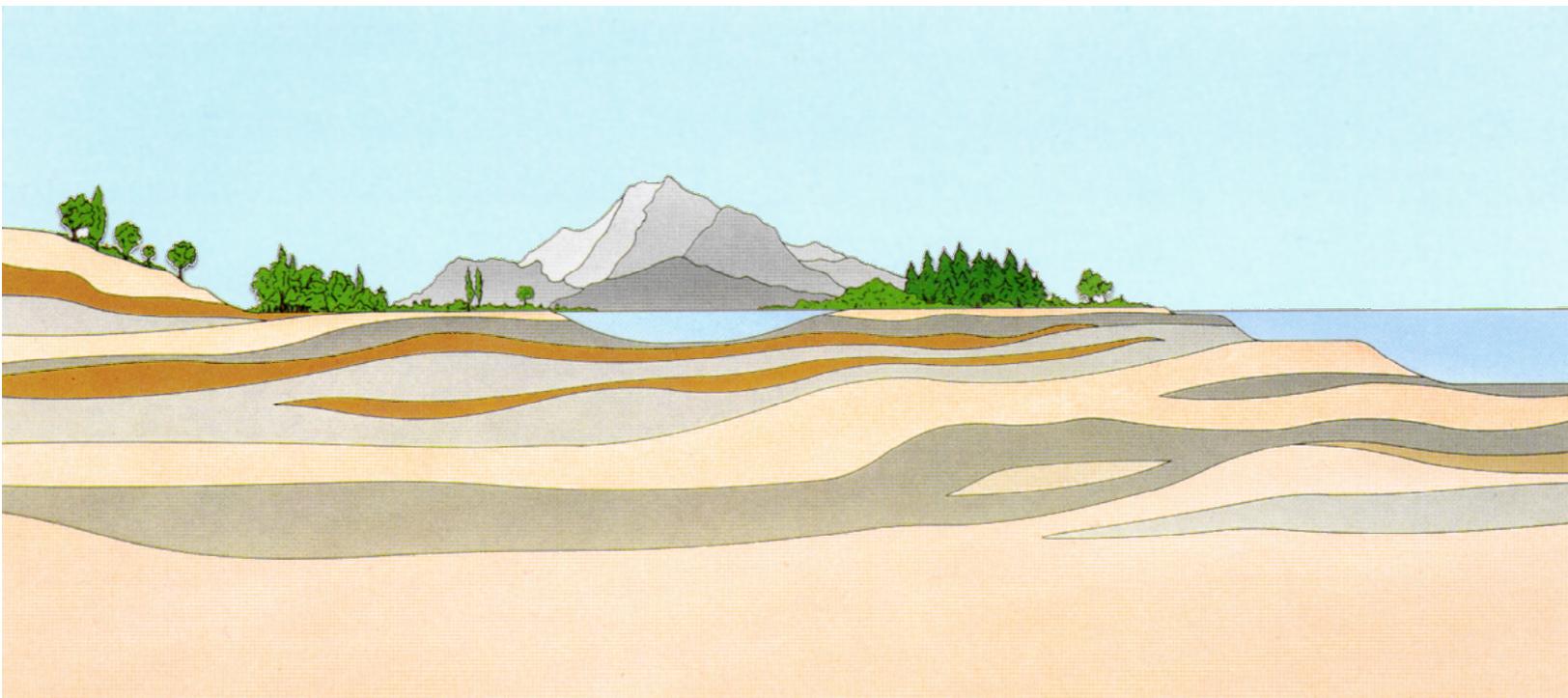


**WELL CAPACITY AND AQUIFER TEST,
McCROSKY WS-12 WATER WELL,
EAST CAT CANYON DEVELOPMENT,
SANTA BARBARA, CALIFORNIA**

Prepared for:
AERA ENERGY, LLC

October 2012
Fugro Job No. 04.62120157





4820 McGrath Street, Suite 100
Ventura, California 93003-7778
Tel: (805) 650-7000
Fax: (805) 650-7010

October 19, 2012
Project No. 04.62120157

Aera Energy, LLC
10000 Ming Avenue, 3B51
Bakersfield, California 93311

Attention: Mr. Eric Paulsen, P.E., Sr. Staff Facilities Engineer

Subject: Well Capacity and Aquifer Test, McCrosky WS-12 Water Well, East Cat Canyon Development, Santa Barbara, California

Dear Mr. Paulsen:

In accordance with the general scope of work outlined in our proposal to Mr. Dean Taormina with Sturgeon Services International (Sturgeon), dated August 16, 2012 (Attachment A), Fugro has completed a well capacity, aquifer test, and related assessment of the so-called McCrosky WS-12 water well located along Long Canyon Road on the western boundary of the Aera Fee of the East Cat Canyon Development in Santa Barbara County. The location of the subject water well is shown on an air photo of the "Aera Fee," which is included with this letter report as Attachment B. Pursuant to certain recommendations contained in our report to Aera LLC on groundwater supply sources in the East Cat Canyon Field (March 28, 2012¹), the purpose of the well capacity testing was to determine the current condition of the McCrosky WS-12 water well (depth, water level, well depth, location, and condition of perforations, etc.) and based on the condition assessment, perform pump testing of the well to assess yield, water quality, and the groundwater production potential of the Paso Robles formation aquifer in the "Aera Fee" area of the East Cat Canyon field. We understand that groundwater is one source of water supply being considered by Aera LLC for the generation of steam to develop the oil and gas resources of the East Cat Canyon Oilfield.

With this report we include documentation of health and safety measures that were followed during the field work (Attachment C), the results of a downhole video-log of the water well (Attachment D), various photographs that document the field work (Attachment E), daily field memoranda, which document preparation for and conduct of the well testing procedures (Attachment F), various graphs of the aquifer test results (Attachment G), and the results of a water quality analysis performed on the produced groundwater (Attachment H). As you are aware, the McCrosky WS-12 well was reportedly drilled in the late 1970s for use as a groundwater supply source. Certain hand-written tabulations of use from that period (1977) indicate that it was pumped at 4,000 barrels per day (about 110 gpm pumped continuously over a 24-hour period) and that the well was originally 700 feet in depth and produced groundwater

¹ Fugro (2012), Groundwater Source Supply Study East Cat Canyon Field, Santa Barbara County, Prepared for Aera Energy, LLC, Fugro Job No. 04.62120024, dated March 28.



from the "Paso Robles gravels." A water quality analysis of groundwater produced dating from 1975 indicates the groundwater was of good quality (i.e., fresh water) with a calcium sulfate mineral character and total dissolved solid concentration of about 1,000 milligrams per litre (mg/l). Design of the well is unknown (other than reported depth). Records indicate it apparently was provided with a 40 hp submersible pump capable of producing 130 gpm from an unknown pump setting and total lift.

The McCroskey WS-12 well is currently being used by two ranchers in the area (Mr. Joe Jorge and Mr. Marvin Teixeira) under an agreement with Aera. We are informed and as documented in this study, the well is used intermittently to fill a 10,000 gallon water tank for cattle watering. Mr. Jorge informed us that the well had at sometime in the last 10 years been provided with a small submersible pump and is pumped at a rate of about 10 gpm. Mr. Jorge had no information relative to past use and pumpage of the well, water level data, water quality data, or well service records. Based on geologic information we provided in our report dated March 28, 2012 to Aera LLC, we concluded that as much as 300 feet of potentially saturated Paso Robles Formation is present in the northerly half of the Aera Fee area and, pending further study of the McCroskey WS 12 well (described below), it is possible that properly designed and constructed wells in the northerly boundary of the "Aera Fee" could produce significant amounts of groundwater.

Subject to the completion of various health, safety, and environment (HSE) meetings and documentation which were coordinated by staff of Sturgeon and discussions with the operators of the well (Mr. Joe Jorge and Marvin Teixeira), Fugro initiated field work on October 1, 2012 by having Fisher Pump of Santa Maria remove the existing submersible pump from the well and perform a downhole video-log of the well. As documented in the daily reports of field observations by Fugro (Attachment E), the existing pump in the well was used to initially fill a portable 1,000 gallon tank (existing pump flow rate of 17 gallons per minute (gpm)) and the existing pump which was installed to a depth of 461 feet was removed. The 1,000 gallons of stored water was then released back into the well at a rate of about 2 gpm to help settle solids and clear the water for the video-log. The video-log was performed on October 2, 2012 and indicated the static water level in the well was at a depth of 247 feet below top of casing and that the well was of a depth of 491 feet. As indicated in the video-log (Attachment D), water clarity was fairly good and indicated the well was heavily incrustated with a carbonate precipitate, with randomly visible vertical slot (likely mills knife or gun perforated installed) present at depths below a depth of 350 feet. Discussions were then held with Mr. Eric Paulsen at Aera LLC and concurrence received that the condition of the well was acceptable relative to proceeding with the intended well capacity test. Fisher Pump then installed a sounding tube to a depth of 473 feet for purposes of providing a water level pressure transducer in the well, followed by the installation of a 25 hp submersible pump to a depth of 479 feet. Background water level data were then collected and the pump was turned on at about 2 pm on October 3, 2012 to perform an initial specific capacity or variable discharge test at rates ranging from 42 to 125 gpm for a period of 400 minutes. Discharge water for the duration of the 400 minutes of specific capacity testing remained cloudy with a slight orange-brown color (refer to Attachment F).

Following an overnight period of water level recovery (refer to Attachment D) on October 4, 2012 a constant discharge test was started at 11 a.m. at a discharge rate of approximately



125 gpm. The test continued for a period of 12 hours with a maximum drawdown (water level below the static water level) of about 146 feet, indicating a specific capacity for the well of about 0.85 gpm per foot of drawdown. During the last 4 hours of the constant discharge test the pumping water level remained stable. At the end of the 12 hour constant discharge test a sample of the produced groundwater was collected for analysis of general mineral constituents. The analytical results are contained in Attachment H. Upon cessation of pumping, recovery water levels were monitored for a period of 500 minutes and indicate essentially full recovery to the pre-test static water level within the first 60 minutes after cessation of pumping. The temporary test pump was then removed by Fisher Pump, and the existing submersible pump reinstalled to the same depth, and start-up of the well was then performed. Demobilization from the site was completed by Fisher Pump on Friday, October 5, 2012.

Analysis of the groundwater produced (refer to Attachment H) indicates it to be of a calcium sulfate chemical character with total dissolved solids (TDS) concentration of 900 milligrams per litre (mg/l). The groundwater is considered somewhat hard and, based on this analysis, contains a dissolved iron concentration of 1.3 mg/l. The analytical results appear to be grossly similar to groundwater quality analysis from this well performed in the late 1970s. The groundwater is considered to be a freshwater source that would be generally suitable for the intended industrial uses by Aera LLC, subject to review by a chemical engineer relative to use for steam production.

Based on the results of the capacity testing of the McCrosky WS-12 well presented above, it is apparent that the Paso Robles formation which underlies the northerly portion of the "Aera Fee" is saturated, and that properly designed and constructed wells at the locations recommended in our report of March 2012 should be able to produce fresh groundwater at rates in the range of 250 gpm each. The existing McCrosky WS-12 well is considered to be in fairly poor condition, and, given its age and relatively inefficient and unknown design, affected by significant incrustation of the perforated openings. Detailed analysis of the aquifer properties (i.e., transmissivity) is not considered appropriate given the poor condition of the well. Nonetheless, the well capacity testing and analysis provides guidance on a suggested preliminary depth and design of additional freshwater source wells on the "Aera Fee" lease. Such wells should be drilled to approximate depths of 750 feet, geophysically electrically logged, mud logged, and as appropriate, completed with 12-inch diameter mild steel casing with perforations placed from depths of about 300 to 700 feet. The wells should be gravel packed, provided with surface seal, and generally follow construction standards that would be contained in well construction permits to be obtained from the County of Santa Barbara. Pending the decisions of Aera LLC on the use of groundwater as a supply source for the proposed project (subject to a variety of engineering, conveyance, environmental, and cost issues) we would be pleased to continue to assist Aera LLC on the next steps in this process.

Anticipating that some form of environmental review will be associated with the permits for the project and that use of groundwater as a source will be subject to environmental review, we suggest that the McCrosky WS-12 well be instrumented with a downhole pressure transducer to collect water level readings on an hourly basis. Such data could then be downloaded on a quarterly basis to assess current use, seasonal water level variations, and potential recharge to the aquifer associated with precipitation and streamflow in the northerly

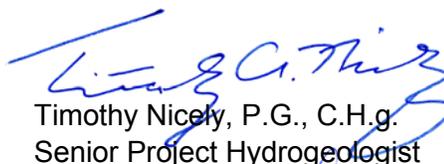


Santa Maria River. The well should also be provided with a small totalizer meter to document production.

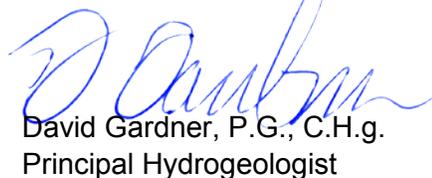
It has been our pleasure to assist Aera LLC on this project and we remain available to continue our work at your direction.

Sincerely,

FUGRO CONSULTANTS, INC.



