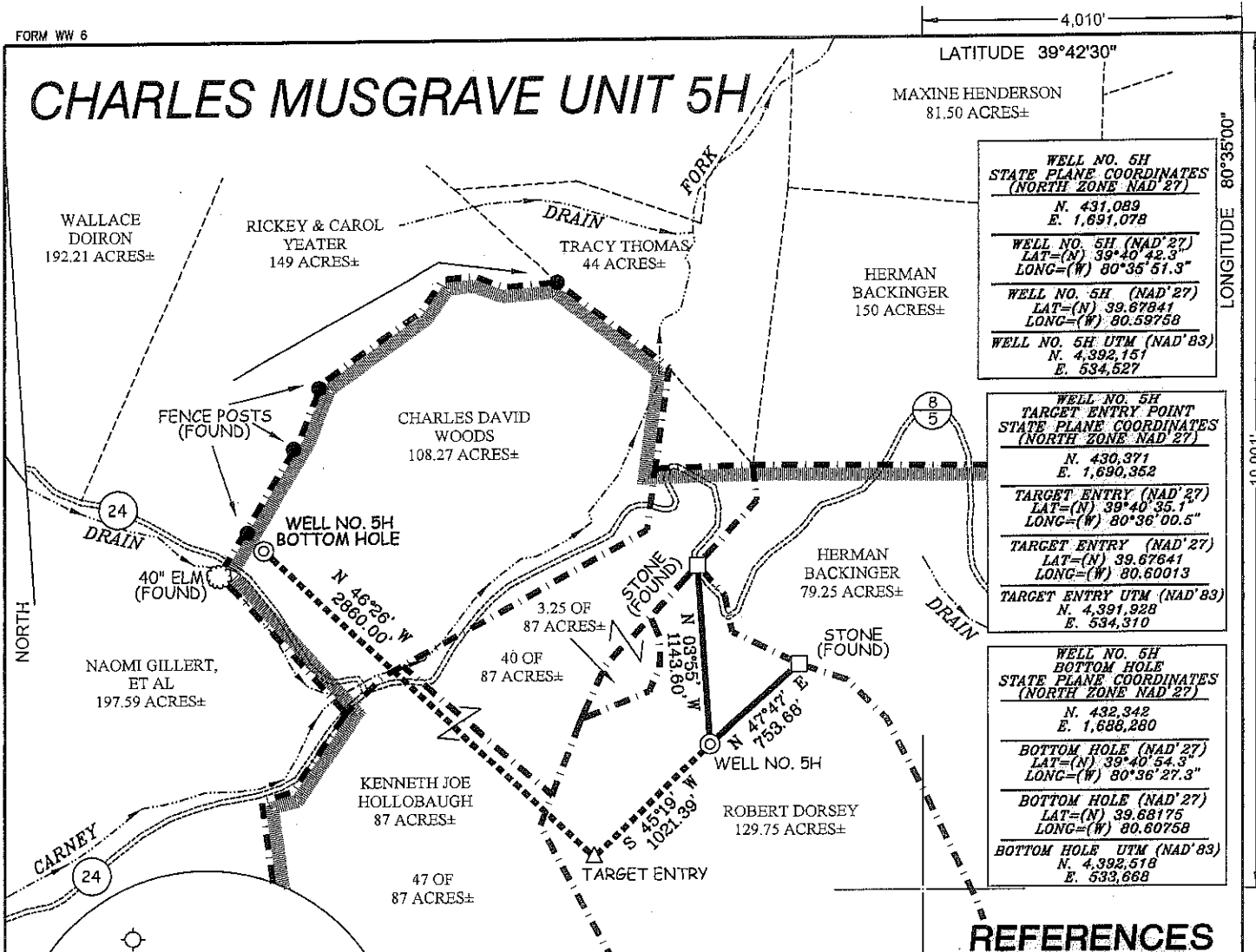


CHARLES MUSGRAVE UNIT 5H

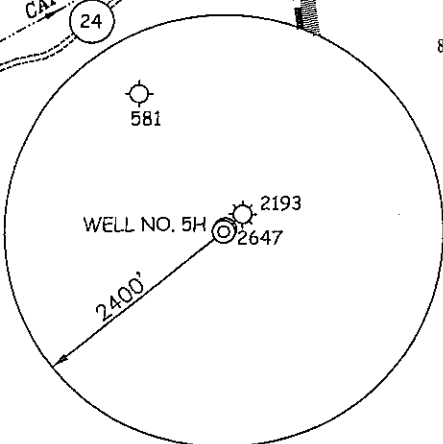
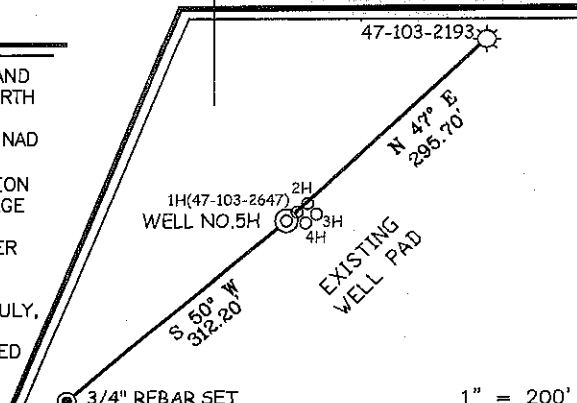


