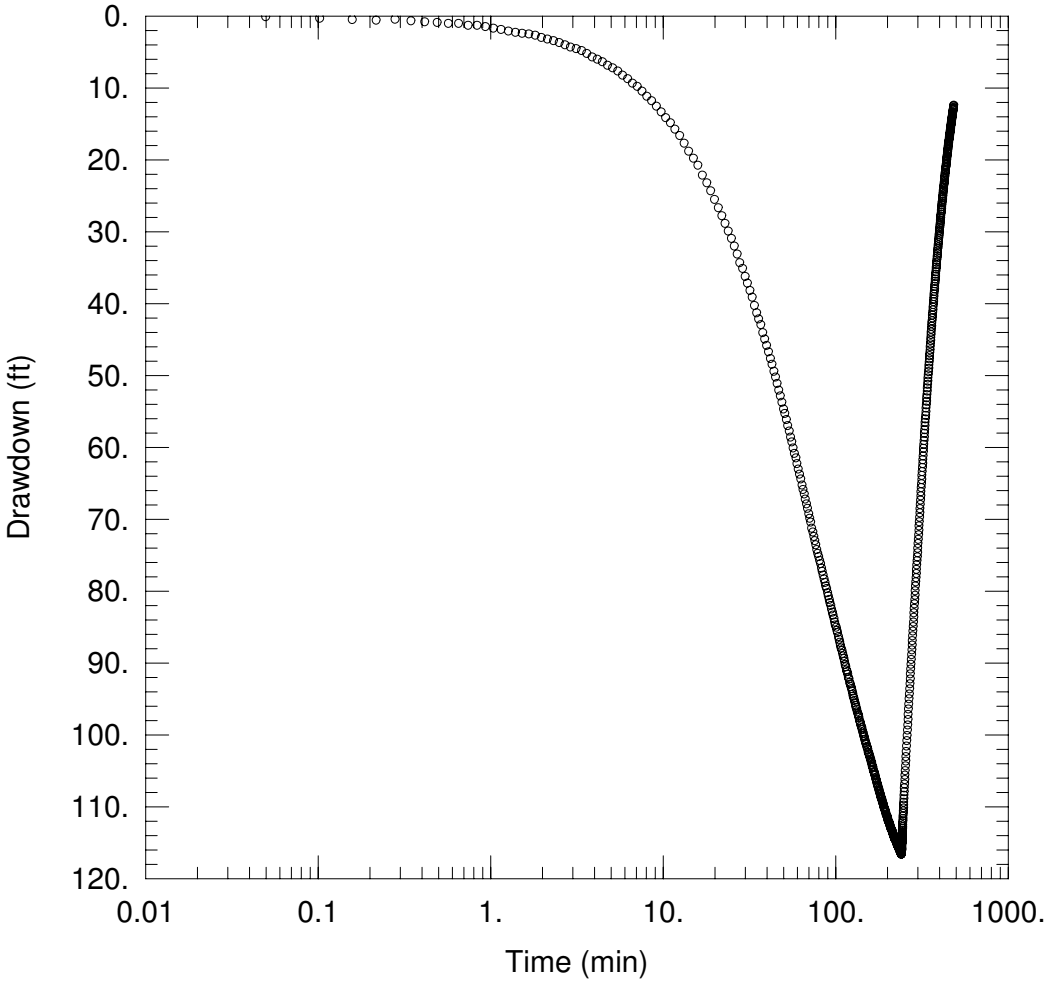
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 0.476 ft^2/day

S/S' = 1.564



PACKER TEST 6 (1,920 FT BLS TO 1,948 FT BLS)