Timothy Nicely, P.G., C.H.g.
Senior Project Hydrogeologist



David Gardner, P.G., C.H.g.
Principal Hydrogeologist

Copies: (4) Addressee and Pdf

Attachments:

- Attachment A - Proposal Sturgeon Services International, Dated August 16, 2012
- Attachment B - Air Photo of The "Aera Fee"
- Attachment C - Documentation of Health and Safety Measures
- Attachment D - Results of a Downhole Video-Log of the Mccrosky WS-12 Water Well
- Attachment E - Various Photographs that Document the Field Work
- Attachment F - Report of Field Operations
- Attachment G - Various Graphs of the Aquifer Test Results
- Attachment H - Constant Discharge Test Results General Mineral Constituents Analysis

ATTACHMENT A
PROPOSAL STURGEON SERVICES INTERNATIONAL
DATED AUGUST 16, 2012



4820 McGrath Street, Suite 100
Ventura, California 93003-7778
Tel: (805) 650-7000
Fax: (805) 650-7010

August 16, 2012
Proposal No. 04.62120024

Sturgeon Services International
3511 Gilmore Avenue
Bakersfield, California 93308-6205

Attention: Mr. E. Dean Taormina, Central Coast Division Manager

Subject: Proposal to Conduct Well Capacity and Aquifer Test, McCrosky WS-12 Water Well

Dear Mr. Taormina:

As requested, Fugro Consultants, Inc. is pleased to submit this proposal to Sturgeon Services International to assist Aera Energy LLC (Aera) in an evaluation of the condition and production capacity of the existing McCrosky WS-12 water well located in the East Cat Canyon Development, Aera Fee property east of Long Canyon Road near the town of Sisqoc in Santa Barbara County. As discussed in a recently prepared groundwater source study (March 28, 2012) for Aera, this water supply well was reported in the late 1970s to have pumped groundwater in the range of about 130 gallons per minute (gpm) from aquifers contained in the Paso Robles formation. The well is reported to have been drilled to a depth of 700 feet and over the years has been retrofitted with a series of successively smaller pumps. The well is currently being used by a Mr. Joe Jorge and several other ranchers under a use agreement with Aera. Actual pumpage from the well is believed to be somewhat intermittent and in the range of 10 gpm.

The purpose of performance testing this well is to determine the well's current condition (depth, water level, and depth of perforated casing, etc.) and to perform a 24 to 48 hour constant discharge test to better understand the production potential of aquifers of the Paso Robles formation in this area of the lease. The well was inspected in March 2012 and found to be operable with a power drop to the well from a nearby power pole. To test the well in the range of the historic reported yield (i.e., in the range of 125 gpm) the existing pump in the well will need to be removed (pump setting depth unknown) and a temporary submersible pump of suitable capacity and lift installed. At that time, the well would be video logged to determine depth, water levels, condition of the casing, and perforations. The well would initially be pumped to assess specific capacity (range in well yields and drawdown) followed by a 24 to 48 hour constant discharge test at an appropriate production rate. A water sample would be collected for analysis of general mineral constituents. The well would be equipped with a downhole pressure transducer to record water-level variations at regular intervals (on the order of every minute). A recovery test would be conducted for a duration of 12 hours following the pump test. The temporary pump would then be removed and the existing small pump reinstalled. Fugro would provide oversight of the entire task and prepare a summary report of the findings. The report would comment on the results relative to the groundwater resources of the Paso Robles formation in the lease area relative to the needs of Aera.

To perform the above work, Fugro would work directly for Sturgeon who would coordinate the overall field services consistent with their current contracts with Aer. Fugro in



turn would retain the services of a qualified well-pump contractor (Scott Fisher Pumps located in Santa Maria) to assist in the pump removal and installation of a temporary test pump, coordinate the electrical connections, and surface discharge of the produced water. Fugro would retain Welenco to perform the well video log, and use Capco Analytical to perform the water quality analysis. To coordinate the work we would need to meet at the site with Mr. Jorge to understand his well use requirements and the approximate 3 day interruption of use of the well during the performance testing. Based on a meeting with Scott Fisher at the well site in early August 2012, the electricity at the site can be used for the pump test (i.e., a generator will not be required) and that discharge of the produced water will be directed to an appropriate drainage swale along Long Canyon Road. We assume that Sturgeon will provide details to Fugro and the other subcontractors relative to HSE requirements associated with the proposed work.

The work outlined above is estimated to cost \$22,000, to be performed in accordance with the hourly rates by labor category shown on the attached Fee Schedule. The quote by Fisher Pumps to perform their work is attached to this proposal. The work should require about 3 days in the field to complete, and another 2 weeks to analyze the acquired data, obtain the results of the water quality analysis, and prepare the report documenting the findings.

We appreciate the opportunity to continue to assist Aera on this project. Please call should you have any questions.

Sincerely,

FUGRO CONSULTANTS, INC.

A handwritten signature in blue ink, appearing to read "D. Gardner".

David Gardner, P.G., C.H.g.
Principal Hydrogeologist

Copies: (Pdf) Addressee
(Pdf) Eric Paulson, Aera Energy LLC

Attachments: Fisher Pump Quote

ATTACHMENT B
AIR PHOTO OF THE "AERA FEE"

N:\Projects\04_2012\04_6212_0024_East_Cat_Cyn\Outputs\2012_03_22_GW_Level_Report\mxd\11x17\Plate-6_TestWellLoc.mxd, 3/26/2012, evonthury



Legend

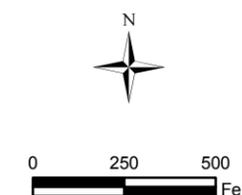
- Lease Name, Well No.
 Water Well Location
- Lease Name, Well No.
 Oil Well Location
- Potential Test Well Location

Aera Lease Boundaries

- Aera Fee

Imagery Source:
 This map presents land cover imagery for the world and detailed topographic maps for the United States. The map includes the National Park Service (NPS) Natural Earth physical map at 1.24km per pixel for the world at small scales, i-cubed eTOPO 1:250,000-scale maps for the contiguous United States at medium scales, and National Geographic TOPO! 1:100,000 and 1:24,000-scale maps (1:250,000 and 1:63,000 in Alaska) for the United States at large scales. The TOPO! maps are seamless, scanned images of United States Geological Survey (USGS) paper topographic maps. For more information on this map, visit us online at http://goto.arcgisonline.com/maps/NGS_Topo_US_2D

Copyright: © 2010 National Geographic Society
 Grid: NAD83 State Plane, California Zone V, Feet



POTENTIAL TEST WELL LOCATION MAP
 East Cat Canyon
 Santa Barbara County, California

ATTACHMENT C
DOCUMENTATION OF HEALTH AND SAFETY MEASURES



1. General Information

Project Title: East Cat Canyon Hydrogeologic Well Source Study; McCrosky Well WS12 Project Manager: 805-289-3826
Phone Number:

Project No.: 04.6212 0024 Activity Center Mgr: 62
Phone Number:

Site Name: East Cat Canyon, Cat Canyon Oil Field Site HSE Officer: Timothy Nicely

Site Address: 6516 East Cat Canyon Road, Santa Maria, California

Facility HSE Officer (if applicable):

FCL HSE Officer: Cathy Morris Fugro 24-Hr 888-333-4577
Office (713) 346-4016; Cell (805) 432-3115 Emergency #

Client: Sturgeon Services Site Thomas Bro. Nos. 345 H11

Client Contact: Dean Taormina Client Phone No: 661-343-6580

Subcontractor: Fisher Pump, Scott Fisher Subcontractor Phone No.: 805-310-2576

USA Ticket #: None needed Exp. Date: N/A

(Attach Electronic USA Ticket to this Plan) USA Ticket Number:

Current on FCL Approved Subcontractor List? Yes No

If answered No, Business Unit Manager Approval Necessary:

2. Emergency Information

Fire: 911 or Local: Police: 911 or Local: Ambulance: 911 or Local:

Nearest Medical Facility: Marian Medical Center

Address: 1400 East Church Street, Santa Maria, CA Phone: 805-739-3000

This form may be used for those site activities that do not pose a significant threat of exposure to site contaminants or hazards. If unsure which form to use check with the HSE Manager. It is the responsibility of the Project Manager to ensure that this plan is complete and sign the Health Safety and Environmental Plan (HSEP). All project personnel must receive a copy of this form, familiarize themselves with its contents and sign the signature page before work begins.



Directions: From well site: Drive north on Long Canyon Road;
Turn left onto Foxen Canyon Road;
Turn right onto Philbric Road;
Continue onto E Main Street;
Turn Left onto Palisade Drive;
Take 1st Right onto E Church Street; Hospital is on the right

From site office: Drive NW on Cat Canyon Road;
Turn Left onto Palmer Road;
Take 1st Right onto Dominion Raod;
Turn Left onto E Clark Ave.;
Merge onto US 101 North;
Take exit 171 toward CA-166 W/Main Street/Guadalupe;
Turng Right onto Cypress Street/Nicholson Ave;
Turn left onto Stratford Ave;
This becomes Church Street; Hospital is on the right

3. Planned Site Activities

- a. Pull existing pump (Fisher Pump)
- b. Perform video log, install pump, electrical and plumbing
- c. Perform pumping test

4. Restricted, Exclusion and/or Protected Habitat Areas

None

5. Local and/or Physical Hazards

(Address physical, environmental or health hazards such as high traffic areas, rough terrain, severe weather conditions, excessive dust or pollutants.. Note: If there is a significant threat of exposure to site contaminants use the ES-F60 Environmental Site Health and Safety Plan)

Lockout/Tagout procedures apply (HS-R49 is appended)

Heat illness prevention may apply in the canyon (HS-R35 is appended)

Fire prevention associated with vehicular exhaust and/or electrical work for well pump may apply (HS-R36 is appended)

6. Project Specific Training Requirements

First Aid / CPR



- H₂S (Hydrogen Sulfide/Sulfur Dioxide)
- HAZWOPER 40-Hour
- California Oil Producers Contractor Orientation
-

7. Attached JSAs and/or Procedures

- GEO 101 Hand Sampling
- GEO 102 Drilling / Sampling
- GEO 103 Downhole Logging
- GEO 104 Exploration Pits
- GEO 105 Seismic Refraction Survey

8. Health Safety and Environmental Procedures Required by the Facility
(Such as On-Site Safety Orientation, Site Access Procedures, etc.)

On site safety training is required at Aera's East Cat Canyon site office prior to any site work

9. Project Safety Equipment List

(List all applicable PPE from JSA's, add any project specific requirements such as barricades, 2-way radios, etc.)

- | | |
|---|---|
| <input checked="" type="checkbox"/> Hard Hat | <input type="checkbox"/> Goggles |
| <input checked="" type="checkbox"/> Safety Shoes | <input type="checkbox"/> Face Shield |
| <input checked="" type="checkbox"/> Hearing Protection | <input type="checkbox"/> Safety Harness |
| <input type="checkbox"/> Cotton Gloves | <input checked="" type="checkbox"/> Sun Screen |
| <input type="checkbox"/> Leather Gloves | <input checked="" type="checkbox"/> Insect Repellent |
| <input type="checkbox"/> Rubber Gloves | <input checked="" type="checkbox"/> Drinking Water |
| <input checked="" type="checkbox"/> Safety Glasses w/Side Shields | <input checked="" type="checkbox"/> First Aid Kit |
| <input checked="" type="checkbox"/> Safety Vest | <input checked="" type="checkbox"/> Fire Extinguisher |



(For PPE Requirements of Level C or above use the GeoEnvironmental Site HSE Plan Template)*

**See Onshore Guidebook Page 37 for a description of PPE Levels of Protection*



By my signature below, I hereby indicate that I have reviewed and understand this HSEP and I agree to follow the guidelines therein.

Fugro Employees

Name (Print)	Name (Signature)	Date
Tim Nicely		10/1/2012

Subcontractors

E. Oscar Taormina		10-1-12 SSI
David S. Fisher		10-1-12 FPS
		10-1-12 FPS
Amador Hernandez		10-1-12 FPS

TO THE SUBCONTRACTOR: *This plan has been prepared solely for the use of Fugro Consultants, Inc. personnel. It is supplied to you for informational purposes only. You are responsible for your own health safety and environmental program.*

	10/1/2012
Project Manager	Date



Directions to Marian Medical Center
1400 East Church Street, Santa Maria, CA 93454
15.6 mi – about 27 mins



©2012 Google

Map data ©2012 Google

A 6651 Cat Canyon Rd, Santa Maria, CA 93454

- | | | |
|---|---|----------------------------|
| 1. | Head west on Cat Canyon Rd toward Long Canyon Rd
About 5 mins | go 2.2 mi
total 2.2 mi |
|  | 2. Turn left onto Palmer Rd
About 1 min | go 0.5 mi
total 2.6 mi |
|  | 3. Take the 1st right onto Dominion Rd
About 6 mins | go 3.5 mi
total 6.1 mi |
|  | 4. Turn left onto E Clark Ave
About 6 mins | go 2.7 mi
total 8.8 mi |
|  | 5. Slight right to merge onto US-101 N
About 7 mins | go 6.2 mi
total 15.0 mi |
|  | 6. Take exit 171 toward CA-166 W/Main St/Guadalupe | go 0.2 mi
total 15.2 mi |
|  | 7. Turn right onto Cypress St/Nicholson Ave | go 0.1 mi
total 15.4 mi |
|  | 8. Turn left onto Stratford Ave | go 358 ft
total 15.4 mi |
|  | 9. Stratford Ave turns slightly right and becomes E Church St
Destination will be on the right | go 0.1 mi
total 15.6 mi |

B **Marian Medical Center**
1400 East Church Street, Santa Maria, CA 93454

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2012 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.