WELL NO. 5H STATE PLANE COORDINATES (NORTH ZONE NAD '27) N. 431,089 E. 1,691,078 <hr/> WELL NO. 5H (NAD '27) LAT=(N) 39°40'42.3" LONG=(W) 80°35'51.3" <hr/> WELL NO. 5H (NAD '27) LAT=(N) 39.67841 LONG=(W) 80.58758 <hr/> WELL NO. 5H UTM (NAD '83) N. 4,392,151 E. 534,527
WELL NO. 5H TARGET ENTRY POINT STATE PLANE COORDINATES (NORTH ZONE NAD '27) N. 430,371 E. 1,690,352 <hr/> TARGET ENTRY (NAD '27) LAT=(N) 39°40'35.1" LONG=(W) 80°36'00.5" <hr/> TARGET ENTRY (NAD '27) LAT=(N) 39.67841 LONG=(W) 80.60013 <hr/> TARGET ENTRY UTM (NAD '83) N. 4,391,928 E. 534,310
WELL NO. 5H BOTTOM HOLE STATE PLANE COORDINATES (NORTH ZONE NAD '27) N. 432,342 E. 1,688,280 <hr/> BOTTOM HOLE (NAD '27) LAT=(N) 39°40'54.3" LONG=(W) 80°36'27.3" <hr/> BOTTOM HOLE (NAD '27) LAT=(N) 39.68175 LONG=(W) 80.60758 <hr/> BOTTOM HOLE UTM (NAD '83) N. 4,392,518 E. 533,888

NOTES ON SURVEY

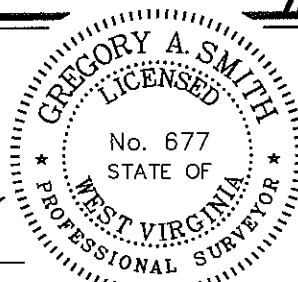
1. TIES TO WELLS, REFERENCES, AND CORNERS ARE BASED ON GRID NORTH FOR THE WV STATE PLANE COORDINATE SYSTEM NORTH ZONE NAD '27.
2. LEASE BOUNDARY SHOWN HEREON TAKEN FROM DEED BOOK 142 PAGE 50 AND ADJOINING DEEDS.
3. SURFACE OWNER AND ADJOINER INFORMATION TAKEN FROM THE ASSESSOR AND COUNTY CLERK RECORDS OF WETZEL COUNTY IN JULY, 2010.
4. WELL COORDINATES ESTABLISHED BY DGPS(SURVEY GRADE).

REFERENCES



I THE UNDERSIGNED, HEREBY CERTIFY THAT THIS PLAT IS CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF AND SHOWS ALL THE INFORMATION REQUIRED BY LAW AND THE REGULATIONS ISSUED AND PRESCRIBED BY THE DIVISION OF ENVIRONMENTAL PROTECTION.

P.S. *Gregory A. Smith*
677



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.
 DATE AUGUST 30, 20 10
 OPERATORS WELL NO. CHARLES MUSGRAVE UNIT 5H
 API WELL NO. 47-103-02754 H
 STATE COUNTY PERMIT

MINIMUM DEGREE OF ACCURACY 1/200 FILE NO. 7507P5H(340-09)
 PROVEN SOURCE OF ELEVATION DGPS (SURVEY GRADE) SCALE 1" = 1,000'