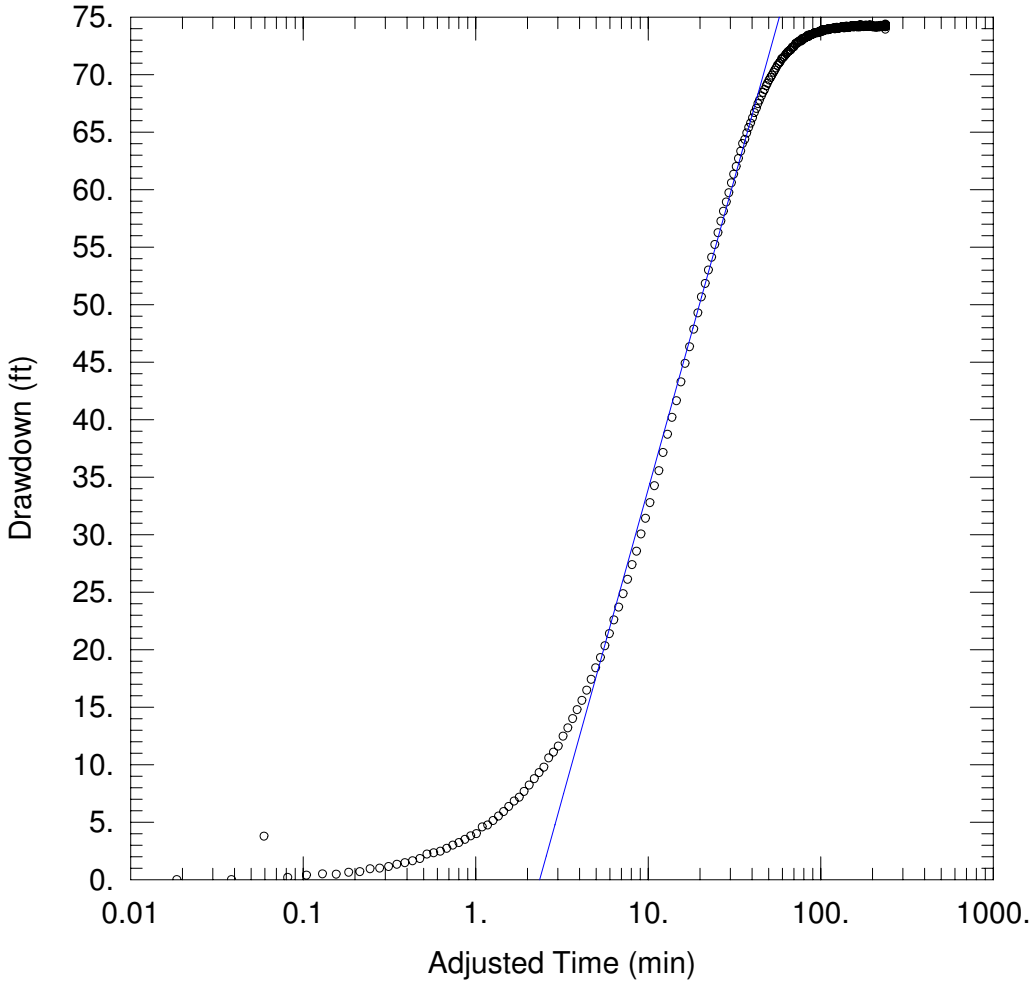
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/5/05

AQUIFER DATA

Saturated Thickness: 28. ft

Anisotropy Ratio (Kz/Kr): 1.



PACKER TEST 7 (1,819 FT BLS TO 1,837 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/6/05 to 4/7/05

AQUIFER DATA

Saturated Thickness: 18. ft

Anisotropy Ratio (Kz/Kr): 1.