Directions to Marian Medical Center
1400 East Church Street, Santa Maria, CA 93454
13.4 mi – about 26 mins



A Long Cyn Rd

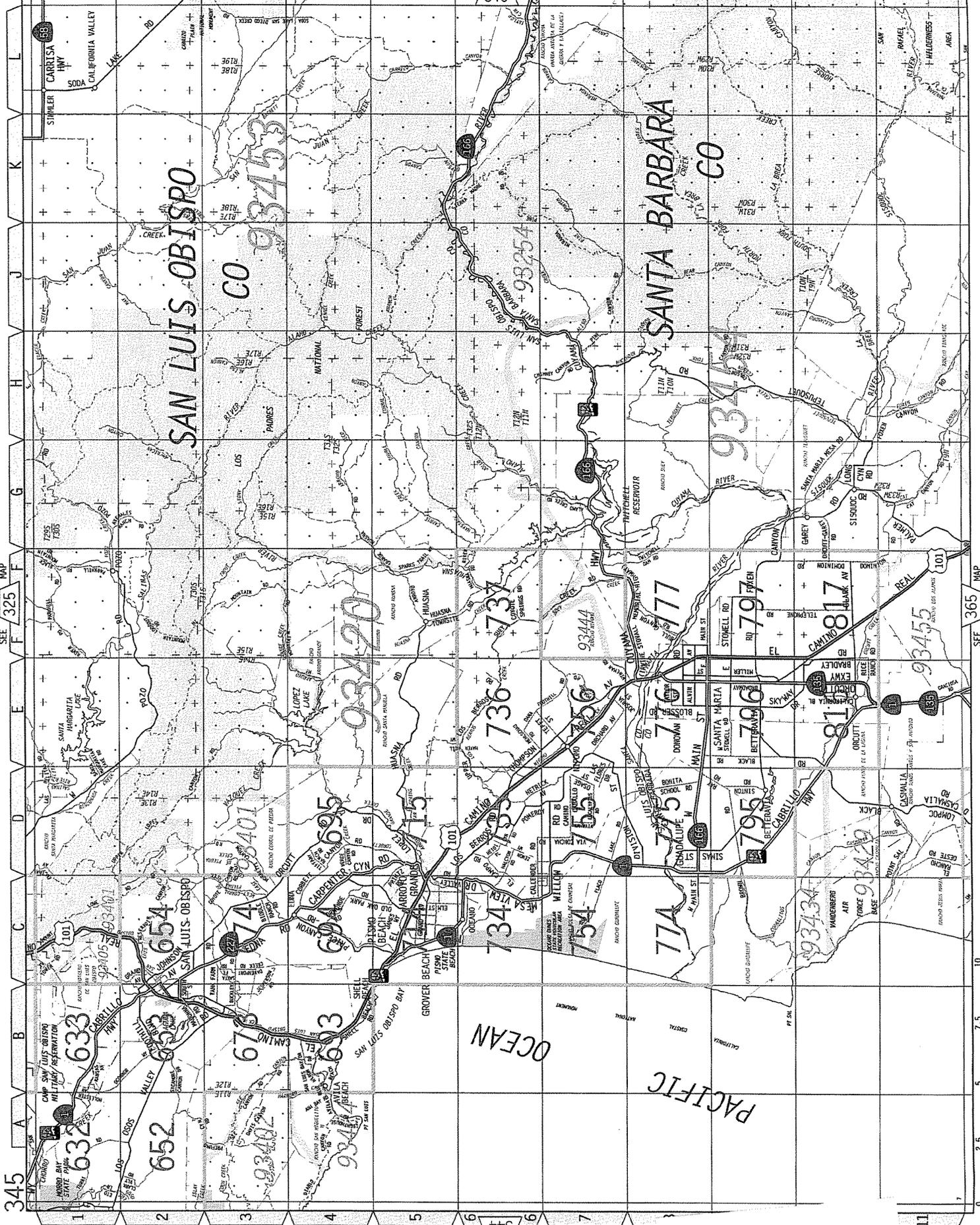
- 1. Head **north** on **Long Cyn Rd** toward **Foxen Canyon Rd** go 0.7 mi
total 0.7 mi
About 2 mins
-  2. Slight left onto **Foxen Canyon Rd** go 1.4 mi
total 2.1 mi
About 3 mins
-  3. Turn right to stay on **Foxen Canyon Rd** go 7.4 mi
total 9.4 mi
About 13 mins
-  4. Turn right onto **Philbric Rd** go 1.5 mi
total 11.0 mi
About 3 mins
- 5. Continue onto **E Main St** go 2.4 mi
total 13.3 mi
About 5 mins
-  6. Turn left onto **Palisade Dr** go 318 ft
total 13.4 mi
-  7. Take the 1st right onto **E Church St** go 7 ft
total 13.4 mi
Destination will be on the left

B **Marian Medical Center**
1400 East Church Street, Santa Maria, CA 93454

These directions are for planning purposes only. You may find that construction projects, traffic, weather, or other events may cause conditions to differ from the map results, and you should plan your route accordingly. You must obey all signs or notices regarding your route.

Map data ©2012 Google

Directions weren't right? Please find your route on maps.google.com and click "Report a problem" at the bottom left.



345

344

11



SEE 365 MAP

ENERGY ISOLATION (LOCKOUT TAGOUT)

HS-R49

1.0 PURPOSE

The purpose of this procedure is to establish to help maintain the safety of all employees and to comply with the OSHA regulation 29 CFR 1910.147. It establishes the minimum safety requirements for work being performed where energy sources can be a hazard.

2.0 APPLICATION

This procedure establishes minimum requirements for the lockout of energy isolating devices when maintenance or servicing is done on machines or equipment. It is essential that the machine or equipment is stopped and isolated from all potentially hazardous energy sources and locked out before employees perform any service or maintenance where the unexpected energization or start-up of the machine or equipment or release of stored energy could cause injury.

This program and its procedures shall apply to all activities under the direct control of the Company.

3.0 DEFINITIONS

Affected Employee - An employee whose job requires him/her to operate to use a machine or equipment on which services or maintenance is being performed under lockout, or whose job requires him/her to work in an area in which such servicing or maintenance is being performed.

Authorized Employee - An employee, by department designation, which locks or implements a system procedure on machines or equipment for the purpose of performing the service or maintenance on that machine or equipment.

Cord and Plug-connected Equipment - Equipment that is powered by an electrical energy source that can be shut down by removing the cord and plug from the energy source.

Energized - Connected to an energy source or containing residual or stored energy.

Energy Isolation Device - A mechanical device that is part of a piece of equipment, machinery or system that physically prevents the transmission or release of energy. Some examples include manually operated electrical circuit breakers; disconnect switches, slide gates, line valves, and blocks. This term does not include a push button; selector switch, and other control circuit type devices.

Energy Source - Any source of electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.



Locks - An individually keyed padlock personally assigned to an Authorized Person or Affected Person that is used with a lock out device to control and isolate energy sources.

Lockout - The placement of a lockout device on an energy isolating device, in accordance with an established procedure, ensuring that the energy isolating device and the equipment being controlled cannot be operated until the lockout device is removed.

Lockout Device - A device that utilizes a positive means such as a lock, either key or combination type, to hold an energy isolating device in the safe position and prevent the energization of a machine or equipment.

Tag Out - Posting a prominent warning tag with durable string onto the energy isolation device and/or lock out device of the piece of equipment, machinery or system being controlled. The tag must state "DO NOT OPERATE" and document the Authorized Person taking the equipment out of operation, as well as the date. It is a warning to others that the equipment cannot be put back into operation until the tag and/or lock have been removed by the Authorized Person.

4.0 RESPONSIBILITIES

4.1 MANAGEMENT

Management is responsible for making sure that all hazardous energy sources are identified and that all applicable employees receive training consistent with their level of lockout/tag-out responsibility.

4.2 ON SITE SUPERVISOR

The on-site supervisor must ensure that all employees follow the requirements or guidelines making up these procedures.

4.3 EMPLOYEE

The employee is required to comply with the restrictions and limitations during the use of lockout. Only authorized employees are to perform the lockout in accordance with this procedure. Upon observing a machine or piece of equipment that is locked out to perform servicing or maintenance, employees must not attempt to start, energize, or use that machine or equipment.

5.0 TRAINING

All authorized, affected, and incidental personnel shall receive training consistent with their level of lockout/tag-out responsibility.

An authorized employee is one who has been designated to perform service or maintenance. Training for authorized employees will include:



- Recognition of applicable hazardous energy sources (i.e., electrical, mechanical, hydraulic, pneumatic, chemical, thermal, gravitational, magnetic, tension, kinetic, etc.)
- Type and magnitude of the energy available in the workplace
- Methods and means necessary for energy isolation and control.

An affected employee is one who operates or uses a machine on which servicing is being performed, or one who is required to work in an area in which such servicing is being performed. Affected individuals will be instructed in the purpose and use of the energy control procedure.

Incidental employees are those who may work in an area where energy control procedures are used. These individuals will be instructed about the procedure and the prohibition against restarting or reenergizing machines or equipment which are locked out or tagged out.

Retraining will be provided for all authorized and affected individuals whenever there is a change in their job assignments; a change in machines, equipment, or processes that present a new hazard; or when there is a change in the energy control procedures. Additional retraining will be conducted whenever a periodic inspection or other evidence reveals that there are inadequacies in the individual's knowledge or use of the energy control procedures.

Awareness training will be documented and retained within the Clarity Training by using course LOTOEFV Lockout/Tagout for affected employees.

Outside training shall be conducted for authorized employees.

6.0 JOB PLANNING

Prior to permitting and commencing the work, survey equipment to locate and identify all isolating devices to be certain which switch(es), valve(s), or other energy isolating devices apply to the equipment to be locked out. More than one energy source (electrical, mechanical, stored, or other) may be involved.

7.0 LOCKOUT PROCEDURES

Notify all affected employees that servicing or maintenance is required on a machine or equipment and that the machine or equipment must be shut down and locked out to perform the servicing or maintenance.

The authorized employee shall identify the type and magnitude of the energy that the machine or equipment utilizes. The employee shall understand the hazards of the energy, and shall know the methods to control the energy.

If the machine or equipment is operating, shut it down by normal stopping procedure, i.e., depress stop button, open switch, close valve, etc.

De-activate the energy isolating device(s) so that the machine or equipment is isolated from the energy source(s).

Lock out the energy isolating device(s) with assigned individual lock or tag (if using the tagout system, fasten a "DO NOT OPERATE" tag) that is available from the on site supervisor or the HSE department.

- Lockout and/or tagout device shall include the name of the individual applying the device.
- Lockout devices, where used shall be affixed in a manner that will hold the energy isolating devices in a safe or off position.
- Tagout devices, where used, shall be affixed in such a manner as will clearly indicate that the operation or movement of energy isolating devices from the safe or off positions.
- Where tagout devices are used with energy isolation devices designed with the capability of being locked, the tag attachment shall be fastened at the same point at which the lock would have been attached.
- Where a tag cannot be affixed directly to the energy isolating device, the tag shall be located as close as safely possible to the device in a position that will be immediately obvious to anyone attempting to operate the device.

Stored or residual energy (such as that in capacitors, springs, elevated machine members, rotating flywheels, hydraulic systems, air, gas, steam or water pressure, etc.) must be dissipated or restrained by methods such as grounding, repositioning, blocking, bleeding down, etc.

Ensure that equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the switch or other normal operating control(s) or by testing to make certain the equipment will not operate.

Return operating control(s) to neutral or "OFF" position after verifying the isolation of the equipment.

Prior to starting work on machines or equipment that have been locked or tagged out; the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.

8.0 PROCEDURES FOR TESTING

When temporarily removing lockout devices for the purpose of performing a test on machinery or equipment, the following steps should be taken:



- Check the machine or equipment, as well as the immediate area around the machine or equipment, to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
- Check the work area to ensure that employees have been safely positioned or removed from the area.
- The employee that will be performing the test shall remove the lockout/tagout device(s) in conjunction with the individual that initially attached the lockout/tagout device(s)
- Procedure with testing machine or equipment.
- De-energize machine or equipment and reapply lockout/tagout device(s)
- Ensure that equipment is disconnected from the energy source(s) by first checking that no personnel are exposed, then verify the isolation of the equipment by operating the switch or other normal operating control(s) or by testing to make certain the equipment will not operate.
- Return operating control(s) to neutral or "OFF" position after verifying the isolation of the equipment.
- Prior to starting work on machines or equipment that have been locked or tagged out; the authorized employee shall verify that isolation and de-energization of the machine or equipment have been accomplished.
- The test has been performed and the machine or equipment is now locked out again.

9.0 RESTORING TO SERVICE

When the servicing or maintenance is completed and the machine or equipment is ready to return to normal operating condition, the following steps should be taken:

- Check the machine or equipment, as well as the immediate area around the machine or equipment, to ensure that nonessential items have been removed and that the machine or equipment components are operationally intact.
- Check the work area to ensure that employees have been safely positioned or removed from the area.
- Verify that controls are in "OFF" or neutral position.
- Remove the lockout devices and re-energize the machine or equipment.
- Notify affected employees that the servicing or maintenance is completed and the machine or equipment is ready for use.

Note: This procedure does not apply to cord or plug connected equipment when the equipment is in exclusive control of the employee who is performing the service or maintenance of the equipment.



10.0 PROCEDURES INVOLVING MULTIPLE PERSONS (GROUP LOCKOUT)

If more than one authorized employee is required to lockout the same equipment, each shall place his/her own personal lockout device on the energy isolating device(s). When an energy isolating device cannot accept multiple locks, a multiple lockout device (hasp) may be used.

The authorized employee who has the primary responsibility for the work being performed under the protection of a group lockout/tagout device shall ascertain the exposure status of individual group members.