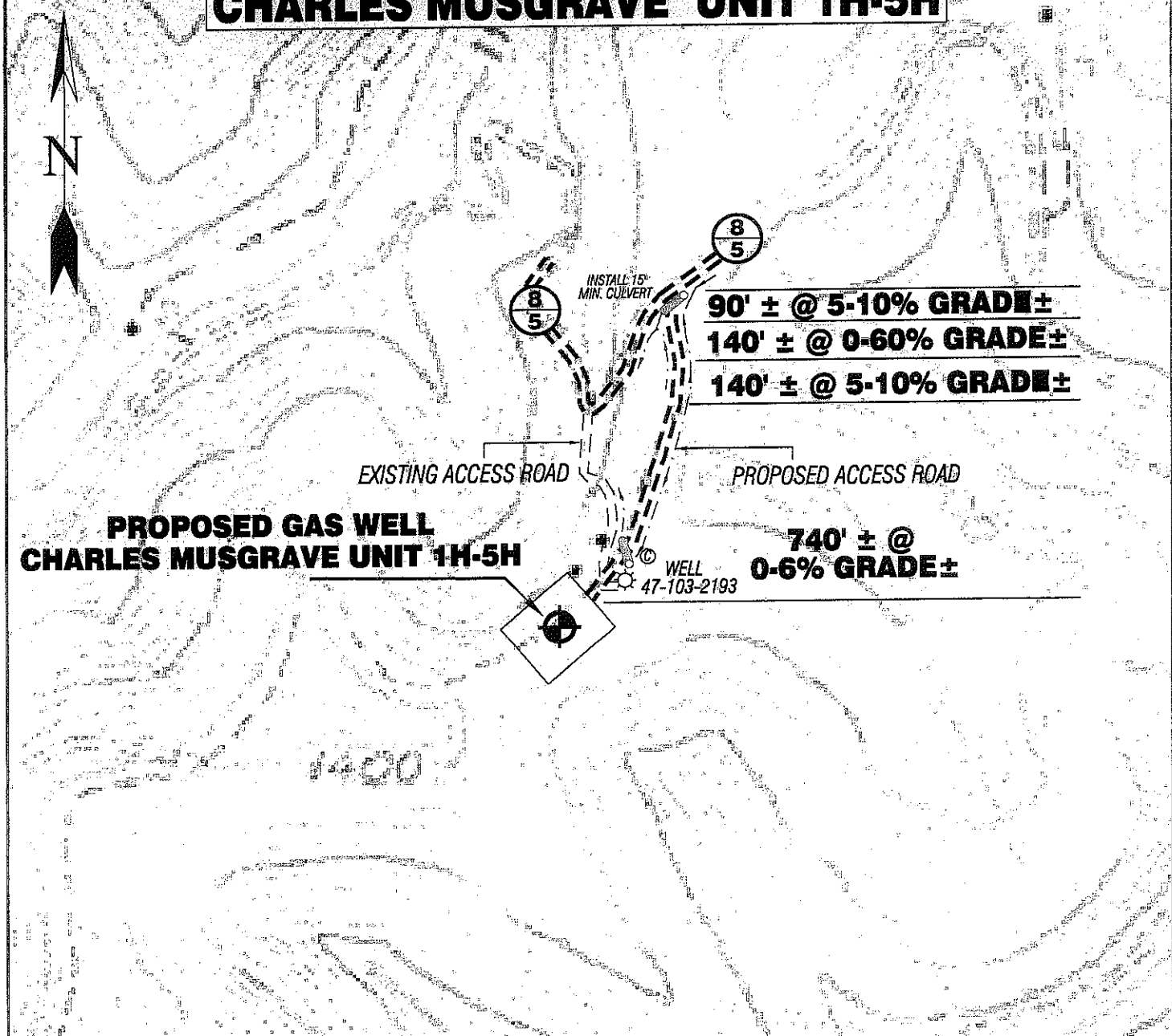
STATE OF WEST VIRGINIA
 DIVISION OF ENVIRONMENTAL PROTECTION
 OFFICE OF OIL AND GAS