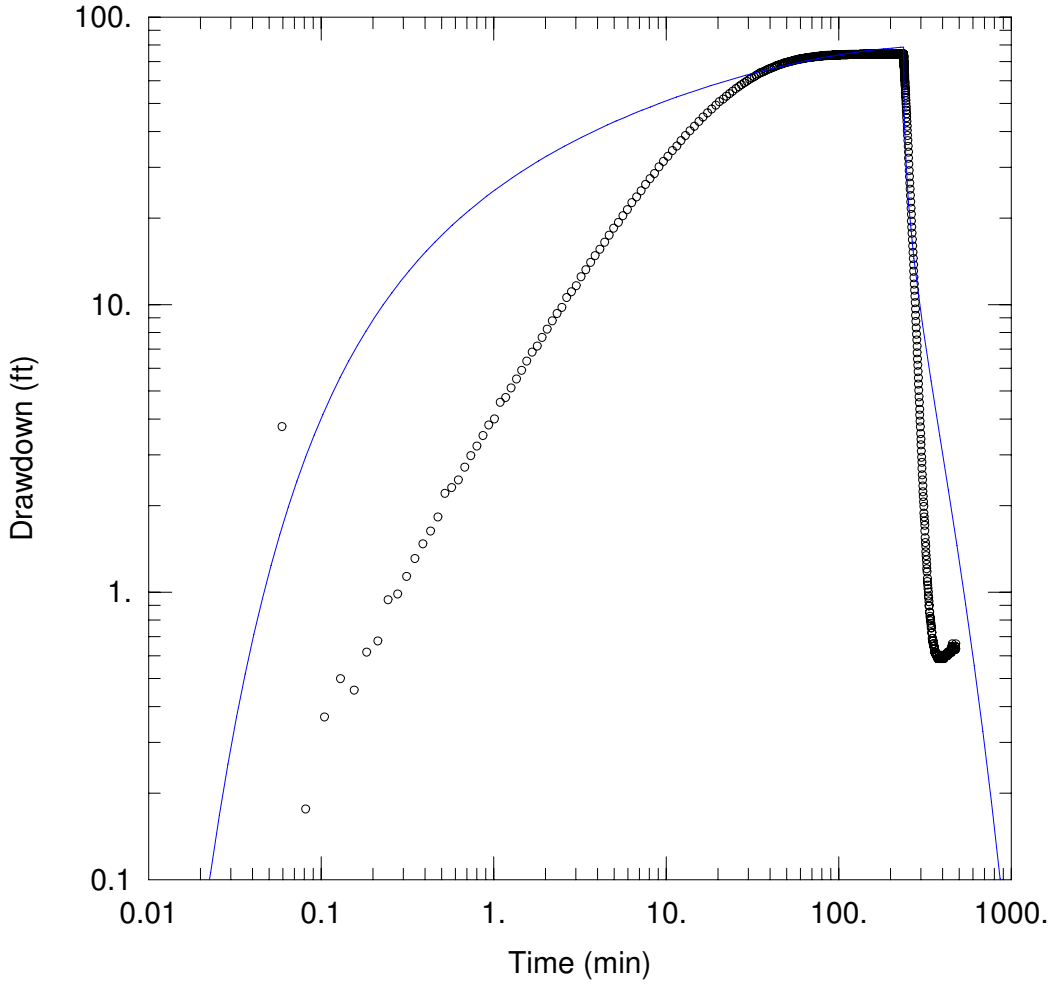
SOLUTION

Aquifer Model: Confined

Solution Method: Cooper-Jacob

T = 3.593 ft^2/day

S = 0.2107



PACKER TEST 7 (1,819 FT BLS TO 1,837 FT BLS)