11.0 REFERENCES

29 CFR 1910.333 SUBPART S - ELECTRICAL

Rev. #	Date	DCR #	Approved By:	Description of Change:
0	5/2012	---		Initial Document Release

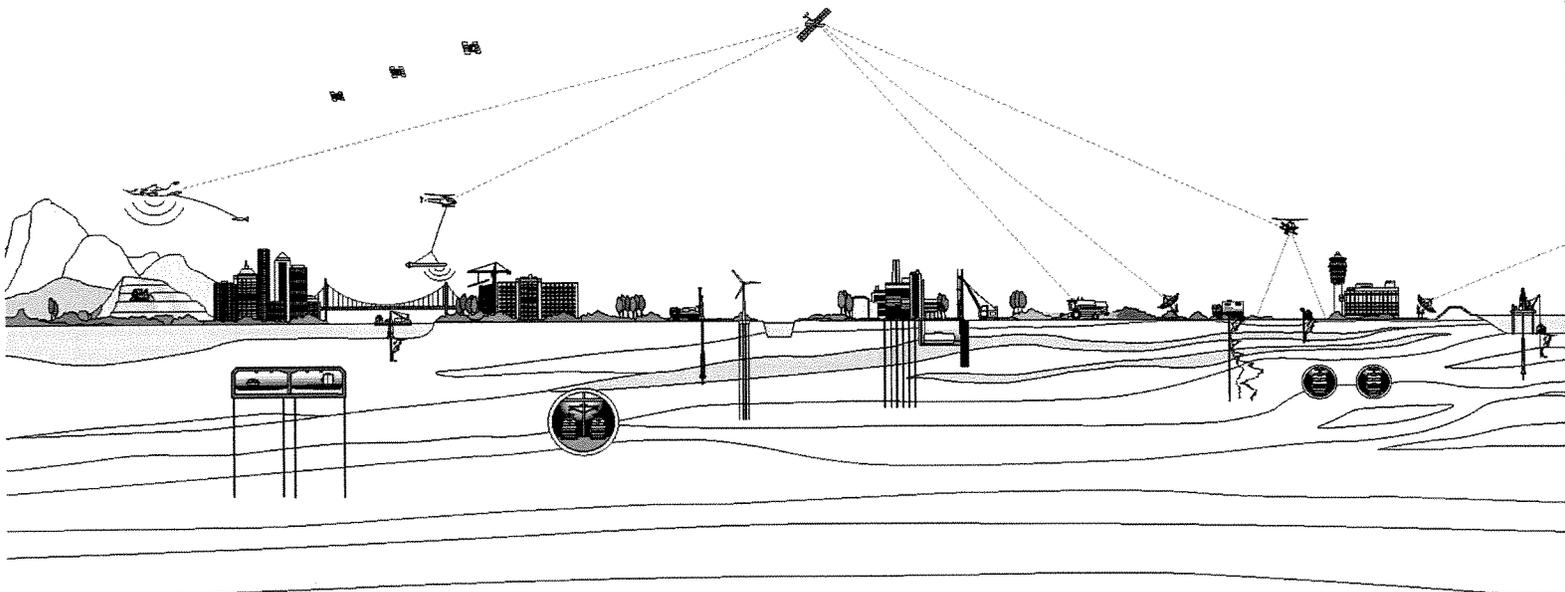
FUGRO CONSULTANTS, INC.



HEAT ILLNESS PREVENTION PLAN

HS-R35

Prepared for:
EMPLOYEES OF FUGRO CONSULTANTS, INC.



HEAT ILLNESS PREVENTION PLAN

APPROVED BY:  DATE: May 2012
Cathy Morris, Fugro Consultants, Inc.
HSE Manager

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1.0 PURPOSE

The purpose of the Heat Illness Prevention Plan (HIPP) is to meet the requirements set forth in California Code of Regulations, Title 8, Section 3395 as well as address Heat Illness concerns relating to employee's safety throughout Fugro Consultants, Inc., and also to serve as a supplement to the Fugro Consultants Injury and Illness Prevention Program (IIPP). The information is intended to be used in conjunction with the IIPP. The HIPP establishes procedures and provides information necessary to ensure that employees of Fugro Consultants, Inc. (Fugro), are knowledgeable in the prevention and recognition of heat stress, in order to ensure their own safety and the safety of others.

2.0 SCOPE

This HIPP provides information regarding safe work practices for Fugro employees working in conditions where heat-related illness can be a serious to life-threatening occurrence.

3.0 HEAT ILLNESS PREVENTION

Heat-related illnesses are avoidable if training is in place and the right actions are taken before, during, and after working in hot conditions. High temperatures and humidity can stress the body's ability to cool itself, making heat illness a concern during hot weather months. Working outdoors, especially during summer months, exposes personnel to elevated heat conditions, creating the potential for heat illness. The three primary forms of heat illness are heat cramps, heat exhaustion, and heat stroke. Heat stroke can be a life-threatening condition.

3.1 RECOGNIZE THE HAZARD

Learn the signs and symptoms of heat-induced illness and how to respond. All Fugro Consultants employees will receive supervisory and non-supervisory training, as outlined in CCR Title 8, Section 3395 (Heat Illness Prevention). Cal/OSHA and OSHA Heat Illness Prevention and Heat Equation Guidelines are provided in Appendix A of this HIPP.

Employee training topics will include:

- The environmental and personal risk factors for heat illness
- Review of this HIPP and procedures
- The importance of staying hydrated, drinking water frequently throughout the day, up to 4 cups per hour
- Importance of acclimatization (allowing the body to adjust gradually to the work in high heat)
- Types of heat illness and the signs and symptoms
- Necessity of immediately reporting to Fugro, directly or through the employee's supervisor any signs or symptoms of heat illness

- Fugro's procedures for responding to symptoms of possible heat illness, including how emergency medical services will be provided if they become necessary
- Fugro's procedures for emergency communications. This includes the emergency response procedures such as locating local medical services and communication alternatives
- Fugro's procedures for ensuring that, in the event of an emergency, clear and precise directions to the work site can and will be provided, as needed, to emergency responders

Supervisory Training. Prior to assignment to supervision of employees working in the heat, training on the following topics shall be provided:

- The information required for employee training listed above
- The importance of preventing heat illness and how to recognize the symptoms
- The procedures the supervisor is to follow when an employee exhibits symptoms consistent with possible heat illness, including emergency response procedures
- Procedures for acclimatization
- Modifying working hours where necessary/possible to work during cooler hours of the day
- Providing a "buddy system" to allow employees to watch each other closely for signs of heat illness

3.2 WATER

There will be an adequate supply of clean cool potable water available at all job sites. The Fugro Site Safety Representative or designated person will ensure that an adequate supply of drinking water is available at each location and that employees are encouraged consume an adequate amount of water.

It is recommended that each employee drink 4 8-ounce glasses of water per hour, including at the start of shift.

3.3 SHADE

Fugro will provide shade for recovery periods when employees need relief from the heat. The direct heat of the sun can add as much as 15 degrees to the heat index. Rest breaks are important to provide time for cooling and provide an opportunity to drink water. Breaks should be taken in cooler, shaded areas. The Fugro site safety representative or designate will be responsible for ensuring that adequate shade is available at work sites where the temperature is expected to exceed 85 degrees. The location of shade areas and the need to rest and get into

the shade if any heat illness symptoms are present will be discussed daily at the tailgate meeting.

3.4 ACCLIMATIZATION

People need time for their bodies to adjust to work in the heat. Acclimatization is particularly important for employees returning to work after a prolonged absence or recent illness, recently moving from a cool climate to a hot climate, or working during the beginning stages of a heat wave.

For heavy work under extremely hot conditions, at least the first 2 or 3 days of work in the heat should be limited to 2 to 4 hours.

Monitor employees closely for signs and symptoms of heat illness, particularly when they have not been working in the heat for the last few days or when a heat wave occurs.

3.5 PROMPT MEDICAL ATTENTION

Recognizing the symptoms of heat illness and providing an effective response requires promptly acting on early warning signs. These signs are covered in the information provided in Appendix A and in Section 4 of this HIPP. Any of these symptoms require immediate attention.

All Fugro field personnel are first-aid/CPR trained. However, if workers show any abnormal response to the heat and first-aid trained personnel are not immediately available onsite, call 911 immediately. A site-specific safety plan is written for all Fugro field projects. These plans include an emergency action plan that details the site location and alternative communication methods if cell phone coverage is not available at the work site. How to contact emergency services and guide them to the work location will be discussed daily at the tailgate meeting.

3.6 OTHER INFORMATION

- Dress for the heat. Wear lightweight, loose fitting, light colored clothing.
- Eat small meals and eat more often. Avoid foods that are high in protein, as they tend to increase metabolic heat.

4.0 GENERAL SIGNS AND CARE FOR HEAT EMERGENCIES

4.1 HEAT CRAMPS

Description: Heat cramps are a common type of heat-related injury that most people have experienced at one time or another. Heat cramps are muscle spasms that usually affect the arms, legs, or stomach. Frequently, they do not occur at the time of exposure, but later at night or when relaxing. Heat cramps are caused by heavy sweating, especially when water is not replaced quickly enough. Although heat cramps can be painful, they are not considered serious.

Prevention/First Aid: Drink electrolyte solutions such as Gatorade and plenty of water during the day, and try eating more fruits, like bananas, to help keep your body hydrated during hot weather. Contact your supervisor, Fugro safety personnel, or call 911 if you or a coworker becomes ill.

4.2 HEAT EXHAUSTION

Description: Heat exhaustion is a more serious condition than heat cramps. It occurs when the body's internal temperature-regulating system is overworked, but has not completely shut down. In heat exhaustion, the surface blood vessels and capillaries, which enlarge to cool the blood, collapse from loss of body fluids and necessary minerals. This happens when you do not drink enough fluids to replace what you are sweating away.

Symptoms Include: Headaches, dizziness or lightheadedness, weakness, mood changes such as irritability, confusion, or the inability to think straight, upset stomach, vomiting, decreased or dark colored urine, fainting or passing out, and pale, clammy skin.

Prevention/First Aid: Act immediately. If not treated, heat exhaustion may advance to heat stroke or death. Move the victim to a cool, shaded area to rest, and don't leave the person alone. If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise the legs 6 to 8 inches. If symptoms include nausea or upset stomach, lay the victim on his or her side. Loosen and remove any heavy clothing. Have the victim drink cool water (about a cup every 15 minutes) unless sick to the stomach. Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin. Call 911 for emergency help if the person doesn't feel better within a few minutes.

4.3 HEAT STROKE

Description: Heat stroke is a life-threatening illness with a high death rate. It occurs when the body has depleted its supply of water and salt and the victims' core body temperature rises to deadly levels. A heat stroke victim may suffer heat cramps and/or heat exhaustion before progressing into the heat stroke stage, but this is not always the case. It should be noted that heat stroke is sometimes mistaken for a heart attack. It is therefore very important to be able to recognize the signs and symptoms of heat stroke and to check for them anytime an employee collapses while working in a hot environment.

Symptoms Include: A high body temperature (103 degrees F); a distinct absence of sweating (usually), hot red or flushed dry skin, rapid pulse, difficulty breathing, constricted pupils, any or all of the signs or symptoms of heat exhaustion including dizziness, headache, nausea, vomiting or confusion, and possibly more severe symptoms including bizarre behavior and high blood pressure. Advanced symptoms can be seizure or convulsions, collapse, loss of consciousness, and a body temperature of over 108 degrees F.

Prevention/First Aid: Call 911 for emergency help immediately. Move the victim to a cool, shaded area, and don't leave the person alone. Lay the victim on his or her back. Move any nearby objects away from victim if symptoms include seizures or fits. If symptoms include

nausea or upset stomach, lay the victim on their side. Loosen and remove any heavy clothing. Have the person drink cool water (about a cup every 15 minutes) if alert enough to drink something, unless person is sick to their stomach. Cool the person's body by fanning and spraying with a cool mist of water or wiping with a wet cloth or covering him or her with a wet sheet. Place ice packs under the armpits and groin area.

For additional information on Heat Illness Prevention, please contact your supervisor or the Fugro HSE Department.

Document Revision Record

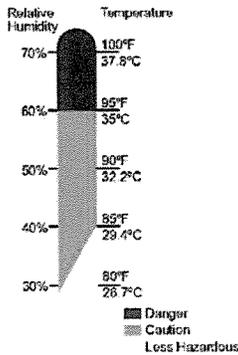
Rev. #	Date	DCR #	Approved By:	Description of Change:
0	5-2012	--		Initial Document Release

APPENDIX A

The Heat Equation

HIGH TEMPERATURE + HIGH HUMIDITY
+ PHYSICAL WORK = HEAT ILLNESS

When the body is unable to cool itself through sweating, serious heat illnesses may occur. The most severe heat-induced illnesses are heat exhaustion and heat stroke. If left untreated, heat exhaustion could progress to heat stroke and possible death.



U.S. Department of Labor
Occupational Safety and Health Administration
OSHA 3154
2002

Heat Exhaustion

What are the symptoms?

HEADACHES; DIZZINESS OR LIGHTEADEDNESS; WEAKNESS; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; UPSET STOMACH; VOMITING; DECREASED OR DARK-COLORED URINE; FAINTING OR PASSING OUT; AND PALE, CLAMMY SKIN

What should you do?

- Act immediately. If not treated, heat exhaustion may advance to heat stroke or death.
- Move the victim to a cool, shaded area to rest. Don't leave the person alone. If symptoms include dizziness or lightheadedness, lay the victim on his or her back and raise the legs 6 to 8 inches. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or applying a wet cloth to the person's skin.
- Call 911 for emergency help if the person does not feel better in a few minutes.

Heat Stroke—A Medical Emergency

What are the symptoms?

DRY, PALE SKIN WITH NO SWEATING; HOT, RED SKIN THAT LOOKS SUNBURNED; MOOD CHANGES SUCH AS IRRITABILITY, CONFUSION, OR THE INABILITY TO THINK STRAIGHT; SEIZURES OR FITS; AND UNCONSCIOUSNESS WITH NO RESPONSE

What should you do?

- Call 911 for emergency help immediately.
- Move the victim to a cool, shaded area. Don't leave the person alone. Lay the victim on his or her back. Move any nearby objects away from the person if symptoms include seizures or fits. If symptoms include nausea or upset stomach, lay the victim on his or her side.
- Loosen and remove any heavy clothing.
- Have the person drink cool water (about a cup every 15 minutes) if alert enough to drink something, unless sick to the stomach.
- Cool the person's body by fanning and spraying with a cool mist of water or wiping the victim with a wet cloth or covering him or her with a wet sheet.
- Place ice packs under the armpits and groin area.

How can you protect yourself and your coworkers?

- Learn the signs and symptoms of heat-induced illnesses and how to respond.
- Train your workforce about heat-induced illnesses.
- Perform the heaviest work during the coolest part of the day.
- Build up tolerance to the heat and the work activity slowly. This usually takes about 2 weeks.
- Use the buddy system, with people working in pairs.
- Drink plenty of cool water, about a cup every 15 to 20 minutes.
- Wear light, loose-fitting, breathable clothing, such as cotton.
- Take frequent, short breaks in cool, shaded areas to allow the body to cool down.
- Avoid eating large meals before working in hot environments.
- Avoid alcohol or beverages with caffeine. These make the body lose water and increase the risk for heat illnesses.