WELL TYPE: OIL GAS LIQUID INJECTION WASTE DISPOSAL IF "GAS" PRODUCTION STORAGE DEEP SHALLOW

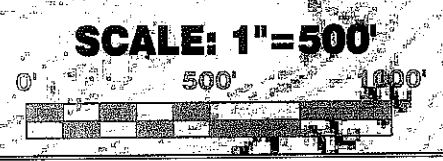
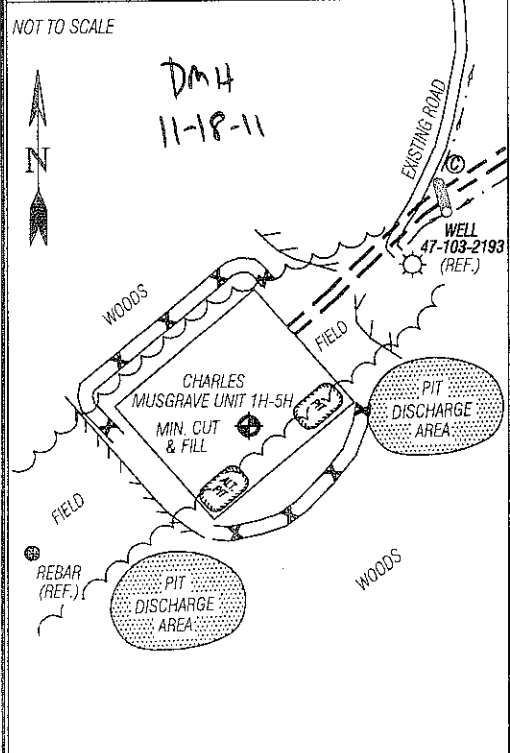
LOCATION: ELEVATION 1,344' WATERSHED MILLER RUN & CARNEY FORK
 DISTRICT CENTER COUNTY WETZEL QUADRANGLE LITTLETON 7.5'
 SURFACE OWNER ROBERT DORSEY ACREAGE 129.75±
 ROYALTY OWNER CHARLES E. MUSGRAVE, ET AL LEASE ACREAGE 129.75, 87, & 108.27±
 PROPOSED WORK: LEASE NO. _____
 DRILL CONVERT DRILL DEEPER REDRILL FRACTURE OR STIMULATE PLUG OFF OLD FORMATION
 PERFORATE NEW FORMATION PLUG AND ABANDON CLEAN OUT AND REPLUG OTHER
 PHYSICAL CHANGE IN WELL (SPECIFY) _____ TARGET FORMATION MARCELLUS
 ESTIMATED DEPTH 7,472' + HORIZONTAL LEG

WELL OPERATOR GRENADIER ENERGY PARTNERS, LLC DESIGNATED AGENT SHARON BARTH-CT CORP.
 ADDRESS 1610 WOODSTEAD COURT, SUITE 330 ADDRESS 707 VIRGINIA ST. EAST 15TH FL.
THE WOODLANDS, TX 77380 CHARLESTON, WV 25301

CHARLES MUSGRAVE UNIT 1H-5H



Detail Sketch for Proposed Charles Musgrave Unit 1H-5H



TOPO SECTION OF USGS LITTLETON 7.5' QUADRANGLE

PROPOSED CULVERT INVENTORY (FOR BID PURPOSES ONLY)

12" (MINIMUM) CULVERTS	1 CUL.
15" (MINIMUM) CULVERTS	1 CUL.

ADDITIONAL CULVERTS AND/OR OTHER DRAINAGE STRUCTURES & SEDIMENT CONTROL DEVICES MAY BE REQUIRED BY THE WV D.E.P. OIL & GAS INSPECTOR. OPERATOR IS RESPONSIBLE FOR COORDINATION WITH CONTRACTOR AND SLS REGARDING ANY CHANGES OR ADDITIONS THE STATE MAY REQUIRE.

ALL ROADS SHOWN HEREON ARE EXISTING UNLESS OTHERWISE NOTED AND SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.E.P. OIL AND GAS BMP MANUAL ENTRANCES AT COUNTY/STATE ROADS SHALL BE MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATION. SEPARATE PERMITS MAY BE REQUIRED BY THE D.O.T.

SEDIMENT BASINS (TRAPS) AND APPROPRIATE EROSION CONTROL BARRIERS ARE TO BE CONSTRUCTED AT ALL CULVERT AND CROSS DRAIN INLETS AND OUTLETS AS REQUIRED IN THE WV D.E.P. OIL AND GAS BMP MANUAL. FIELD CONDITIONS (ROCK OUTCROPS AND BEDROCK) MAY PROHIBIT INLET TRAPS BEING INSTALLED. WHEN THESE CONDITIONS EXIST ADDITIONAL EROSION CONTROL MEASURES SHALL BE EVALUATED AND UTILIZED AS NEEDED.

EARTHWORK CONTRACTORS ARE RESPONSIBLE FOR NOTIFICATION TO THE OPERATOR AND INSPECTOR PRIOR TO ANY DEVIATION FROM THIS PLAN.

TEMPORARY SEED & MULCH ALL SLOPES AFTER CONSTRUCTION OF LOCATION.

CUT & STACK ALL MARKETABLE TIMBER.

STACKED BRUSH MAY BE USED FOR SEDIMENT CONTROL.

APPLICATIONS FOR SEPARATE PLC PERMITS ON THE ACCESS ROAD STREAM CROSSINGS HAVE BEEN PREPARED (IF APPLIES).

- = EXISTING CULVERT
 - = PROPOSED CULVERT 12" MIN. UNLESS OTHERWISE NOTED
 - = PROPOSED STREAM CROSSING (IF APPLIES)
- *SEE TABLE FOR CULVERT DETAIL

SLS

SMITH LAND SURVEYING, INC.
P.O. BOX 150 GLENVILLE, WV. 26351
PH: (304) 462-5634 FAX: (304) 462-5656 E-MAIL: sls@slssurveys.com

DRAWN BY C.P.M.	FILE NO. 7507	DATE 09-15-11	CADD FILE: 7507RECR.dwg
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