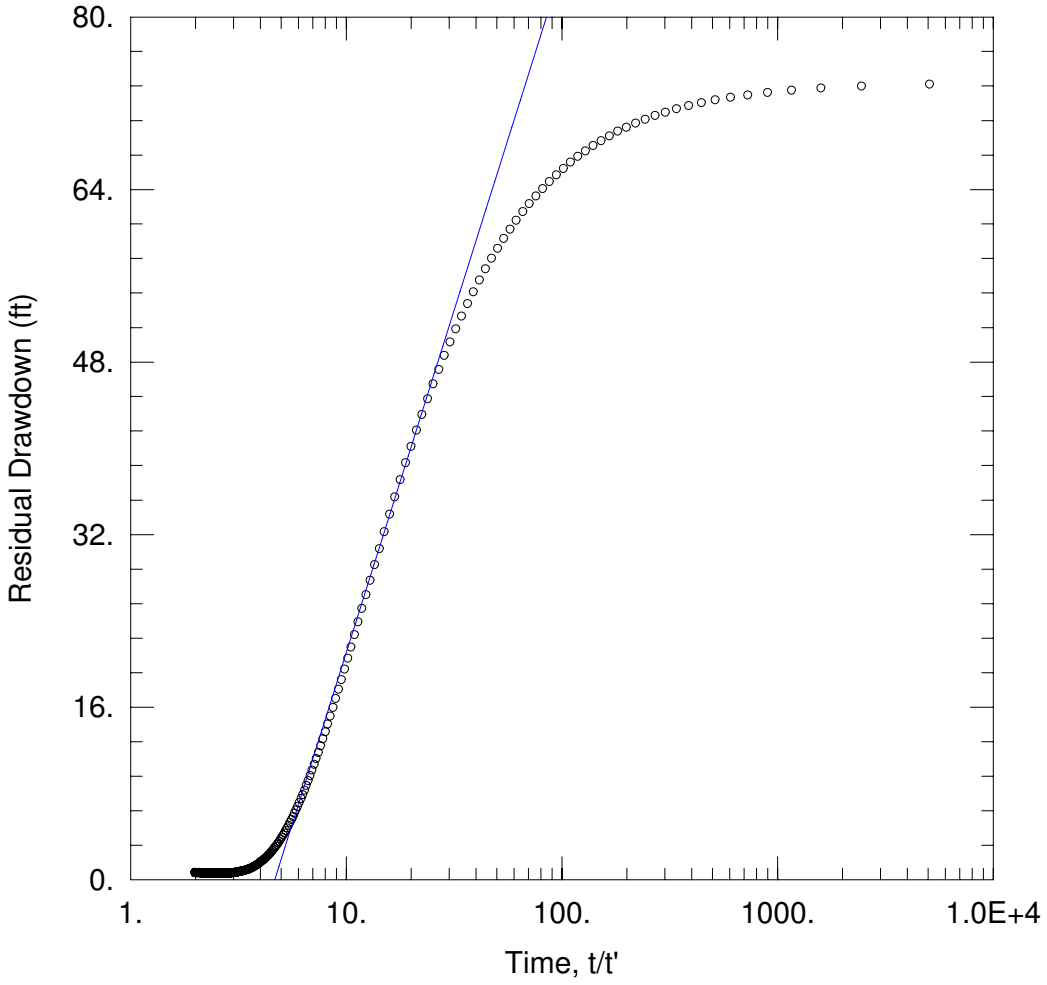
PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/6/05 to 4/7/05

SOLUTION

Aquifer Model: Leaky
Solution Method: Hantush-Jacob

T = 7.037 ft^2/day
S = 0.02367
r/B = 0.03895
Kz/Kr = 1.
b = 18. ft



PACKER TEST 7 (1,819 FT BLS TO 1,837 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/6/05 to 4/7/05

AQUIFER DATA

Saturated Thickness: 18. ft

Anisotropy Ratio (Kz/Kr): 1.