What factors put you at increased risk?

- Taking certain medications. Check with your health care provider or pharmacist to see if any medicines you are taking affect you when working in hot environments.
- Having a previous heat induced illness.
- Wearing personal protective equipment such as a respirator or protective suit.

FIRE PREVENTION HS-R36

1.0 PURPOSE

The purpose of the fire prevention and protection plan is to eliminate the causes of fire and prevent loss of life and property by fire. It provides employees and contractors with information and guidelines which will assist them recognizing, reporting and controlling fire hazards. This plan is in compliance with OSHA 29 CFR 1910.39.

2.0 SCOPE

Company-wide.

3.0 BASICS OF FIRE

3.1 THE FIRE TETRAHEDRON

In order to understand fire safety, you must first understand fire chemistry. These four basic elements are needed to produce a fire:

1. Fuel - Paper, wood, rags, oil, or grease.
2. Oxygen - Air, ventilation, stored oxygen.
3. Heat - Ignition sources, hot surfaces, sparks, open flames, electrical arcs.
4. Chemical Reaction - A sustained chemical reaction

To eliminate the potential for a fire or to extinguish a fire, you must remove 1 or more of the 4 components of the Fire Tetrahedron.

3.2 FOUR GENERAL CLASSES OF FIRE

The four general classes of fire are as follows:

1. **Class A** fires are those that have paper, wood, trash, and other solid material for fuel.
2. **Class B** has a flammable liquid or gas as a fuel; an example of a Class B fire would be gasoline that has ignited (In a Class B fire vapor suppression is of primary importance).
3. **Class C** fires are electrical in nature.
4. **Class D** fires result from a combustible metal such as magnesium.

3.3 TYPES OF FIRE EXTINGUISHERS

<u>Class</u>	<u>Contents</u>
A	Water
AB	Chemical Foam or Gel
BC	Carbon Dioxide
BC	Dry Chemical
BC	Liquefied Gas
ABC	Dry Chemical or Halon

4.0 POTENTIAL FIRE HAZARDS: IDENTIFICATION AND CONTROL

4.1 COMMON CAUSES OF FIRES

- Overloaded electrical circuits, unsafe wiring and defective extension cords
- Appliances such as coffee pots/makers, hot plates and other heating devices left on not in use.
- Unattended cooking
- Overheated motors and other equipment not maintained properly
- Improper use of non-electrical heating systems (space heaters)
- Improper disposal of smoking material such as emptying ash trays in trash cans and/or coming in contact with other combustible material.
- Not using an ash tray - leaving a lighted cigarette on combustible material such as furniture
- Improper use, handling and storage of flammable material (gasoline, solvents, paints)
- Improper use of candles, Christmas tree lights and associated electrical cords
- Poor housekeeping which results in accumulation of combustibles such as paper, boxes, oil-soaked rags, and flammable liquids
- Improper use of welding torches and equipment

4.2 CHEMICAL HANDLING AND STORAGE

- Leaks, spills, and overflows must be avoided. Storage of flammable and combustible liquids in open containers is not permitted
- Chemicals, specifically, flammable and combustible liquids, should be stored in appropriate cabinets.
- Incompatible materials in storage areas must be segregated. Specifically, separate ignitable material from oxidizers or sources of ignition. In general, do not store different types of Incompatibles in the same container.

5.0 FIRE PREVENTION GUIDELINES

The following fire prevention guidelines should be adhered to in an effort to mitigate the hazards of fire, explosions, and the dangers associated with flammable materials.



- Work locations, vehicles, and the inside and outside of buildings shall be kept clean and orderly at all times.
- Discarded packing material or scrap should not be accumulated.
- Portable electric heaters must be used with caution, away from ignition sources, furniture and other flammable materials.
- Portable electric heaters must be equipped with an auto shut-off timer and be of the type that shut off automatically if tipped over.
- Combustible materials, such as oil-soaked rags, waste, and shavings shall be kept in approved metal containers with metal lids. Containers should be emptied as soon as possible.
- Flammable liquids such as gasoline, benzene, naphtha, lacquer thinner, and other solvents of this class shall not be used for general cleaning purposes.
- In any building, except one provided for their storage, flammable liquids such as gasoline, benzene, naphtha, lacquer thinner, and other solvents of this class shall be limited to five gallons, in an approved properly labeled container.
- When pouring or pumping gasoline or other flammable liquids from one container to another, metallic contact shall be maintained between the pouring and receiving containers.
- Strict adherence shall be paid to the "No Smoking" and "Stop Your Motor" signs at fuel dispensing locations.
- Change oil-soaked or contaminated clothing. It may cause skin irritation and is a fire hazard. Do NOT place in a dryer!
- Smoking or open flame shall not be permitted in areas where dangerous gases might be present, for example, oil rooms, hydrogen areas, acetylene storage, or similar areas. Neither shall smoking be permitted in storerooms, battery rooms, flammable liquid storage and use locations, or in other areas where quantities of combustible materials are kept. Absence of "No Smoking" signs shall not excuse smoking in dangerous places.
- All containers shall be labeled as to their contents. The Material Safety Data Sheet for each hazard will be readily available.
- A fire escape plan shall be posted in each building. Personnel should be familiar with their plan. Employees assigned to field locations, vessels, rigs, barges, etc., shall review the station bill for information pertaining to muster locations and other emergency responsibilities.

6.0 FIRE SAFETY AND LIFE SAVING EQUIPMENT

Fugro shall provide adequate and appropriate fire, safety, and life-saving equipment. This equipment shall be properly located at all times and only used during emergencies or drills.

It shall only be used for the purpose for which it is intended. All employees shall be required to report any deficiencies in equipment immediately to their supervisor.

Fire, safety and lifesaving equipment shall not be removed from designated locations for any purpose other than its authorized use, maintenance, or testing. When fire extinguishers have been used they shall not be put back into service until they have been refilled.

6.1 TYPES OF FIRE PROTECTION EQUIPMENT

The basic types of fire protection equipment and systems used within Fugro to control or extinguish fires are:

- Portable fire extinguishers
- Sprinkler systems
- Chemical types extinguishing systems, including carbon dioxide, dry chemical and HFC-227ea systems

6.2 INSPECTIONS AND MAINTENANCE

All extinguishers shall be regularly inspected, refilled, weighed, etc., in accordance with the manufacturers' recommendations. The date of such inspections, refills, etc., shall be recorded on a tag permanently attached to the extinguishers.

As required by state fire marshal law, below are the frequencies that each type of fire protection equipment must be inspected by a licensed vendor.

- Fire Extinguishers - Annually
- Fire Alarm Panel - Annually
- Fire Sprinkler System - Quarterly
- Fire Suppression System - Bi-Annually

As required by federal law, OSHA 29 CFR 1910.157, fire extinguishers are to be visually inspected monthly. Documentation of the visual inspection shall be kept and available upon request.

7.0 EMERGENCY DRILLS

Office fire drills shall be held annually and shall be taken seriously by all concerned. For action plans to be effective all staff must be familiar with the safety and emergency procedures appropriate to their location. A log of all emergency drills shall be maintained.

8.0 FIRE PREVENTION TRAINING

Fugro shall provide basic training, upon initial assignment, in the use of fire fighting techniques and equipment to an appropriate number of office and field based personnel. Additional fire fighting training shall be provided annually thereafter.



Where Fugro has provided portable fire extinguishers for employees use in the workplace, Fugro will provide an educational program to familiarize employees with the general principles of fire extinguisher use and the hazards involved in fighting fires that are in the incipient stage.

Employee's assigned fire fighting responsibilities shall be familiar with both the location and the operation of all fire protection equipment in the area of their work.

9.0 APPLICABLE REGULATIONS, CODES AND RECOMMENDED PRACTICES

Emergency Action Plan

Fugro Emergency Contact List

Rev. #	Date	DCR #	Approved By:	Description of Change:
0	5/2012	---		Initial Document Release

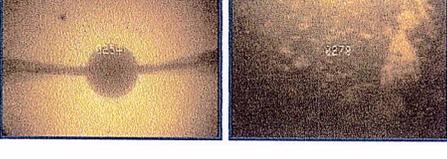
ATTACHMENT D
RESULTS OF A DOWNHOLE VIDEO-LOG OF THE
McCROSKY WS-12 WATER WELL

Wellbore Video Report

GOLIATH ENGINEERING
 1472 ASH STREET ARROYO GRANDE, CA. 93420
 Phone: (805) 710-2132 Fax: (805) 904-6110

Company: Fugeo, Consultants, Inc Invoice No: 1571 Run No.: 1
 Address: 4820 McGrath Street, Suite 100 Well Number: McCrosky WS-12 Water Well
 City: Ventura State: CA Zip: 93003-7778 Survey Date: Oct 2, 2012
 Requested By: Timothy A. Nicley P.O.: _____ Well Owner: AREA
 Copy To: _____ Camera: CCV Color Flip Camera - Short L.H.
 Reason For Survey: General Inspection Zero Datum: Top of Casing
 Operator: L. Hock Lat.: 34° 50' 58.4" Long.: 120° 16' 34.9" Sec: 18 Twp: 9N Rge: 32W
 Location: AREA Lease off Long Canyon road Depth: _____ Van: 5
 Csg I.D.@Surface: 11.5" I.D. Ref: Measured Casing Buildup: Very Heavy, Increasing W/Depth

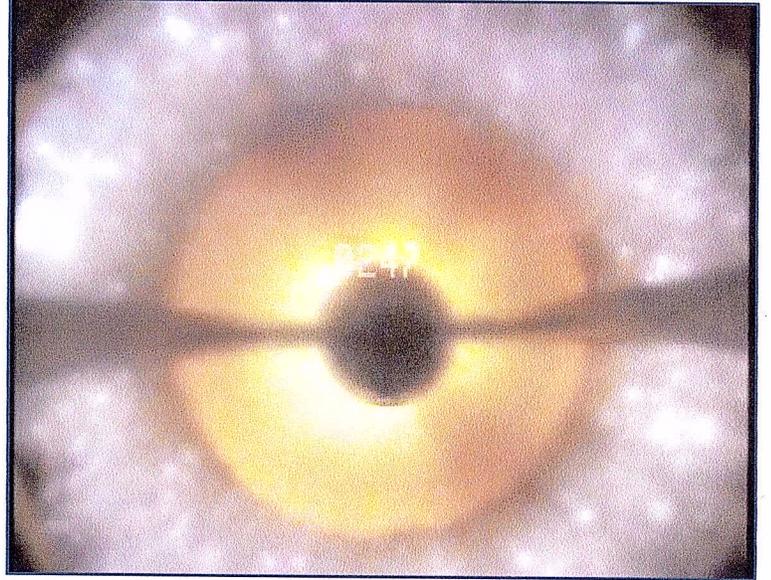
(NOTE: Latitude and Longitude values determined using a recreational GPS accurate to about +/- 45'. SEC, TWP and RGE then determined using the TRS conversion program, accuracy not guaranteed.)

SELECTED WELLBORE SNAPSHOTS	TRUE DEPTHS (SideScan - Feet)	WELLBORE / CASING INFORMATION
0' (See Other Side) 247' (See Other Side) 	0'	Zeroed at top of casing with sideview lens
	247'	Static water level @ 248'
	254'	No visibility @ 255'
	278'	Sideview, no visible perforations
254' 278' 	304'	Sideview, no visible perforations
	350'	Visible vertical slots
	460'	Probable gun perforation
304' (See Other Side) 350' (See Other Side) 	491'	Fill, end of down run survey @ 492'
	492'	Sidescan up
	170'	End of survey and recording
460' (See Other Side) 491' (See Other Side) 		

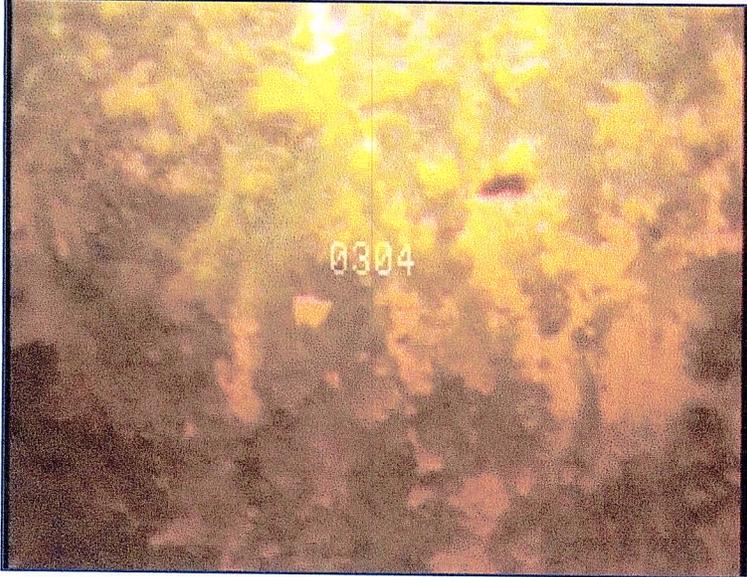
0' (Enlargement)



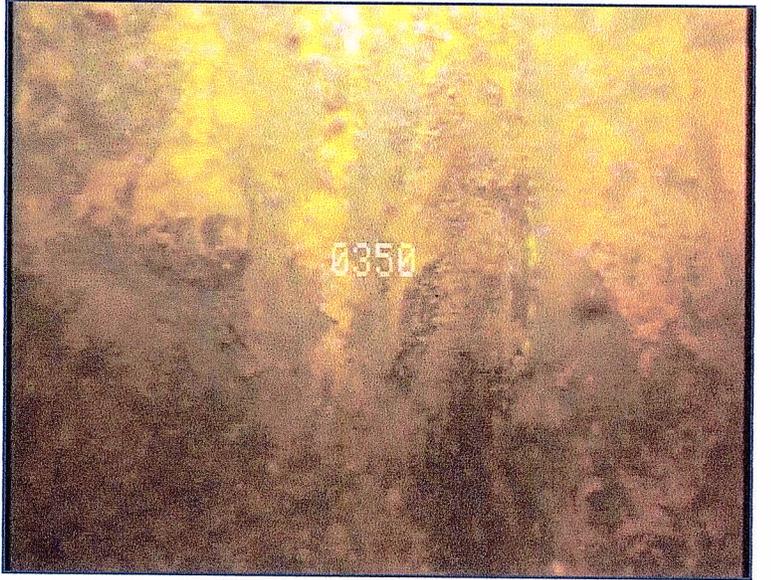
247' (Enlargement)