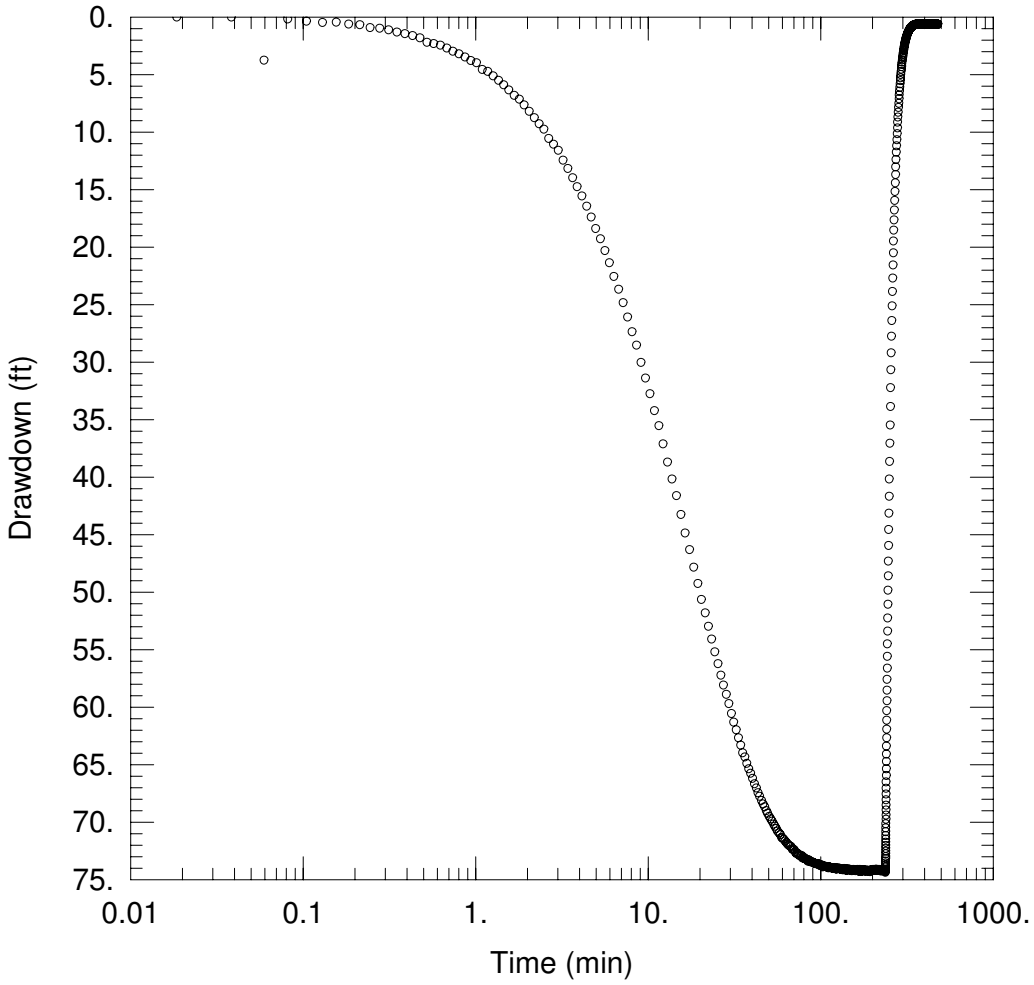
SOLUTION

Aquifer Model: Confined

Solution Method: Theis (Recovery)

T = 3.057 ft^2/day

S/S' = 4.658



PACKER TEST 7 (1,819 FT BLS TO 1,837 FT BLS)

PROJECT INFORMATION

Company: MWH
Client: Lee County Utilities
Project: 3220139
Location: Three Oaks WWTP
Test Well: IW-1
Test Date: 4/6/05 to 4/7/05

AQUIFER DATA

Saturated Thickness: 18. ft

Anisotropy Ratio (Kz/Kr): 1.

Appendix K

Packer Test Water Quality

Client Project: Three Oaks
Lab Project: F0507025
Report Date: 07/05/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507025-01	Three Oaks DZMW/Packer #1 grab	Ground Water	7/1/05 12:50	7/1/05 12:20

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	2250		100	mg/L	7/1/05 14:30	MV	E85457
Conductivity	120.1	7770		0.5	umhos/cm	7/1/05 15:00	MV	E85457
pH	150.1	7.61	Q	0.01	std units	7/1/05 16:25	TW	E85457
Sulfate	375.4	559		67	mg/L	7/1/05 16:15	MV	E85457
Total Dissolved Solids	160.1	4680		100	mg/L	7/1/05 17:00	TW	E85457

Approved by:

Comments:

_____

Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: F0507044
Report Date: 07/08/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507044-01	DZMW/Packer #2/1460-1510' grab	Ground Water	7/7/05 9:20	7/6/05 4:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	16300		1000	mg/L	7/7/05 13:30	MV	E85457
Conductivity	120.1	41300		0.5	umhos/cm	7/7/05 11:30	MV	E85457
pH	150.1	8.02	Q	0.01	std units	7/7/05 16:30	TW	E85457
Sulfate	375.4	1650		200	mg/L	7/8/05 12:00	MV	E85457
Total Dissolved Solids	160.1	26100		500	mg/L	7/7/05 17:00	TW	E85457

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507044-02	Three Oaks DZMW/PT2/1460-1510' grab	Ground Water	7/7/05 9:20	7/6/05 15:40

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	16800		1000	mg/L	7/7/05 13:30	MV	E85457
Conductivity	120.1	42500		0.5	umhos/cm	7/7/05 11:30	MV	E85457
pH	150.1	7.39	Q	0.01	std units	7/7/05 16:30	TW	E85457
Sulfate	375.4	1680		200	mg/L	7/8/05 12:00	MV	E85457
Total Dissolved Solids	160.1	26300		500	mg/L	7/7/05 17:00	TW	E85457

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507044-03	Three Oaks DZMW/PT3/1510-1610' grab	Ground Water	7/7/05 9:20	7/7/05 9:10

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	19000		1000	mg/L	7/7/05 13:30	MV	E85457

Client Project: Three Oaks
Lab Project: F0507044
Report Date: 07/08/05

Laboratory Results

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507044-03	Three Oaks DZMW/PT3/1510-1610' grab	Ground Water	7/7/05 9:20	7/7/05 9:10

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Conductivity	120.1	48300		0.5	umhos/cm	7/7/05 11:30	MV	E85457
pH	150.1	7.98	Q	0.01	std units	7/7/05 16:30	TW	E85457
Sulfate	375.4	2108		200	mg/L	7/8/05 12:00	MV	E85457
Total Dissolved Solids	160.1	31000		500	mg/L	7/7/05 17:00	TW	E85457

Approved by:

Comments:

Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: F0507064
Report Date: 07/11/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507064-01	Three Oaks DZMW/1510-1610' grab	Ground Water	7/8/05 9:15	7/7/05 19:35

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	19300		1000	mg/L	7/8/05 14:30	MV	E85457
Conductivity	120.1	46400		0.5	umhos/cm	7/8/05 12:30	BG	E85457
pH	150.1	7.28	Q	0.01	std units	7/8/05 13:25	TW	E85457
Sulfate	375.4	2410		400	mg/L	7/8/05 12:00	MV	E85457
Total Dissolved Solids	160.1	31100		500	mg/L	7/8/05 14:30	TW	E85457

Approved by:

Comments:

_____

Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: F0507154
Report Date: 07/18/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0507154-01	Three Oaks PT #4/1320-1380' grab	Ground Water	7/15/05 9:22	7/15/05 7:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	2250		100	mg/L	7/15/05 16:00	MV	E85457
Conductivity	120.1	7400		0.5	umhos/cm	7/15/05 14:30	MV	E85457
pH	150.1	8.09	Q	0.01	std units	7/15/05 16:30	TW	E85457
Sulfate	375.4	389		50	mg/L	7/15/05 12:30	MV	E85457
Total Dissolved Solids	160.1	4240		100	mg/L	7/15/05 14:45	TW	E85457

Approved by:

Comments:

_____

Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: N0502545
Report Date: 03/02/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
N0502545-01	IW-1 Packer (1440-1480) grab	Ground Water	2/25/05 14:20	2/24/05 0:05

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	7000		2000	mg/L	2/28/05 12:00	EW	E84380
Conductivity	120.1	21800		0.5	umhos/cm	2/28/05 9:30	EW	E84380
pH	150.1	6.78	Q	0.01	std units	2/25/05 16:30	RG	E84380
Sulfate	375.4	671		100	mg/L	2/28/05 15:00	EW	E84380
Total Dissolved Solids	160.1	13500		10	mg/L	3/1/05 10:30	EW	E84380

Approved by:

Comments:

_____

Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: N0502563
Report Date: 03/03/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
N0502563-01	1150-1190' dvlp grab	Ground Water	2/28/05 14:55	2/25/05 16:00

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	2100		200	mg/L	3/3/05 10:00	EW	E84380
Conductivity	120.1	6810		0.5	umhos/cm	2/28/05 15:00	EW	E84380
pH	150.1	8.13	Q	0.01	std units	2/28/05 15:00	EW	E84380
Sulfate	375.4	555		100	mg/L	2/28/05 15:00	EW	E84380
Total Dissolved Solids	160.1	4610		10	mg/L	3/1/05 10:30	EW	E84380

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
N0502563-02	1150-1190' test grab	Ground Water	2/28/05 14:55	2/26/05 2:40

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	2300		200	mg/L	3/3/05 10:00	EW	E84380
Conductivity	120.1	7630		0.5	umhos/cm	2/28/05 15:00	EW	E84380
pH	150.1	7.63	Q	0.01	std units	2/28/05 15:00	EW	E84380
Sulfate	375.4	567		100	mg/L	2/28/05 15:00	EW	E84380
Total Dissolved Solids	160.1	4820		10	mg/L	3/1/05 10:30	EW	E84380