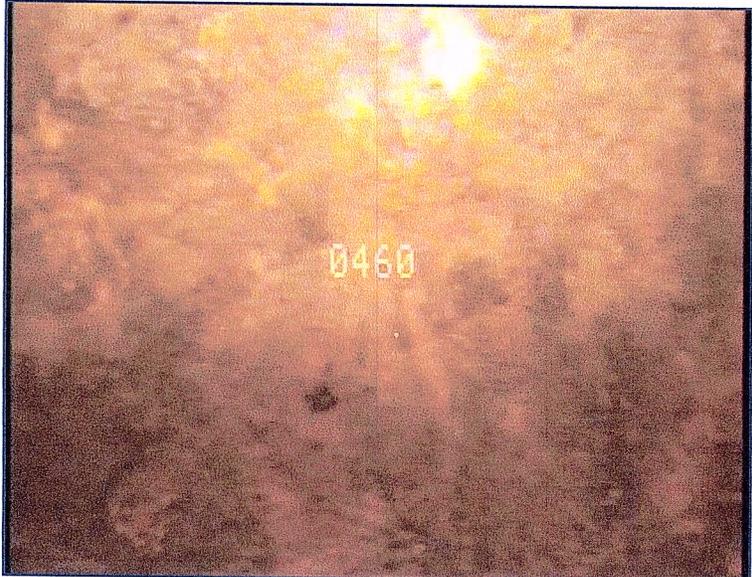
304' (Enlargement)



350' (Enlargement)



460' (Enlargement)



491' (Enlargement)



ATTACHMENT E
VARIOUS PHOTOGRAPHS THAT DOCUMENT THE FIELD WORK



10/1/2012 11:26:40 AM



10/1/2012 11:28:53 AM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Siskiyou, California



10/1/2012 11:29:01 AM



10/1/2012 11:29:08 AM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California



10/1/2012 11:29:28 AM



10/1/2012 3:57:10 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California



10/1/2012 3:57:13 PM



10/1/2012 3:57:17 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California



10/2/2012 11:03:24 AM



10/2/2012 11:04:29 AM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California



10/3/2012 2:08:34 PM



10/3/2012 2:08:49 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Siquoc, California



10/3/2012 4:38:05 PM



10/3/2012 4:38:22 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California



10/3/2012 4:38:29 PM



10/3/2012 4:40:46 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Siquoc, California



10/3/2012 4:42:44 PM



10/3/2012 4:42:52 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California



10/4/2012 7:15:59 PM



10/4/2012 7:16:08 PM

SITE PHOTOGRAPHS
McCroskey WS-12 Pumping Tests
East Cat Canyon, Sisquoc, California

ATTACHMENT F
REPORT OF FIELD OPERATIONS

REPORT OF FIELD OBSERVATIONS



Job No.: 04.62120024	Date: October 1, 2012	(M)	T	W	T	F	S	S
Client: Sturgeon Services → Aera Energy	Project: McCroskey WS-12 testing							
Location: East Cat Cyn., McCroskey WS-12	Weather: Hot, clear							
Observer: Timothy Nicely (Fugro)	Observation Period:		Start: 7-		Stop:			

Description:

7^{am} Site orientation/safety meeting with Dean Trormini (Sturgeon) and Scott Fisher (Fisher Pump).

8^{am} Met at McCroskey WS-12 site. Fish... to pull pump today and slowly install 500 gallons of water to clear for video log, scheduled for Tuesday. Pump to be installed Tuesday. Dean on site all time. (Marvin Teixeira and Joe Jorge notified of plan. 10,000 gal tank is currently full to ~2 ft from top.) Forecast: Hot. Marvin Teixeira would like to have the pump re-installed by Friday.

9^{am} Scott Fisher at yard mobilizing crew.

11¹⁵ Fisher crew (Euvisto y) on site w/ 1000 gal tank. Filled w/ pump @ 17 gpm until 12³⁰⁻²⁵ pm. V/Q: 24.1°C, pH ~ 7.5, EC: 1160 µS/cm

12⁴⁵ Deactivated electrical panel. 1st started pulling pump out 1/4" PVC drop pipe (20' length)

15¹⁰ Pulled 461 ft of drop pipe (4x20, 1x21). 247.88 ft btoc dtw. Top of casing ~1.50 ft above gs. SWL: 242.38' bgs

16³⁰ All off site. To return @ 10^{am} for video log. Water running in to well @ ~2 gpm. Well had re-installed. Tank @ ~900 gallons.

Mileage: _____ miles

Copy Sent To Client:	Y	N	Continued On Next Page	Page	Of
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REPORT OF FIELD OBSERVATIONS



Job No.: 04.62120024	Date: October 2, 2012	M	<input checked="" type="checkbox"/>	W	T	F	S	S
Client: Sturgeon Services → Aera Energy	Project: McCroskey WS-12 Tasting							
Location: East Cat Canyon, McCroskey WS-12	Weather: Hot, clear							
Observer: Timothy Nicely (Fugro)	Observation Period:		Start:		Stop:			

Description:

9³⁰ am On site for video log. Programmed transducer. Setup sun shade.
 Only 200 gallons of water was introduced into well overnight. Dean onsite.
 9⁵⁰ 10¹⁵ Video log to be here @ 10⁴⁵ am.
 SWL: ²⁴⁹247 ft btoc. Some perforations @ 350 ft.
 Fill @ 491 ft. ∴ ~210 feet of fill. No clear perforations. Heavily encrusted
 No parts ~260 opened. Well is in poor condition
 12³⁰ Per call w/ Eric Pulson + Dean Tramm, plan is to continue w/ plan
 for step test. Pump to be installed today.
 Dean to remain on site until 4pm. Fisher Conn to return @ 7am tomorrow
 12⁴⁵ Off site.

Mileage: _____ miles

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REPORT OF FIELD OBSERVATIONS



Job No.: 04.62120024	Date: October 3, 2012	M	T	W	T	F	S	S
Client: Sturgeon Services → Aero Energy	Project: McCroskey WS-12 Testing							
Location: East Cat Canyon, McCroskey WS-12	Weather: Clear							
Observer: Timothy Nialy (Fugro)	Observation Period:		Start:		Stop:			

Description:

Pump installation underway by Fisher Pump crew, observed by Dean Trormin.
 Pump intake installed to 479 feet. Tube for transducer installed to 473 feet.
 Static water level: 251.41 feet below top of tube (3 feet above casing).
 Transducer (300 psi range) installed to 473 feet. Therefore: 226 ft
 water above transducer

1:47 pm Started transducer at 1 minute intervals.

1:55 pm Pump on to check rotation. See Pumping Test Field Dth Form for details. Switched off

2:01:30 pm Switched on. No discharge. Switched off.

2:07 pm Meter: 58, 017, 084 ft³ Switched on for step test.

Pumped for 100 minutes at 42 gpm (after initial high rate).

100 minutes at 75 gpm

100 minutes at 100 gpm

100 minutes at 125 gpm (until 8:37 pm)

Meter not accurate enough so flow rates calculated with bucket & stopwatch. Flow directed to top of slope at several locations. Flow reached road, crossed to west side then down (North) along shoulder of Long Cyn. Rd, at times crossing back to east side. No pooling evident.

Mileage: _____ miles

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WR-F45 Pumping Test Field Data Form (Cont.)

Project Name: Aera East Canyon Date: October 3, 2012

Well No. McCroskey WS-12 Project No.: 04.62120024

Clock Time	Elapsed Time (Minutes)	Water Level (Feet BTOC)	Drawdown (Feet)	Discharge (Gallons)	Discharge (gpm)	Comments (e.g., specific capacity, valve adjustments)
1:47 pm	—					Standard XD (300psi) to 473'
1:55 pm		251.41	—			On.
2:01:30 pm						On.
2:07:00 pm	0					On
2:14 pm	14			42 gpm	→	70 psi. Turbid
2:20 pm	27			"	42	80 psi. Turbid not
3-	53					
3:30 pm						
3:47 pm				58,047,134	42-50	Clear
48	100				27/35g	83 psi. ↑ Q 60 psi
49					5/3=100	↓ to 70 psi
3:52 pm				58,047,173		Cloudy
3:54 pm				195		62 psi
4:00 pm				58,047,235		meter not working?
4:00:07					75	
4:11				304		62 psi Clear
4:17					76	61 psi
4:27				416		
4:37	150/50			486	75	
4:59 500				650	75	Water not to road yet
5:24				823	75	
5:27	200/100			58,047,645		↑ Q to 40 psi
5:30					100	
5:31				58,047,893		
5:34					102	
5:42				58,048,014		
5:45					98	
6:00 pm				210		
6:17 pm				394	93	
6:19					98	32 psi
6:24					100	
6:25				479	100	
6:39					109	~ Q
6:41					103	
6:43					94	
6:47					100	38 psi
6:53					103	38 psi
7:02				884		
7:07				926	100	↑ to 20 psi.
7:09					115	20 psi ↑ to 18
7:10				—	125	
7:15					120	↑ Q
8:20						Open

REPORT OF FIELD OBSERVATIONS



Job No.: 04.G212 0024	Date: October 4, 2012	M	T	W	<input checked="" type="radio"/>	F	S	S
Client: Surgeon Services → Aer	Project: McCroskey, WS-12 Testing							
Location: East Cct Canyon, McCroskey WS-12	Weather: Clear							
Observer: Timothy Nick, Fugro	Observation Period:	Start:	Stop:					

Description:

Compiled equipment and lighting for constant rate test (lighting, generator...)
 11⁰⁰ am Started pumping of well for test at 125 gpm. See Pumping Test Field Data Form for details.
 125 gpm rate steady after initially higher rate.
 After several hours, flow rate and pumping level steady.
 After 2 hours (13⁰⁰) water became rusty in color, clearing for several hours thereafter.
 Minor erosion onto shoulder and road noted.
 19⁰⁰ Tank fed by this well (10,000 gal) is 1/2 full: 4.5ft from top of 9 ft high tank.
 23⁰⁰ Test steady. To leave pump on all night. Collected water samples. When leaving site, noticed small slump at / onto road.
 23¹⁶ Stopped water flow from pump. Test terminated. Data sufficient for analysis due to steady PWB & Q. Moved cones in front of slump. Called Dean. Sent pictures of slump.
 00⁰⁰ (Midnight) Cleaned up dirt w/ shovel w/ Dean (lights, traffic control) No tire marks were present @ this very recent slump. Photographed site. Slump is small and superficial < 2ft deep.
 00⁵⁰ Dean and I leave site. Road sufficiently delimited. To get and clean w/ backhoe tomorrow morning.

Mileage: _____ miles

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WR-F45 Pumping Test Field Data Form (Cont.)

Project Name: Aca East Cut Canyon Date: 10/4/2012

Well No. McCranky WS-12 Project No.: 04.G2120024

Clock Time	Elapsed Time (Minutes)	Water Level (Feet BTOC)	Drawdown (Feet)	Discharge (Gallons)	Discharge (gpm)	Comments (e.g., specific capacity, valve adjustments)
1100	0	246.6	0	58050213	~15g/gpm	Pump switched on
01		See		Meter		Water to surface
02		transducer		not	2.06	Turbid
03		date		accurate	2.10	
04					2.05	↓ Q
05					2.22	↓ Q to 30psi
07					2.30 / 130	
08					2.30 / 130	
10					2.6 / 115	↑ Q to 30psi
12					2.2 / 136	↑ Q
14					2.35 / 128	
16					2.35 / 128	26 psi
18					2.34 / 128	
20					2.4 / 125	
22					2.4 / 125	28 psi
26					2.57 / 116	↑ Q
28					2.47 / 121	↑ Q
30					2.36 / 127	
35					2.45	↑ Q to ~18psi
37					2.36 / 127	✓
45					2.38	
55					2.4 / 125	Cleaning
1205					2.4 / 125	
1215					2.4 / 125	18psi
25					"	"
1235					2.4 / 125	
40					2.4 / 125	
50					"	
1300					" / 125	18psi Rusty water
15					"	
1330					"	
1345					2.35 / 127	very rusty
1400					2.4 / 125	1225mg/L on, 20.0°C, pH 7.37
1500					2.4 / 125	1237mg/L on 19.9°C, 7.44 ↓
1600					" "	1237, 19.9, 7.53 Cleaning
1700					2.45 / 122	1225, 19.9, 7.50, Cleaning
1710					2.4 / 125	15psi
1730					" "	15psi
1800					2.4 / 125	" Cleaning
						1217, 19.9, 7.47
1830					" / 125	16psi
1910					125	1217, 19.8, 7.49
2000					125	1219, 19.8, 7.46
2100					125	1211, 19.8, 7.44 Clear.