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
N0502563-03	1630-1670' test grab	Ground Water	2/28/05 14:55	2/27/05 4:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	19400		800	mg/L	3/5/05 12:00	EW	E84380

Client Project: Three Oaks
Lab Project: N0502563
Report Date: 03/03/05

Laboratory Results

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
N0502563-03	1630-1670' test grab	Ground Water	2/28/05 14:55	2/27/05 4:45

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Conductivity	120.1	46300		0.5	umhos/cm	2/28/05 15:00	EW	E84380
pH	150.1	7.12	Q	0.01	std units	2/28/05 15:00	EW	E84380
Sulfate	375.4	3000		100	mg/L	2/28/05 15:00	EW	E84380
Total Dissolved Solids	160.1	36000		10	mg/L	3/1/05 10:30	EW	E84380

Approved by:

Comments:

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Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: F0504046
Report Date: 04/07/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0504046-01	Three Oaks IW/2271-2299' grab	Ground Water	4/4/05 10:23	4/3/05 16:11

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	24200		1000	mg/L	4/6/05 11:50	BG	E85457
Conductivity	120.1	52800		0.5	umhos/cm	4/5/05 10:45	EW	E84380
pH	150.1	7.61	Q	0.01	std units	4/4/05 12:00	BG	E85457
Sulfate	375.4	2870		200	mg/L	4/6/05 10:30	BG	E85457
Total Dissolved Solids	160.1	36700		500	mg/L	4/5/05 14:30	BG	E85457

Approved by:

Comments:

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Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: F0504050
Report Date: 04/07/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0504050-01	Three Oaks IW PT5/2072'-2100' grab	Ground Water	4/5/05 9:20	4/4/05 19:03

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	22000		1000	mg/L	4/6/05 11:50	BG	E85457
Conductivity	120.1	51000		0.5	umhos/cm	4/6/05 15:15	BG	E85457
pH	150.1	6.69	Q	0.01	std units	4/5/05 9:40	BG	E85457
Sulfate	375.4	2850		200	mg/L	4/6/05 10:30	BG	E85457
Total Dissolved Solids	160.1	44500		500	mg/L	4/5/05 14:30	BG	E85457

Approved by:

Comments:

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Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.

Client Project: Three Oaks
Lab Project: F0504077
Report Date: 04/08/05

Laboratory Results

Youngquist Brothers, Inc.
15465 Pine Ridge Road
Ft. Myers, FL 33908

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0504077-01	Three Oaks IW PT6/1920-1948' grab	Ground Water	4/7/05 9:30	4/5/05 20:10

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	20500		1000	mg/L	4/8/05 9:50	BG	E85457
Conductivity	120.1	52200		0.5	umhos/cm	4/8/05 13:00	BG	E85457
pH	150.1	6.69	Q	0.01	std units	4/7/05 10:00	BG	E85457
Sulfate	375.4	3100		200	mg/L	4/8/05 11:10	BG	E85457
Total Dissolved Solids	160.1	36300		500	mg/L	4/7/05 11:15	BG	E85457

Lab ID	Sample Description	Sample Source	Received Date/Time	Sample Date/Time
F0504077-02	Three Oaks IW PT7/1819-1837' grab	Ground Water	4/7/05 9:30	4/7/05 2:30

Analysis	Method	Results	Qual	Detection Limit	Units	AnalysisDate/Time	Analyst	Cert ID
Chloride	4500Cl-B	20800		1000	mg/L	4/8/05 9:50	BG	E85457
Conductivity	120.1	50500		0.5	umhos/cm	4/8/05 13:00	BG	E85457
pH	150.1	6.77	Q	0.01	std units	4/7/05 10:00	BG	E85457
Sulfate	375.4	2670		200	mg/L	4/8/05 11:10	BG	E85457
Total Dissolved Solids	160.1	34700		500	mg/L	4/7/05 11:15	BG	E85457

Client Project: Three Oaks
Lab Project: F0504077
Report Date: 04/08/05

Laboratory Results

Approved by:

Comments:

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Andrew Konopacki/Lab Supervisor
Kathrine Bartkiewicz/Lab Supervisor

Test Results meet all the requirements of the NELAC standards.