REPORT OF FIELD OBSERVATIONS



Job No.: 04.62120024	Date: October 5, 2012	M	T	W	T	F	S	S
Client: Sturgeon Services → Aea Energy	Project: McCroskey, WS-12 Testing							
Location: E. Cat Cyn, McCroskey WS-12	Weather: Clear							
Observer: Timothy Micky (Fugro)	Observation Period:		Start:			Stop:		

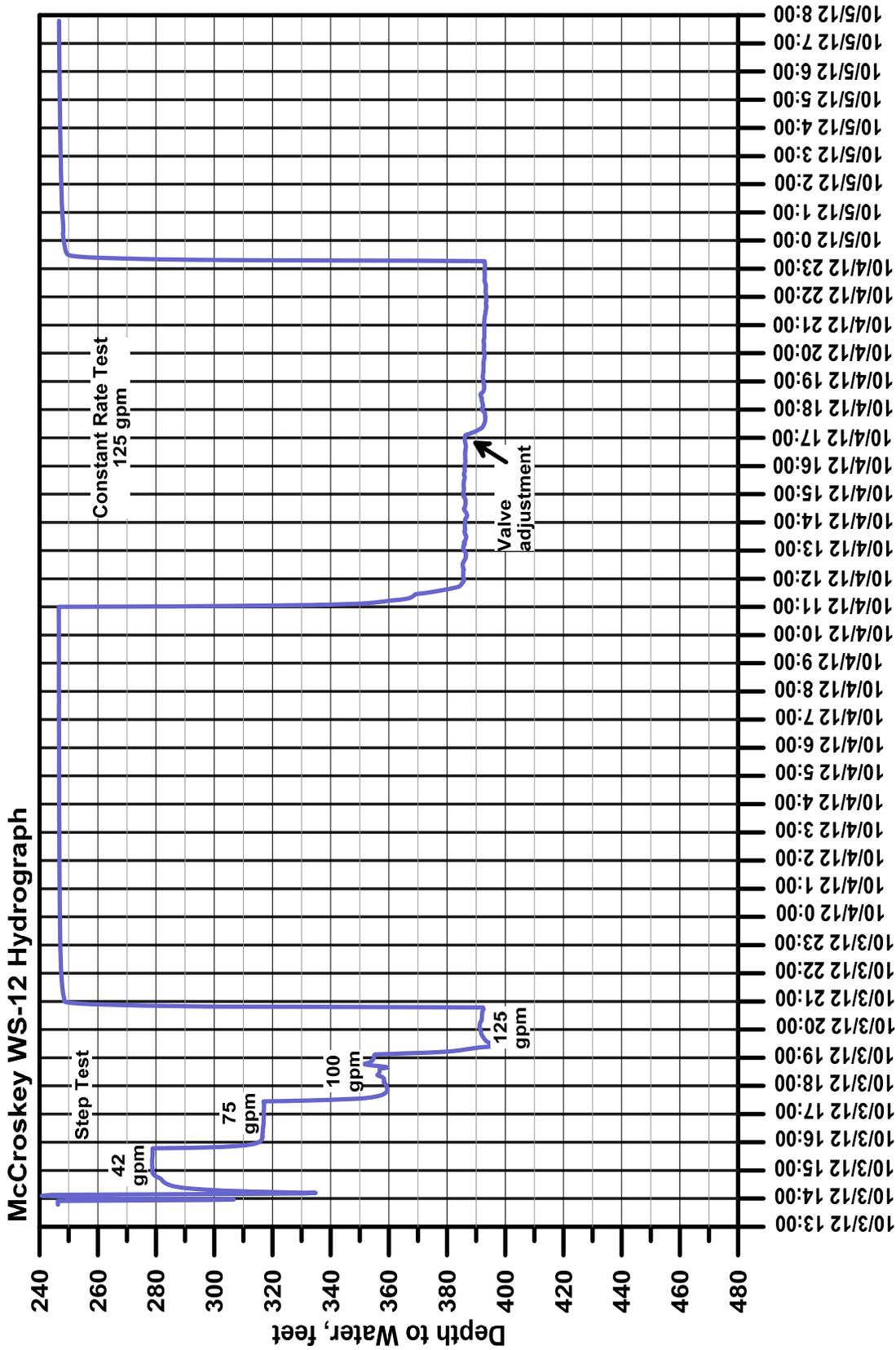
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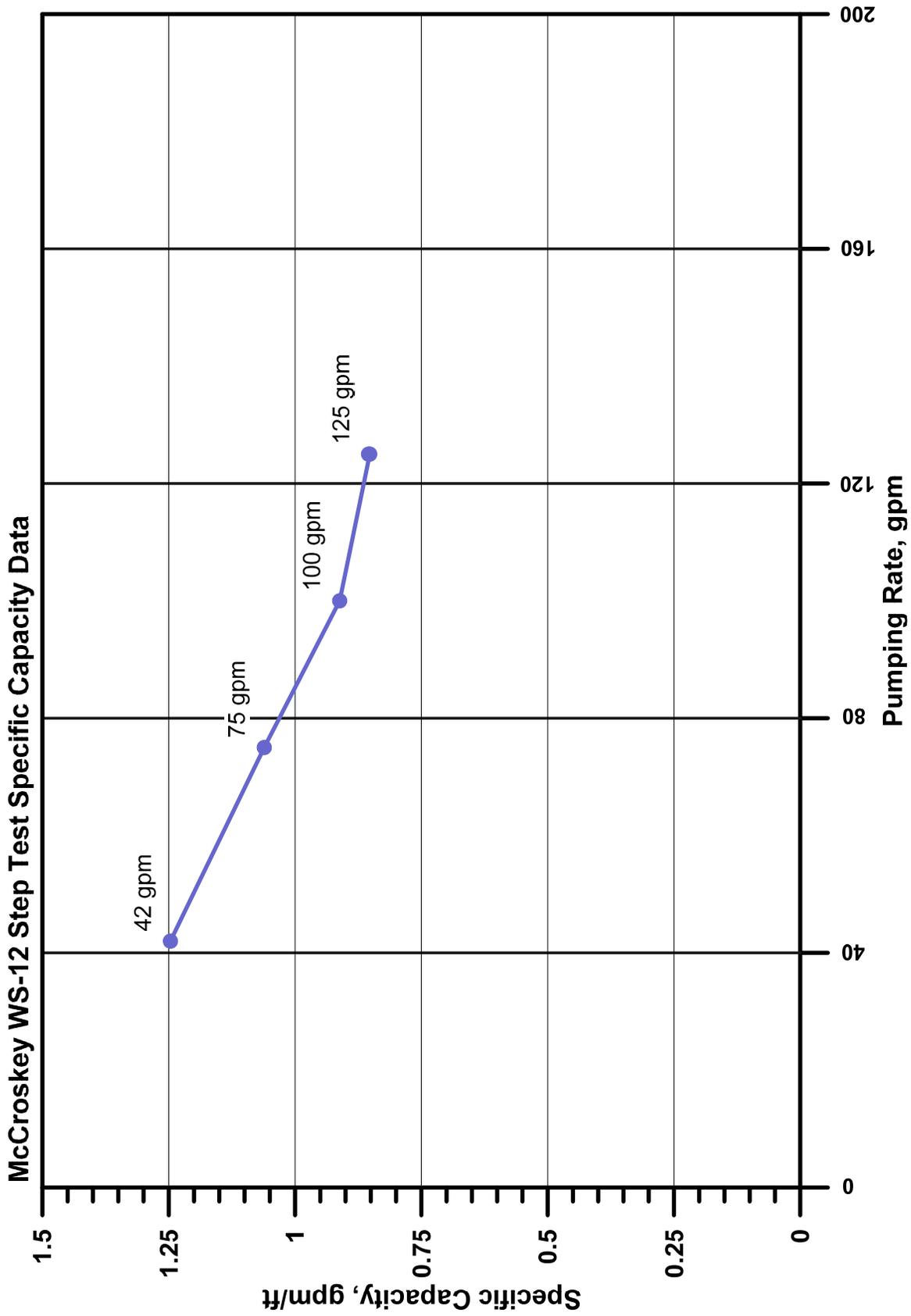
7³⁰ Fisher Pump on site to remove test pump then re-install 1.5HP existing pump.
 Remove transducer. Downloaded all data. Complete recovery to Pt.
 Dea removed bucket to cleanup Long Cyn. Rd.
 10³⁰ am Cleanup largely complete. Pump removal underway. Fisher plans to complete re-installation today, if not tomorrow.

Mileage: _____ miles

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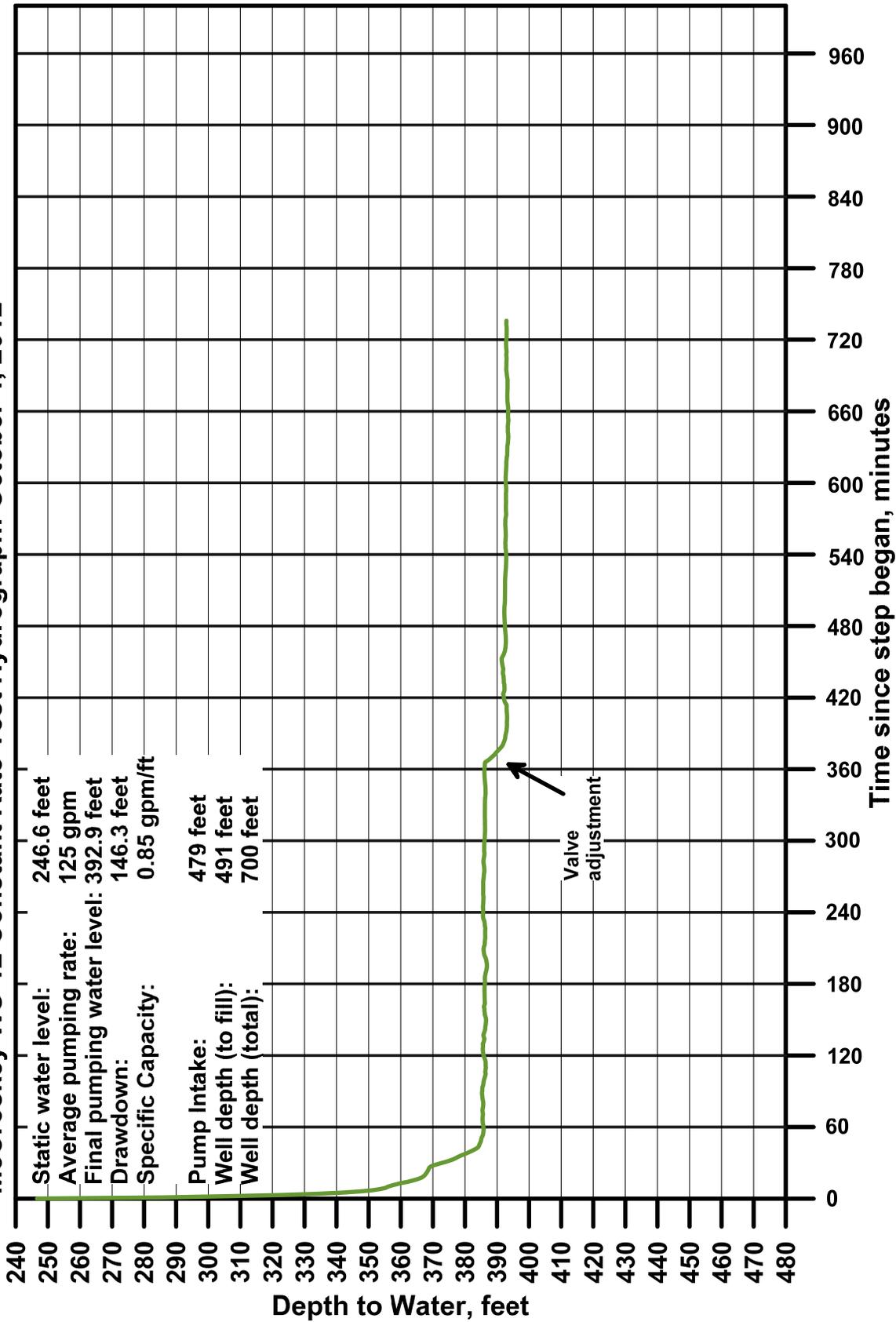
ATTACHMENT G
VARIOUS GRAPHS OF THE AQUIFER TEST RESULTS

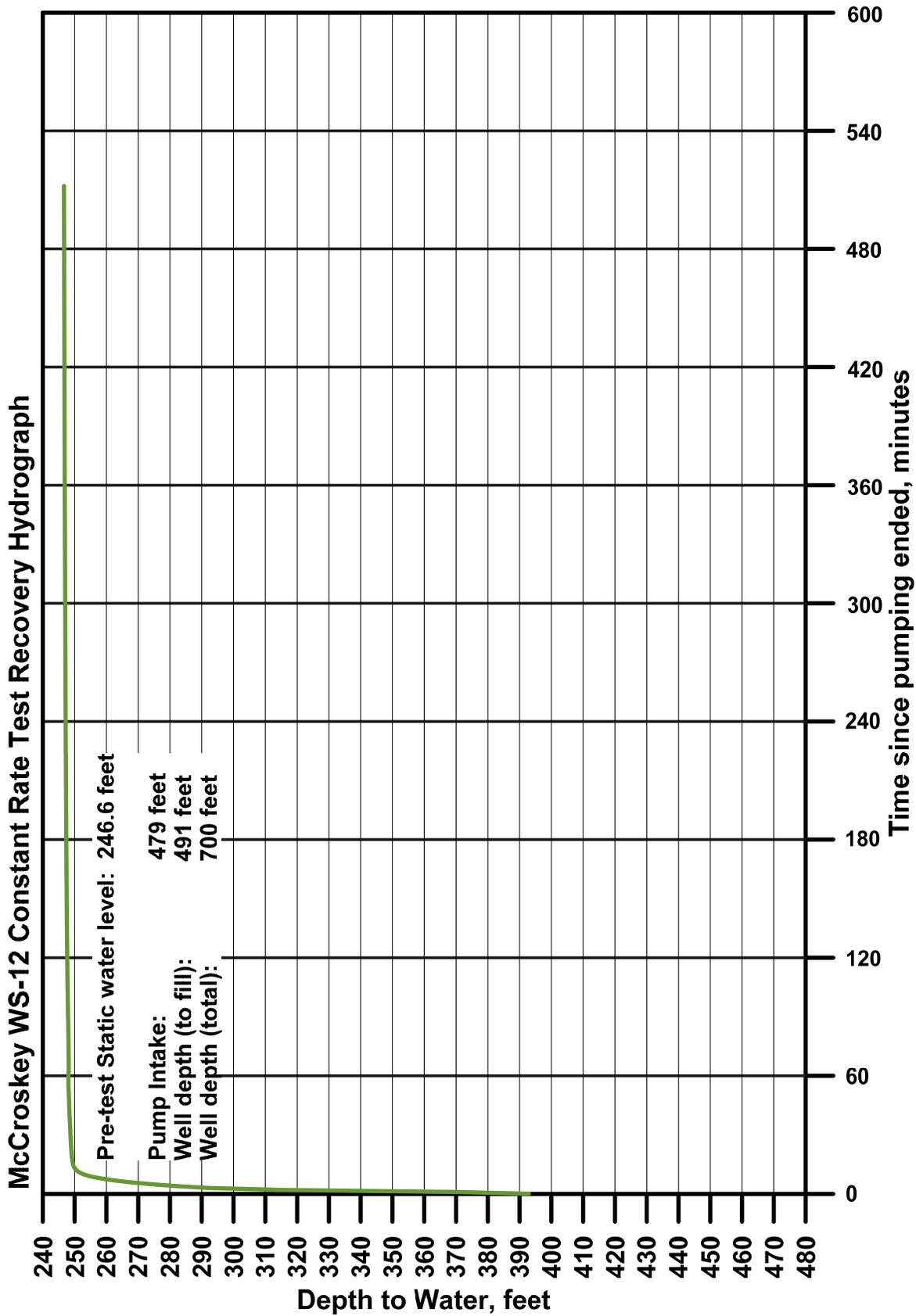


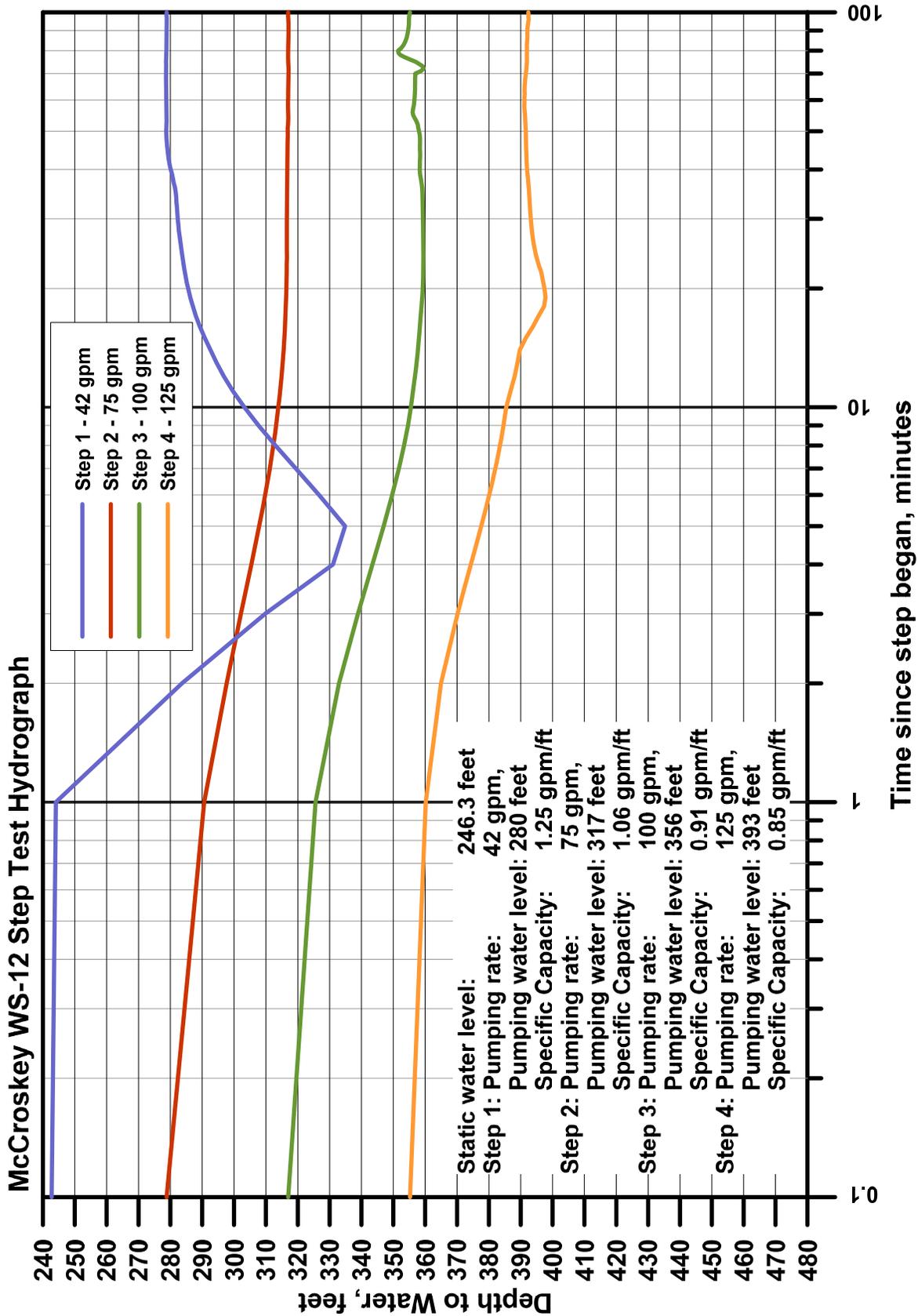




McCroskey WS-12 Constant Rate Test Hydrograph: October 4, 2012







ATTACHMENT H
CONSTANT DISCHARGE TEST RESULTS
GENERAL MINERAL CONSTITUENTS ANALYSIS



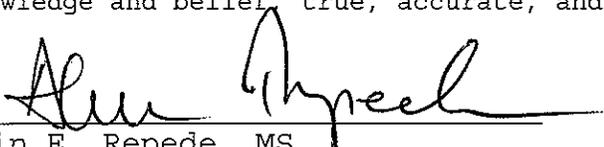
Prepared for: Fugro West, Inc.
4820 McGrath St. Suite 100
Ventura, CA 93003
Attn: Tim Nicely

Report Date: October 15, 2012
Laboratory Number: 122977
Project Name: McCroskey WS-12
Project No: 04.62120024
Sampled by: Client

On October 5, 2012, Capco Analytical Services, Inc. (CAS), received one(1) sample to be analyzed. The sample was identified and assigned the laboratory ID number listed below:

<u>SAMPLE DESCRIPTION</u>	<u>CAS LAB NUMBER ID</u>
McCROSKY WS-12	122977-01

By my signature below, I certify that the results contained in this laboratory report comply with applicable standards for certification by the California Department of Public Health's Environmental Laboratories Accreditation Program (ELAP), both technically and for completeness, and that, based on my inquiry of the person or persons directly responsible for performing the analyses, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete.


Alin E. Repede, MS
Director - Analytical Operations

If you have any further questions or concerns, please contact me at your convenience. This report consists of 6 pages excluding the cover letter and the Chain of Custody.

This report shall not be reproduced except in full without the written approval of CAS. The test results reported represent only the item being tested and may not represent the entire material from which the sample was taken.

CERTIFICATE OF ANALYSIS

Client: Fugro Consultants
Sample ID: McCroskey WS-12

CAS LAB NO: 122977-01
Analyst: AN/ABE/GM/LL

GENERAL MINERAL SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	METHOD	DATE ANALYZED
Alkalinity (CaCO ₃)	250	mg/L	1	10	2320 B	10/05/12
Bicarbonate (CaCO ₃)	250	mg/L	1	10	2320 B	10/05/12
Carbonate (CaCO ₃)	BQL	mg/L	1	10	2320 B	10/05/12
Hydroxide (CaCO ₃)	BQL	mg/L	1	10	2320 B	10/05/12
pH	6.8	S.U.	1	--	4500-H ⁺ B	10/05/12
Hardness	530	mg/L	1	10	2340 C	10/05/12
Chloride	88	mg/L	1	0.1	300.0	10/05/12
Fluoride	0.33	mg/L	1	0.1	300.0	10/05/12
Nitrate (as N)	2.9	mg/L	1	0.05	300.0	10/05/12
Sulfate	300	mg/L	1	0.2	300.0	10/05/12
Spec. Conductivity	1270	umhos/cm	1	1	120.1	10/05/12
T.D.S.	900	mg/L	1	10	2540 C	10/05/12
MBAS Surfactants	BQL	mg/L	1	0.1	5540 C	10/05/12
Calcium	200	mg/L	1	0.1	200.7	10/05/12
Copper	BQL	mg/L	1	0.02	200.7	10/05/12
Iron	1.3	mg/L	1	0.05	200.7	10/05/12
Magnesium	110	mg/L	1	0.1	200.7	10/05/12
Manganese	0.043	mg/L	1	0.005	200.7	10/05/12
Potassium	6.2	mg/L	1	0.2	200.7	10/05/12
Sodium	140	mg/L	1	0.5	200.7	10/05/12
Zinc	BQL	mg/L	1	0.03	200.7	10/05/12

T.D.S.: Total Dissolved Solids
mg/L: Milligrams/Liter (ppm)

QUALITY CONTROL SECTION

QUALITY CONTROL SECTION

Client: Fugro Consultants
Sample ID: Method Blank

CAS LAB NO: 122977-MB
Analyst: AN/ABE/GM/LL

GENERAL MINERAL SUMMARY

COMPOUND	RESULT	UNITS	DF	PQL	METHOD	DATE ANALYZED
Alkalinity (CaCO ₃)	BQL	mg/L	1	10	2320 B	10/05/12
Bicarbonate (CaCO ₃)	BQL	mg/L	1	10	2320 B	10/05/12
Carbonate (CaCO ₃)	BQL	mg/L	1	10	2320 B	10/05/12
Hydroxide (CaCO ₃)	BQL	mg/L	1	10	2320 B	10/05/12
Hardness	BQL	mg/L	1	10	2340 C	10/05/12
T.D.S.	BQL	mg/L	1	10	2540 C	10/05/12
MBAS Surfactants	BQL	mg/L	1	0.1	5540 C	10/05/12
Calcium	BQL	mg/L	1	0.1	200.7	10/05/12
Copper	BQL	mg/L	1	0.02	200.7	10/05/12
Iron	BQL	mg/L	1	0.05	200.7	10/05/12
Magnesium	BQL	mg/L	1	0.1	200.7	10/05/12
Manganese	BQL	mg/L	1	0.005	200.7	10/05/12
Potassium	BQL	mg/L	1	0.2	200.7	10/05/12
Sodium	BQL	mg/L	1	0.5	200.7	10/05/12
Zinc	BQL	mg/L	1	0.03	200.7	10/05/12

T.D.S.: Total Dissolved Solids
mg/L: Milligrams/Liter (ppm)

Quality Control Report

Client:	FUGRO	Date Sampled:	10/04/12
Sample ID:	McCroskey WS-12	Date Received:	10/05/12
CAS LAB NO:	122977	Date Analyzed:	10/05/12
Sample Matrix:	WATER	Analyst:	GP

Sample Name	Qualifier	Sample Result	QC Result	Unit	Spike Level	%REC	Control Limits
<u>Nitrate as N (by EPA 300)</u>							
Method Blank			BQL	mg/L			
Lab Control Sample			9.65	mg/L	10	97	90-110
121005 Blank Spike		BQL	9.84	mg/L	10	98	80-120
121005 Blank Spike Duplicate		BQL	10.03	mg/L	10	100	80-120
<u>Sulfate (by EPA 300)</u>							
Method Blank			BQL	mg/L			
Lab Control Sample			28.10	mg/L	30	94	90-110
121005 Blank Spike		BQL	28.50	mg/L	30	95	80-120
121005 Blank Spike Duplicate		BQL	28.95	mg/L	30	96	80-120

mg/L: Milligrams/Liter (ppm)

%Rec: Percent Recovered

BQL: Below Practical Quantitation Limit



Analytical Services, Inc.

Environmental and Analytical Services-Since 1994

Quality Control Report

Client:	FUGRO	Date Sampled:	10/04/12
Sample ID:	McCroskey WS-12	Date Received:	10/05/12
CAS LAB NO:	122977-01	Date Analyzed:	10/05/12
Sample Matrix:	WATER	Analyst:	GP

Sample Name	Qualifier	Sample Result	QC Result	Unit	Spike Level	%REC	Control Limits
<u>Chloride (by EPA 300)</u>							
Method Blank			BQL	mg/L			
Lab Control Sample			29.13	mg/L	30	97	90-110
121005 Blank Spike		BQL	29.91	mg/L	30	100	80-120
121005 Blank Spike Duplicate		BQL	30.42	mg/L	30	101	80-120
<u>Fluoride (by EPA 300)</u>							
Method Blank			BQL	mg/L			
Lab Control Sample			10.52	mg/L	10	105	90-110
121005 Blank Spike		BQL	10.66	mg/L	10	107	80-120
121005 Blank Spike Duplicate		BQL	10.79	mg/L	10	108	80-120

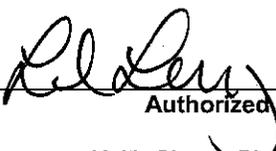
mg/L: Milligrams/Liter (ppm)
 %Rec: Percent Recovered
 BQL: Below Practical Quantitation Limit

Certificate of Analysis

Notes:

The Chain of Custody document is part of the analytical report.

Any remaining sample(s) for testing will be disposed of one month from the final report date unless other arrangements are made in advance.
All results are expressed on wet weight basis unless otherwise specified.



Authorized Signature
Keith Chang, Ph.D. (QA/QC Supervisor)

The results in this report apply to the samples analyzed in accordance with the chain of custody document. Capco Analytical certifies that the test results meet all requirements of ELAP unless noted in the Case Narrative. This analytical report must be reproduced in its entirety.

Legend for Abbreviations:

PQL	Practical Quantitation Limit
BQL	Below Practical Quantitation Limit
ND	NOT DETECTED at or above the Reporting Limit. If J-value reported, then NOT DETECTED at or above the Method Detection Limit (MDL).
MDL	Method Detection Limit
MRL	Method Reporting Limit
MDA	Minimum Detectable Activity
MCL	Maximum Contamination Level

